The Impact of Prolonged Participation in a Pro-Social Cognitive Behavioral Skills Program on Elementary Age Students, with Behavior Related Disorders, Behavior Accelerative, Behavior Reductive, and Return to Regular Classroom Outcomes

Ted H. Esser

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The Impact of Prolonged Participation in a Pro-Social Cognitive Behavioral Skills Program on Elementary Age Students, with Behavior Related Disorders, Behavior Accelerative, Behavior Reductive, and Return to Regular Classroom Outcomes

By

Ted H. Esser

A Dissertation

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Supervisory Committee

Dr. Jeanne L. Surface

Dr. Neal F. Grandgenett

Dr. Jody C. Isernhagen
Abstract

THE IMPACT OF PROLONGED PARTICIPATION IN A PRO-SOCIAL COGNITIVE BEHAVIORAL SKILLS PROGRAM ON ELEMENTARY AGE STUDENTS, WITH BEHAVIOR RELATED DISORDERS, BEHAVIOR ACCELERATIVE, BEHAVIOR REDUCTIVE, AND RETURN TO REGULAR CLASSROOM OUTCOMES

Ted H. Esser

University of Nebraska

Advisor: Dr. John W. Hill

Overall, pretest-posttest results indicated statistically significant pretest beginning program compared to posttest ending program percentage of behavioral improvement for on task, following directions, and positive interactions outcomes improvement for individual students who completed the elementary grades pro-social cognitive behavioral skills program within one school year or less \( (n = 16) \), within one to two school years \( (n = 14) \), and within one school year or less \( (n = 15) \). These results indicate program intervention effectiveness for these students. The posttest ending outcomes compared to posttest ending for on task, following directions, and positive interactions outcomes for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within one school year or less, within one to two school years, and within more than two school years where the overall main effect of posttest ending on task outcomes for individual students with identified disabilities was not statistically significant. Statistical equipoise at posttest indicates program effectiveness over time for
all three groups of students where posttest levels for on task, following directions, and positive interactions were consistent with return to less restrictive classroom placements. The average time out frequency change pretest beginning program nine weeks compared to posttest ending program nine weeks for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within one school year or less, within one to two school years, within more than two school years and were returned to less restrictive classroom placements was not statistically different. Statistical equipoise at posttest indicates program effectiveness over time for all three groups of students where posttest levels of behavior resulting in time out consequences were consistent with return to less restrictive classroom placements.
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CHAPTER ONE

Introduction

Students with early onset disruptive, aggressive, or oppositional behavior are at-risk for a range of adverse outcomes throughout their lives (Fergusson & Lynskey, 1998; Moffitt, 1993; Schaeffer, Petras, Ialongo, Poduska, & Kellam, 2003; van Lier, van der Sar, Muthén, & Crijnen, 2004; Walters, Ronen, & Rosenbaum, 2010). These adverse outcomes include school failure (Fergusson & Lynskey, 1998; Suh & Suh, 2007), crime (Fergusson, Lynskey, & Horwood, 1996; Schaeffer et al., 2003), substance abuse (Olweus, 1995; Fergusson, & Lynskey, 1996), mental health disorders (Olweus & Limber, 1999; Schaeffer et al., 2003), unemployment or under-employed (Zigmond, 2006), poor interpersonal relations (White & Loeber, 2008), and domestic abuse (Montague, Enders, Dietz, Dixon, & Cavendish, 2008; Scanlon & Mellard, 2002). Research shows that students who enter school with elevated aggression will continue to have poor academic and behavioral outcomes well into their elementary career (Kim-Cohen et al., 2005).

Schools assist students with their aggressive and disruptive behavior beginning with earliest age of diagnosis (Hester, et al., 2004). Behavioral support programs are found in preschool and general education classroom settings (Bradshaw, Reinke, Brown, Bevans, & Leaf, 2008; Fuchs & Fuchs, 2006) and highly structured residential treatment programs (Hendrickson, Smith, & Frank, 1998; Kauffman, 1999; Panacek & Dunlap, 2003). The cost of treating students with aggressive and disruptive behavior attending public schools combined with the family’s cost of behavioral therapy can be $13,000 or more per child during a six-month period (Foster & Jones, 2005).
Aggression. It is not uncommon for young children to display periods of aggressive behaviors that quickly decrease as the child becomes more socialized, suggesting that aggression may be a normal part of growing up (Campbell, Spieker, Burchinal, & Poe, 2006; Tremblay, 2000). Toddlers frequently use aggression to settle disputes or express anger and frustration (Cummings, Iannotti, & Zahn-Waxler, 1989; Tremblay, 2006; Nagin & Tremblay, 1999; Tremblay et al., 2004). By the time children are ready for school they use their language and cognitive abilities rather than aggression to arbitrate disputes (Hartup, 1996, Tremblay, 2000). However, a small population of children persists in using aggression well into childhood and beyond (Campbell et al., 2006; Huesmann, Dubow, & Boxer, 2009). Schaeffer et al. (2003) asserts that children who continue to display persistent aggressive behaviors in early elementary school are at a much high risk to be involved in later criminal behavior or be diagnosed with conduct or antisocial personality disorders.

There is a growing body of research that posits the developmental trajectories of children who display early on-set aggressive behaviors that later will be identified as antisocial behaviors (Moffitt, 1993; Patterson, DeBaryshe, & Ramsey, 1989; Tremblay et al., 2004; Vitaro, Brendgen, & Tremblay, 2000). Moffitt (1993) proposes that antisocial/aggressive children follow one of two developmental courses--life-course-persistent and adolescent-limited. The life-course-persistent path is characterized by high levels of aggression throughout the individual's development and continues into adulthood. The adolescent-limited path is characterized by displaying anti-social behaviors only during the adolescent years.

Patterson and colleagues (1989) proposed two developmental pathways that lead
toward later antisocial behavior--early starters and late starters. The early starter pathway is characterized by aggression and antisocial behavior starting early in life, usually before reaching school age, and continuing into adulthood. Early starter pathway children also have coercive parenting, school failure, and peer rejection due to their antisocial behaviors. The late starter student is antisocial during the adolescent years, however, this behavior fades and falls off significantly, as they become young adults. A late starter student does not have coercive parenting and peer rejections but often endure school failure. Furthermore, students who are considered late starters tend to have poor parental monitoring, oppositional behaviors, and deviant peer group involvement.

According to Moffitt (1993) and Patterson et al. (1989) individuals with early onset aggression and antisocial behaviors that persist overtime had the poorest adult outcomes. Walters et al. (2010) reinforced these findings in his longitudinal study of 2,175 members of the National Longitudinal Survey of Youth-Child Data. Other researchers (Schaeffer et al., 2003) also found in their study of 297 males that children identified at six years of age with persistent aggressive behaviors had poor social and educational outcomes at 20 years of age. Huesmann et al. (2009) examined 40 years worth of data from the Columbia County Longitudinal study of 856 children and found a surprising continuity of aggression from ages eight to 48. These findings would suggest that children who do not develop the skills to control their aggressive tendencies suffer peer rejection, school failure, adolescent delinquency, and later criminal behavior.

Campbell et al. (2006) examined data from the National Institute of Child Health and Human Development, Early Child Care and Youth Development Longitudinal Study, on 1195 children from 24 months to 12 years of age identifying five different aggression
trajectories for children with early aggression tendencies. All of these trajectories showed some negative outcomes but children with the highest and most stable aggression had the most negative outcomes in the study. Students who receive the identification of *high stable aggression* are at risk for the poorest outcomes. Students identified with patterns of *high stable aggression* had the lowest scores on the Woodcock-Johnson Tests of Achievement over time, reported high levels of depression, and lower quality friendships over time. Children in the group labeled *moderate stable aggression* were reported as having numerous problems with academic achievement, poor impulse control, and poor peer relationships. Furthermore, students identified with patterns of *moderate stable aggression* also self-reported depressive symptoms, engaged in risky behavior, and engaged in bullying behaviors. Students identified with patterns of *low-stable aggression*, compared to children who did not display aggressive behavior, had lower academic achievement and social issues at school. Students identified with patterns of *low-stable aggression* also self-reported bullying others and reported being lonely. Findings suggest that even low levels of aggressive behavior by children of school age can predict negative social and academic outcomes throughout their later school years (Campbell et al., 2006).

**Special Education Placement.** Children who display disruptive and aggressive behaviors in school may be alienated from their teachers when the teacher responds to the child’s problem behaviors with counter aggression (Thomas, Bierman, Thompson, & Powers, 2008) resulting in increased acting out by the children (Dutton Tillery, Varjas, Meyers, & Collins, 2010). Disruptive and aggressive elementary students are often removed from the instructional setting due to their behavior (Farmer et al., 2010; Hill &
Coufal, 2005) limiting their ability to learn and practice more socially desirable behaviors (Panacek & Dunlap, 2003). If the student does not respond to general education interventions and support, the student may develop long-term, chronic, social/emotional/behavioral disabilities (Hester et al., 2004).

Public schools are required to provide educational and behavioral interventions necessary for students to receive a free appropriate public education. When a student is not making adequate progress in the general education setting, even with supports, the school is required to evaluate the student to determine if he/she may have a disability as recognized under the Individuals with Disabilities Education Improvement Act. To determine if a student has a disability the multi-disciplinary team (MDT) conducts a comprehensive evaluation of the student in all areas of suspected disabilities. The MDT team then reviews that data from the evaluation to determine if the student meets criteria for a disability and requires special education and related services.

Students who display aggression, poor peer relations, academic failure, and affiliation with deviant peers are at high risk of receiving an identification of an emotional or behavioral disorder (EBD; Kauffman, 1999). Kauffman (1999) argues that early identification and intervention of EBD is imperative to change the life course of students in a positive manner.

Due to their disruptive and aggressive behavior, students with an identification of EBD are more likely to receive a placement in more restrictive educational settings than students identified as having other disabilities (Barth et al., 2007; Gagnon & Leone, 2006). The U.S. Department of Education (2010) reported that over 40% of the students with EBD spent the majority of their school day in segregated settings, compared to 11%
for students with specific learning disabilities.

Students with EBD in segregated environments have limited access to typically developing peers further compounding their inability to interact appropriately with others (Thomas et al., 2008). Without these typically developing models for the EBD student to interact with and practice desirable interactions, it is very difficult for the EBD student to generalize any new behavior he/she may have acquired. Schneider (1982) found that EBD students educated in restrictive settings had poorer long-term academic and behavior outcomes compared to students educated in less restrictive settings. Students referred to the most restrictive separate schools had the poorest academic and behavior outcomes (Schneider, 1982).

Keeley (2006) studied 348 students in a highly restrictive setting, 121 of those students were students with disabilities, of them 37 were EBD, and found that only 33.3% of the students with disabilities returned to a less restrictive educational setting after the restrictive setting. Students verified as EBD had a 41% return rate to a less restrictive education setting. Students who did not return to a less restrictive setting either remained in their current placement until they graduated, dropped out, or aged out of the system.

**Dropping Out.** Nationally students with EBD have higher dropout rates than other students with disabilities (Kemp, 2006; Redmond & Hosp, 2008; Hess-Rice & Yen, 2010). From 1995 to 2005, students with EBD had appreciably higher school dropout rates than any other disability category (Kennelly & Monrad, 2007). Although the dropout rate for students with disabilities improved from 1995-96 to 2004-05 (45.1% to 28.3%) the 2004-05 dropout rate for students with EBD was still 48.2%. During the
2001-2002 school year the dropout rate for EBD students was 61.2% compared to the next highest category of disability, speech/language impairment, at 35.8% (Kennelly & Monrad, 2007). Sinclair and Christenson (1998) listed many reasons why students with disabilities drop out of school, among the most troubling was students who are pushed out of school through repeated suspensions and expulsions due to undesirable school behavior that lead to student feelings of school disengagement and disaffiliation. There is a growing recognition that disengagement and poor academic performance are reliable predictors of school failure and students dropping out of school (Jerald, 2006; Neild, Balfanz, & Herzog, 2007; Spencer, 2009). Neild et al. (2007) examined the records of 14,000 students in Philadelphia, PA, and found a 75% coefficient of determination between a sixth grade student failing an English or math class, having inconsistent attendance, and receiving unsatisfactory marks in behavior and dropping out of school before completing the twelfth grade. Finn (1989) proposes that unsuccessful school outcomes of students leads to reduced self-esteem, which often leads to problem behaviors in school, which in turn, leads to further unsuccessful school outcomes. This cycle of failure, if not interrupted, is one of the leading causes of students disengaging from school and dropping out. Jerald (2006) reported that 51% of students interviewed regarding dropping out of school said they dropped out because “I didn’t like school” followed by 44% who said; “I was failing.”

Students with disabilities, especially those with EBD, are at greater risk of school failures that often leads to disengagement and dropping out of school (Reschly & Christenson, 2006). Overall, students with EBD who receive placements in more restrictive school settings, such as day treatment programs, drop out of school at higher
rates than students in mainstream settings do (Kemp, 2006). Since students with EBD are most likely to receive placements in more restrictive settings (Barth et al., 2007; Gagnon & Leone, 2006; Keeley, 2006) it unfortunately follows that they would be more likely to drop out of school.

**Attendance.** Success in school is dependent on students’ consistent school attendance (Dube & Orpinas, 2009). School attendance is a determining factor related to students dropping out of school (Neild et al., 2007; Redmond & Hosp, 2008; Spencer, 2009). Research finds that as early as the first grade, students with numerous unexcused absences are predictably the most likely to leave school before graduating compared to matched students with few or no absences early in their school years (Lehr, Sinclair, & Christenson, 2004). Lehr et al. (2004) found those students who drop out of school miss twice as many days of school in fifth grade and three times as many school days in ninth grade when compared to students who did not drop out of school.

Dube and Orpinas (2009) studied 99 elementary and middle school students (ages eight to fifteen) and identified two profiles for students with poor attendance those students who missed school to avoid anxiety or fear producing social situations or evaluations and students who missed school to gain some positive tangible reward such as parental attention or reinforcing activity. Students who missed school for tangible rewards had significantly higher rates of disruptive behaviors in school. Furthermore, students with EBD have higher rates of absenteeism than their general education and special education peers (Redmond & Hosp, 2008). Moreover, Redmond and Hosp (2009) found that students with EBD had significantly higher rates of absenteeism than students with communication disorders or learning disabilities.
Purpose of the Study

The purpose of the study is to determine the impact of prolonged participation in a pro-social cognitive behavioral skills program on elementary age students, with behavior related disorders, behavior accelerative, behavior reductive, and return to regular classroom outcomes.

Research Questions

The following research questions will be used to analyze student participation in the Elementary-Grade Pro-Social Cognitive Behavioral Skills Program measuring desirable and undesirable behaviors, use of decelerating behavioral interventions, and changes in teacher comments of the students’ present levels of performance.

Overarching Pretest-Posttest Behavior Research Question #1. Will elementary age students, with behavior related disorders following one school year or less of participation in an elementary grades pro-social cognitive behavioral skills program lose, maintain, or improve their pretest beginning program nine weeks compared to posttest ending program nine weeks behavior accelerative teacher administered Fixed Interval in-class observations occurring every 15-minutes (FI-15) recorded on point sheets for desired behavior accelerative incompatible alternatives (a) on-task (b) follow directions, and (c) positive interactions outcomes following one school year or less of program participation?

Sub-Question 1a. Will there be a significant difference between students’ pretest beginning program nine weeks compared to posttest ending program nine weeks teacher administered Fixed Interval in-class observations occurring every 15-minutes (FI-15) recorded on point sheets for desired behavior accelerative incompatible alternatives
(a) on-task outcomes?

**Sub-Question 1b.** Will there be a significant difference between students’ pretest beginning program nine weeks compared to posttest ending program nine weeks teacher administered Fixed Interval in-class observations occurring every 15-minutes \((FI-15)\) recorded on point sheets for desired behavior accelerative incompatible alternatives (b) follow directions outcomes?

**Sub-Question 1c.** Will there be a significant difference between students’ pretest beginning program nine weeks compared to posttest ending program nine weeks teacher administered Fixed Interval in-class observations occurring every 15-minutes \((FI-15)\) recorded on point sheets for desired behavior accelerative incompatible alternatives (c) positive interactions outcomes?

The following research question will be used to analyze student behavior accelerative outcomes following one to two school years of participation in an elementary grades pro-social cognitive behavioral skills program.

**Overarching Pretest-Posttest Behavior Research Question #2.** Will elementary age students, with behavior related disorders following one to two school years of participation in an elementary grades pro-social cognitive behavioral skills program lose, maintain, or improve their pretest beginning program nine weeks compared to posttest ending program nine weeks behavior accelerative teacher administered Fixed Interval in-class observations occurring every 15-minutes \((FI-15)\) recorded on point sheets for desired behavior accelerative incompatible alternatives (a) on-task (b) follow directions, and (c) positive interactions outcomes following one to two school years of program participation?
Sub-Question 2a. Will there be a significant difference between students’ pretest beginning program nine weeks compared to posttest ending program nine weeks teacher administered Fixed Interval in-class observations occurring every 15-minutes (FI-15) recorded on point sheets for desired behavior accelerative incompatible alternatives (a) on-task outcomes?

Sub-Question 2b. Will there be a significant difference between students’ pretest beginning program nine weeks compared to posttest ending program nine weeks teacher administered Fixed Interval in-class observations occurring every 15-minutes (FI-15) recorded on point sheets for desired behavior accelerative incompatible alternatives (b) follow directions outcomes?

Sub-Question 2c. Will there be a significant difference between students’ pretest beginning program nine weeks compared to posttest ending program nine weeks teacher administered Fixed Interval in-class observations occurring every 15-minutes (FI-15) recorded on point sheets for desired behavior accelerative incompatible alternatives (c) positive interactions outcomes?

The following research question will be used to analyze student behavior accelerative outcomes following three or more school years of participation in an elementary grades pro-social cognitive behavioral skills program.

Overarching Pretest-Posttest Behavior Research Question #3. Will elementary age students, with behavior related disorders following three or more school years of participation in an elementary grades pro-social cognitive behavioral skills program lose, maintain, or improve their pretest beginning program nine weeks compared to posttest ending program nine weeks behavior accelerative teacher administered Fixed
Interval in-class observations occurring every 15-minutes (FI-15) recorded on point sheets for desired behavior accelerative incompatible alternatives (a) on-task (b) follow directions, and (c) positive interactions outcomes?

**Sub-Question 3a.** Will there be a significant difference between students’ pretest beginning program nine weeks compared to posttest ending program nine weeks teacher administered Fixed Interval in-class observations occurring every 15-minutes (FI-15) recorded on point sheets for desired behavior accelerative incompatible alternatives (a) on-task outcomes?

**Sub-Question 3b.** Will there be a significant difference between students’ pretest beginning program nine weeks compared to posttest ending program nine weeks teacher administered Fixed Interval in-class observations occurring every 15-minutes (FI-15) recorded on point sheets for desired behavior accelerative incompatible alternatives (b) follow directions outcomes?

**Sub-Question 3c.** Will there be a significant difference between students’ pretest beginning program nine weeks compared to posttest ending program nine weeks teacher administered Fixed Interval in-class observations occurring every 15-minutes (FI-15) recorded on point sheets for desired behavior accelerative incompatible alternatives (c) positive interactions outcomes?

The following three research questions will be used to analyze student behavior accelerative outcomes following completion of program for one school year or less, one to two school years, and three or more school years of participation in an elementary grades pro-social cognitive behavioral skills program.
Overarching Posttest-Posttest Behavior Research Question #4. Do elementary age students, with behavior related disorders who completed one or less school years, one to two school years, and three or more school years of participation in an elementary grades pro-social cognitive behavioral skills program have congruent or different posttest ending program nine weeks compared to posttest ending program nine weeks behavior accelerative teacher administered Fixed Interval in-class observations occurring every 15-minutes (FI-15) recorded on point sheets for desired behavior accelerative incompatible alternatives on task outcomes?

Overarching Posttest-Posttest Behavior Research Question #5. Do elementary age students, with behavior related disorders who completed one or less school years, one to two school years, and three or more school years of participation in an elementary grades pro-social cognitive behavioral skills program have congruent or different posttest ending program nine weeks compared to posttest ending program nine weeks behavior accelerative teacher administered Fixed Interval in-class observations occurring every 15-minutes (FI-15) recorded on point sheets for desired behavior accelerative incompatible alternatives following directions outcomes?

Overarching Posttest-Posttest Behavior Research Question #6. Do elementary age students, with behavior related disorders who completed one or less school years, one to two school years, and three or more school years of participation in an elementary grades pro-social cognitive behavioral skills program have congruent or different posttest ending program nine weeks compared to posttest ending program nine weeks behavior accelerative teacher administered Fixed Interval in-class observations occurring every 15-minutes (FI-15) recorded on point sheets for desired behavior
accelerative incompatible alternatives positive interactions outcomes?

The following research question will be used to analyze student time out behavior reductive frequency change over time following participation in an elementary grades pro-social cognitive behavioral skills program.

**Overarching Pretest-Posttest Average Time Out Frequency Change Over Time Research Question #7.** Will individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within one school year or less, within one to two school years, within more than two school years and were returned to less restrictive classroom placements have congruent or different time out behavior reductive frequency change over time?

**Assumptions**

The study had several strong features. All elementary grades pro-social cognitive behavioral skills program teachers in the research schools were included in the program. The research school district supported the elementary grades pro-social cognitive behavioral skills program with material support, teacher training, and administrative supervision. Training was provided to all elementary grades pro-social cognitive behavioral skills program teachers to ensure that the strategies necessary for implementing the pro-social curriculum were uniformly administered and data collection was standardized. Random inter-rater reliability test were completed to ensure data collections was collected appropriately. Elementary grades pro-social cognitive behavioral skills program staff were trained annually on the proper use of positive reinforcement, use of the token economy, data collection, training parents on how to
follow through with program goals at home, social skills instruction, and the proper use of time out from reinforcement techniques. Research school district support personnel also provided teachers at the research schools annually with two half-day in-service sessions on the proper use of de-escalation strategies. Teachers worked with school administrators and district personnel on a weekly basis to review program progress at each site. Quarterly team meetings were held to monitor progress of the program and gather feedback from teachers and administrators from both participating schools.

**Delimitations of the Study**

This study was delimited to the elementary grade students of two cluster site program schools in a Midwestern suburban school district who were admitted to the program between the January 2004 and August of 2012. All elementary grade students were recommended to participate in the elementary grades pro-social cognitive behavioral skills program by their Individual Education Program (IEP) teams. Study findings will be delimited to those students who participated in and completed the elementary grades pro-social cognitive behavioral skills program.

**Limitations of the Study**

This exploratory study was confined to elementary grade students \( (N = 45) \) participating in and completing the elementary grades pro-social cognitive behavioral skills program. Study participants in the first research arm \( (n = 15) \) participated in and completed the elementary grades pro-social cognitive behavioral skills program in one year or less. Study participants in the second research arm \( (n = 14) \) participated in and completed the elementary grades pro-social cognitive behavioral skills program in one to two years. Study participants in the third research arm \( (n = 16) \) participated in and
completed the elementary grades pro-social cognitive behavioral skills program in more than two years. The limited sample size may limit the utility and generalizability of the study results and findings.

**Definition of Terms**

**Autism.** According to the U.S. Department of Education (2004) Autism means a developmental disability significantly affecting verbal and nonverbal communication and social interaction, generally evident before age three, that adversely affects a child's educational performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences.

**Emotional disturbance.** Emotional disturbance means a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree that adversely affects a child's educational performance: (A) An inability to learn that cannot be explained by intellectual, sensory, or health factors. (B) An inability to build or maintain satisfactory interpersonal relationships with peers and teachers. (C) Inappropriate types of behavior or feelings under normal circumstances. (D) A general pervasive mood of unhappiness or depression. (E) A tendency to develop physical symptoms or fears associated with personal or school problems. (U.S. Department of Education, 2004).

**Behavioral Emergency.** Behavior emergency means serious, probable, imminent threat of bodily harm to self or others. A behavioral emergency situation may exist when; a student is harming self, a student is physically attacking another person, a
student is throwing dangerous objects (scissors, chair, desks, etc) at another person, a student is damaging property that could result in harm to self or others (breaking glass, electrical items that could cause a fire), or a student’s behavior is unpredictable, spontaneous and poses a clear and present danger of serious harm to the individual, others, or property, and which cannot be immediately prevented by a response less restrictive than the temporary application of a technique to contain the behavior.

**Cool-down.** Cool-down is a place where you can calm down and relax; examples of methods include deep-breathing, imagining pleasant scenes.

**Exclusion time out.** Exclusion time out is a procedure where the student is removed from the instructional setting. The student is prevented from participating in instructional activities in their classroom. Student may have access to other students or staff.

**Follow directions.** Follow directions is when the student engages in the assigned behavior or activity.

**Inclusion Time Out.** Inclusion time out is when the child remains in the instructional setting but is temporarily prevented from engaging in reinforcing activities. The student may be removed from the instructional setting to another part of the classroom. The student is instructed to continue to watch the instructional activities but cannot otherwise participate in them.

**Negative Reinforcement.** Negative reinforcement operates when the removal of some stimulus results in an increase in the future probability of a response (Mendres & Borrero, 2010).

**On Task.** On task means to remain working on a task until it is complete.
**Other Health Impairment.** Other health impairment means having limited strength, vitality, or alertness, including a heightened alertness to environmental stimuli, that results in limited alertness with respect to the educational environment, that--Is due to chronic or acute health problems such as asthma, attention deficit disorder or attention deficit hyperactivity disorder, diabetes, epilepsy, a heart condition, hemophilia, lead poisoning, leukemia, nephritis, rheumatic fever, sickle cell anemia, and Tourette syndrome; and adversely affects a child's educational performance (U.S. Department of Education, 2004).

**Physical restraint.** Physical restraint means the use of bodily, physical force to limit an individual's freedom of movement. Physical Restraint is permitted only as a last resort when other less restrictive methods of intervention have been exhausted, and when the individual’s actions pose a clear, present, and imminent physical danger to him/her or to others presents. The restraint should last only as long as necessary to resolve the actual risk of danger or harm; and the degree of force applied may not exceed what is necessary to protect the student or other persons from imminent bodily injury.

**Positive Interaction.** Positive interactions means the student is getting along with others.

**Punishment.** Punishment is a consequence, presented immediately following a behavior, which decreases the frequency of the behavior in the future (Martin & Pear, 1988).

**Replacement behaviors.** A replacement behavior is a socially acceptable behavior that services the same function as an unwanted target behavior.

**Response cost.** Response cost is the procedure of removing a specific amount of
reinforcer following a target behavior (Martin & Pear, 1988).

**Seclusion Time Out.** Seclusion time out is a procedure where the student is involuntarily confined alone in a room from which the student is physically prevented from leaving.

**Pro-Social Skills.** Pro-social skills are a complex set of behaviors that allows a person to communicate, solve problems, make decisions, manage emotions, and initiate or maintain positive social relationships with others.

**Social Competence.** Social competence represents a multidimensional construct that includes cultural, demographic, adaptive behavioral, and social skills variables (Gresham & Elliott, 1984).

**Social Skills Instruction.** Social skills instruction is teaching the student a series of individual behaviors or skills that can be used together to form the complex/compound social skills necessary for students to be successful in school.

**Specific Learning Disability.** Specific learning disability means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. Specific learning disability does not include learning problems that are primarily the result of visual, hearing, or motor disabilities, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage (U.S. Department of Education, 2004).

**Speech Language Impairment.** Speech or language impairment means a
communication disorder, such as stuttering, impaired articulation, language impairment, or a voice impairment, that adversely affects a child's educational performance (U.S. Department of Education, 2004).

**Time out from reinforcement.** Time out from reinforcement is a behavior reduction procedure in which a child is placed in a different, less-rewarding situation or setting when he or she engages in undesirable or inappropriate behaviors. Time out is not a single strategy, but rather refers to a number of related procedures designed to reduce inappropriate student behavior by removing a student from a reinforcing environment. There is a continuum of time out procedures with varying degrees of restrictiveness.

**Token Economy.** Token Economy is a system of operant conditioning used for behavior modification that involves rewarding desirable behaviors with tokens which can be exchanged for items or privileges (as food or free time) and punishing undesirable behaviors (as destruction or violence) by taking away tokens (Martin & Pear, 1988).

**Visual support.** Visual supports are any visually perceived stimuli that assist us in comprehending environmental information and demands (Jaime & Knowlton, 2007).

**Significance of the Study**

This study has the potential to contribute to research, practice, and policy. It is of significant interest to educators seeking ways to decrease the amount of time special education students are educated in a highly restrictive setting.

**Contribution to research.** There is very little research to date on the effects of time in treatment and outcomes for students with aggressive and disruptive classroom behavior. The results of this study, may inform theoretical and practical literature on the effectiveness of the practices and strategies used in this program.
Contribution to practice. Based on the outcomes of this study, the schools involved and the district may decide to set a series of checkpoints, at predetermined lengths of stay, to determine if the placement in the program is still appropriate or whether other options need to be considered.

Contribution to policy. Local level policy will be impacted by this study. If results show that students reach a point of diminishing educational/behavioral benefit from participating in the program after a certain amount of time the students’ IEP teams may need to review students’ progress frequently and change students’ placements if needed. A higher level of progress monitoring of students progress in the program may be warranted.

Organization of the Study

The literature review relevant to this study is presented in Chapter 2. This chapter reviews professional literature on best practices for elementary behavior programs, instructional strategies for teaching pro-social skills, reinforcement of desired behaviors, behavioral decelerates, and Chapter 3 describes the research design, methodology, and procedures used to gather and analyze the data of the study.
CHAPTER TWO

Review of Literature

Social Competence

Social competence is an evaluative term based on the judgment of others (e.g., teachers, peers, and parents) that an individual has performed a given social task competently (Foster & Ritchey, 1979; Lane, Wehby, Little, & Cooley, 2005). A student’s social competence determines their success in school (Cook et al., 2008; Gresham & Elliott, 1987). Social competence is the combination of a student’s ability to use social skills and adaptive behavior to interact with peers and adults in their environment in a successful manner (Gresham & Elliott, 1987; Korinek, Walther-Thomas, McLaughlin, & Williams, 1999; Meadan & Monda-Amaya, 2008). Social skills are learned, socially acceptable behaviors that allow a person to positively interact with others and be accepted by others (Epstein, Cullinan, Ryser, & Pearson, 2002; Gresham, Vance, Elliott, & Cook, 2011; Jones, Dunn, & Dohrn, 2004). Adaptive behaviors are age-appropriate, performance of daily activities based on social standards and expectations such as communication, self-care, home living, and leisure (Lee & Park, 2007). Schools have a responsibility to teach social competence to those students who need this instruction in order to be successful in school (Cook et al., 2008; Gresham, Cook, Crews, & Kern, 2004; Reddy & Richardson, 2006).

A student’s social competence directly influences his/her progress in an academic setting (Konold, Jamison, Stanton-Chapman, & Rimm-Kaufman, 2010; Ladd 1981; Ladd, Herald, & Kochel, 2006). Socially competent students are able to listen, follow directions, and participate in learning activities required for long-term classroom success.
Students who lack social competencies (not able to listen, follow directions, or successfully participate in learning activities) will fail to perform adequately in the classroom leading to school failure (Elliott, Malecki, & Demaray, 2001; Ladd, 1990). Students’ social competence deficits may be classified into two types: skill deficits--can’t do it--and performance deficits--won’t do it (Gresham & Elliott, 1987). Knowing which type of social competency deficit a student has will define the type of remediation needed.

**Skill deficits.** Skill deficits are skill acquisition deficits; the student has not yet acquired the target skill. A skill deficit can be described as the student not knowing how to perform the target skill (“I can’t do it”). If the student does not display the target skill, it is probably a skill deficit. Typically, students with skills deficits have not learned the target skill due to a lack of exposure to the skill. Treatment for students with skill deficits is to provide explicit instruction on how and when to use the target skill (Gresham & Elliott, 1987; Gresham, Sugai, & Horner, 2001; Gresham, Van, & Cook, 2006).

Another type of skill deficit is a self-control skill deficit. A self-control skill deficit is when a student who has not learned the target skill because of some type of emotional arousal response that has prevented the acquisition of the skill. The main difference between skill deficit and self-control skill deficit is the reason why the student has not acquired the target skill. The student with a skill deficit has not learned the target skill due to a lack of exposure whereas the student with the self-control skill deficit has not learned the skill due to emotional arousal that prevented him/her from remaining in settings where they could have learned the target skill. Emotional arousal includes, but is
not limited to, anxiety, fear, or anger. Students with anxiety or anger/aggression issues may not have appropriate coping skills to allow them to acquire more complex social competency skills.

Students with anxiety issues often avoid interactions with others preventing the acquisition of social skills (Pelco & Reed-Victor, 2007). Avoidance or escape from social situation often reduces anxiety thereby negatively reinforcing future social withdrawal and compounding the acquisition of social competency skills. Students with anger or aggression issues are also at-risk for developing self-control skills deficits. In school peers, most often socially reject students who display repeated anger or aggression (Gresham, 1985; Huesmann et al., 2009; Patterson et al., 1989). Negative reinforcement occurs for a peer who rejects or avoids a student with anger/aggression issues because he/she avoids an unpleasant interaction. This peer rejection can also act as an extinction schedule for the angry/aggressive student to further decreasing interaction with other thereby preventing the acquisition of the target skill. The treatment for students with self-control skill deficits is to explicitly teach the target skill to the student and then provide sufficient opportunities to practice and positive reinforce the use of the target skill. The teacher will also have to limit negative reinforcement associated with actively or passively permitting the student to escape from using the skill. This may involve using positive reinforcement with the student’s peers to increase the social interaction with the target student.

**Performance deficits.** Performance deficits are described as when the student knows how to perform the target skill but does not perform it at the desired level (“I won’t do it”). Students with performance deficits know how to perform the target skill
but do not do it at an acceptable level due to a lack of opportunity or lack of motivation. Students with performance deficits may be able to perform the skill in one environment but not in other environments (lack of generalization of the skill). Students with performance deficits may also be experiencing competing schedules of reinforcement where the interfering behavior has a richer reinforcement schedule than the target skill. The treatment for performance deficits is to provide multiple opportunities to practice the target skill with a clearly defined reinforcement schedule for the target and interfering behaviors.

A subset of performance deficits is self-control performance deficits. Students with self-control performance deficits have the target skill in their repertoire but do not use the skill in certain situations due to an emotional arousal response related to antecedent and/or consequence conditions. An example of this is the impulsive student who knows how to use the target skill but may impulsively react inappropriately to an antecedent and/or consequence in an interaction with others rather than use the target skill. The treatment for self-control performance deficits is to provide multiple opportunities to practice the target skill with a clearly defined reinforcement schedule for the target and interfering behaviors.

**Social Skills**

Social skills are different from social competency. Social competency is an evaluative term based on how a person performs a social task, whereas social skills are skills used to perform the social task (Cook et al., 2008). Behaviors that are taught, learned, and performed, are social skills whereas social competence represents judgments about the use of those behaviors within and across situations over time (Gresham, 2001).
There is a multitude of definitions for social skills in the literature. Merrell and Wolfe (1998) indicated that there are as many as fifteen different definitions for social skills in the literature. Social skills definitions can be categorized into three broad philosophical categories; social acceptance, behavioral, and social competency-correlates (Gresham, 1997). Each of these categories emphasizes a particular theoretical underpinning used to define social skills.

Definitions that emphasize social acceptance refer to positive social behaviors that contribute to the initiation and maintenance of positive social interactions with others that in the end leads to acceptance (Hughes & Sullivan, 1988; Ladd, 1981; La Greca, 1993). In these definitions, children who are accepted by their peers and who are able to maintain friendships are considered socially skilled which leads to social acceptance. These definitions are philosophically in line with social skills interventions that have social acceptance as the over-arching goal for teaching/learning social skills thereby increasing the target student’s social acceptance by their peer group.

Social skills definitions that emphasize behavioral principles view social skills as overt goal-directed verbal and non-verbal behaviors that allow an individual to interact effectively with others in his or her environment (Foster & Ritchey, 1979; Sheridan, Maughan, & Hungelmann, 1999). These definitions focus on increasing desired behaviors while decreasing undesired behavior. These definitions are philosophically in line with social skills interventions that emphasize the use of behavioral principles to increase the student’s use of target behaviors that will improve social competencies.

Social skills definitions that emphasize social competency-correlates focus on social behaviors that correlate with criterion for social competency such as turn taking,
greeting others, and asking for or giving information (Gresham, 1997; Gresham 2001). These definitions propose that social skills are behaviors an individual exhibits to perform competently on a social task. These definitions are philosophically in line with social skills interventions that measure success by increasing the use of behavior that are correlated to the practitioner’s expectations of social competency.

The lack of a universally accept definition of social skills has subsequently lead to disagreement on what social skills a person should know to be socially competent and how to teach these skills (Gresham, 1997; Gresham et al., 2004; Maag, 2005). The way social skills are conceptualized by a person teaching these skills can dramatically influence the implementation of a social skills training program (Maag, 1992). For example, interventions based on a behavioral definition will likely include a focus on reinforcing desired behaviors while interventions based on social competency-correlates may focus more on coaching and modeling.

Teacher and parent expectations of social skills in children are well documented (Lane, Pierson, & Givner, 2003; Lane, Stanton-Chapman, Jamison, & Phillips, 2007; Lane, Wehby, & Cooley, 2006). Lane et al. (2007) surveyed 35 teachers and 124 parents of students with ages ranging from two to six years old on the importance of social skills as they relate to school success. The idea being that having appropriate social skills will lead to improved educational outcomes. The authors found that parents rated follows rules, follow instructions, speaks in an appropriate tone of voice, controls temper in conflict situations, and attends to your instructions as the most important skills children should have in the home setting. Teachers rate the following skills as the most important; follows directions, controls temper in conflict situations with adults and peers, waits turn
in games or other activities, and cooperates with peers without prompting. While there is some overlap in expectation, it should be noted that the differences in expectations offer the potential for areas of conflict between the teachers and parents.

Lane et al. (2003) surveyed 366 teachers from kindergarten to twelfth grade regarding the social skills they thought students should use in school to be successful. The teachers in the study included 126 elementary teacher, 89 middle school teachers, and 151 high school teachers. Teachers at all levels rated following directions, attends to instruction, controls temper in conflict with peers and teachers, and responds appropriately to physical aggression from peers as essential for success in school.

Lane et al. (2006) surveyed 717 teachers from kindergarten to twelfth grades regarding what type of social skills they thought students needed to be successful in school. The teachers rated social skills used for cooperation and self-control, as the most important while skills related to assertion were less important.

**Social Skills Training Programs**

Explicitly teaching social skills is one effective way to improve a student’s social competency (Gresham et al., 2011; Lane et al., 2005; Maag, 1992). Social skills training (SST) programs are programs that are designed to teach specific social skills in order to improve a student’s social competency (Cook et al., 2008; Lane, et al., 2006; Lane et al., 2005; Magg, 2005). Social skills training programs have successfully treated students with EBD for over 30 years (Spence, 2003). Social skills programs can be used in a variety of settings including general education classrooms (Elias & Haynes, 2008; Gresham et al., 2006), separate special education classrooms (Cook et al., 2008; Lane et al., 2003; Miller, Lane, & Wehby, 2005), and separate special education schools (Cook et
Gresham and Cook (2006) state that several meta-analyses of SST programs show that the typical social skills intervention averages 2.5-3.0 hours per week for 10-12 weeks for a total of approximately 30 hours. Gresham and Cook (2006) also state that this may be insufficient time to remediate long-standing social skills deficits. These authors suggest 60 hours of instruction is more appropriate to show long-term social skills gains.

The three tenets of social skill instruction are that all behaviors are learned, social skills instruction should be customized to meet the individual needs of the student, and social skills instruction cannot be deemed successful until the skills are generalized to new settings (Schoenfeld, Rutherford, Gable, & Rock, 2008). Social skills training programs typically have the following common objectives; the acquisition of the skills being taught, improving skill performance, decreasing or extinguishing competing undesirable behaviors, and generalizing the skill use to multiple environments (Cook et al., 2008; Gresham et al., 2001; Gumpel, 2007; Lane et al., 2005).

Successful SST programs often include the following components; identification of students who will participate, determining specific skills deficits of identified students, organization of intervention groups with similar needs, training of intervention staff, implementation of interventions, and monitoring student progress (Guglielmo & Tryon, 2001; Kamps, Kravits, Rauch, Kamps, & Chung, 2000; Lane et al., 2005).

A variety of methods may be used to identify students who will participate in the SST program. Common methods include completing formal assessments of each student (Kamps et al., 2000; Merrell, 2002), teacher/parent recommendations/interviews (Lane, 1999; Merrell, 2002; Preece & Mellor, 2009), and inclusion as a member of an identified
intervention program such as a placement in a behavior disorder program (Cook et al., 2008).

The use of formal social skills assessments may be the most unbiased method to identify students who need social skills instruction because these assessments are designed to give objective information on how the student performs related to a norm group (Merrell, 2002). Students who score poorly on a formal assessment do not display the targeted skills and may be in need of a social skills program to remediate the deficit. Merrell (2002) identified several commercially available instruments for assessing a student’s social skill proficiency including the Social Skills Improvement System Rating Scales (SSIS) developed by Gresham and Elliott (2008), the Peer Social Behavior Code (PSBC) developed by Walker and Severson (1990), and the School Social Behavior Scales by Merrell (2002). The benefit of using a norm-referenced assessment to determine a student’s skill deficit is that the information is valid and objective. The drawback is that the assessment may be time consuming to complete.

Teacher/parent recommendations may not be as objective as formal assessments but they do provide the interventionist with valuable information on how the student performs in different environments. Developing an interview process for collecting teacher/parent recommendations can help standardize the criteria that the child is measured against to determine if he/she would benefit from participation in a social skills program thereby limiting some of the inherent bias in the process (Merrell, 2002). Using trained personnel to interview the teacher/parent of the student and/or observe the child in multiple settings and keep track of the skills the child can and cannot do in various settings (Merrell, 2002) also decreases the bias. Another benefit of this method is that the
interviewer/observer gets good first-hand information on the student’s social skills in multiple settings and information can be collected on antecedents and consequences that may be maintaining competing behaviors. The drawbacks to this method are that the social skills that are not adequately defined lead to poor validity of information collected, and if the interviewer/observer is not highly trained, the information collected may not be objective and this method is also very time consuming.

The inclusion of students based on participation in an identified intervention program may be the least objective method of selection unless the screening process for participation in the program includes an examination of the student’s social skills performance. Students who are placed in a social skills program based on their educational placement often have to be assessed further to determine if the deficit is an acquisition or performance deficit.

Once students’ skill deficits are identified, they may be appropriately placed in intervention groups. Typically, these intervention groups include students with similar skills deficits (Lane et al., 2005; Lane, Wehby, & Barton-Arwood, 2005) or in groups with similar treatment goals (Webster-Stratton, Reid, & Hammond, 2001). The procedure for grouping students should match the goals of the intervention. If the goal is to provide targeted instruction based on the students' deficits than a group based on similar deficits would be appropriate. If the goal is to provide a general instruction on a wide range of social skills, then using groups with similar treatment outcomes is appropriate. Treatment groups should also include normally developing peers to serve as models (Gresham 1998, 2001). Gresham (2001) recommends involving one or two normally developing peers to act as models or coaches for every two to three targeted
students.

The social skills training program can be delivered to students by a wide variety of people including university students (Lane, Pierson, & Givner, 2003), teachers (Gonzalez-Lopez & Kamps, 1997), school counselors (Maag, 1994), school psychologist (Choi & Heckenlaible-Gotto, 1998; Gresham et al., 2006) and para-professionals (Miller et al., 2005) if given proper training. The interventionist should be trained in the social skills program prior to working with the target students and participate in ongoing training throughout the intervention period in order to ensure treatment fidelity (Lane et al., 2005). Unfortunately most teachers are not provided training as part of their pre-service preparation or as part of their in-service training (Dobbins, Higgins, Pierce, Tandy, & Tincani, 2010).

There are several commercially available social skills training programs that are used in schools. These programs are typically very prescriptive and require minimal training prior to implementation.

**Skillstreaming.** The Skillstreaming social skills program was originally developed by Dr. Arnold P. Goldstein and his colleagues during the 1980’s and 1990’s (Goldstein & Glick, 1994). This intervention is based on Bandura's (1986) social learning theory and uses many empirically based strategies for improving prosocial behavior (e.g. modeling, coaching, behavioral rehearsal, and reinforcement). It has versions for early childhood, elementary age, and adolescent age children. The program is designed to teach prosocial skills using planned and systematic instruction (Cumming et al., 2008). The Skillstreaming process focuses on the four direct instruction principles of learning including: modeling, role-playing, feedback, and transfer (McGinnis, 2003).
The Skillstreaming program has fifty separate social skills in six different areas: Beginning Social Skills, Advanced Social Skills, Skills for Dealing with Feelings, Skill Alternatives to Aggression, Skills for Dealing with Stress, and Planning Skills (Williams & Reisberg, 2003). The program provides the intervention leader with scripts for teaching each of the social skills, assessment protocols for determining which skills students need most, and homework assignments for students (McGinnis & Goldstein, 2003).

The Skillstreaming program has been successfully used to teach prosocial skills to a variety of youth including students with behavior disorders (Fox & Boulton, 2005; Sasso, Melloy, & Kavale, 1990), students with mental illnesses (Prestia, 2003; Reed, 1994), students with autism (Brunner & Seung, 2009) and with typically developing students (Farmer-Dougan, Viechtbauer, & French, 1999). The Skillstreaming program has also been successfully pared with aggression replacement training to decrease children and adolescents aggressive behaviors (Calame & Parker, 2003; Goldstein, & Glick, 1994). Amendola and Oliver (2010) report that Goldstein and Glick used the Skillstreaming model to develop the Aggression Replacement Training (ART) program (2007). The Prepare program (Goldstein, 1988; Goldstein, 1999) is also heavily based on the Skillstreaming program. The Prepare program has a series of ten interventions grouped into three areas: reducing aggression, reducing stress, and reducing prejudice. The program is designed for use with middle school and high school students but can also be adapted for use with younger students.

**The EQUIP Program.** The EQUIP program is designed to teach youngsters exhibiting severe antisocial behavior to help each other in a group and in this way they
can help themselves (Gibbs, Potter, & Goldstein, 1995). The EQUIP program is a multifunctional program with the following parts: learning to make social decisions, learning to control anger and aggression, and learning social skills (Knorth, Klomp, Van Den Bergh, & Noom, 2007). Nas, Brugman, and Koops (2005) report that the social skills training, anger management training, and moral education of the EQUIP training program is based on Goldstein et al., (1986) Aggression Replacement Training. EQUIP also borrows heavily from Skillstreaming (McGinnis & Goldstein, 1984) for its social skills training component.

EQUIP for Educators (DiBiase, Gibbs, Potter & Spring, 2007) is an adaptation of the EQUIP program (Gibbs, Potter, & Goldstein, 1995; Potter, Gibbs, & Goldstein, 2001). This program is ten-week treatment-and-academic-learning prevention program for behaviorally at-risk elementary and middle school students for educators to use in a group setting (DiBiase et al., 2007). There is little research on the effectiveness of EQUIP for Educators but there is research to show that the original EQUIP program is effective with adolescents.

Leeman, Gibbs, and Fuller (1993) combined the use of Positive Peer Culture (PPC) and EQUIP to treat 57 adolescent boys housed in a medium-security youth correctional facility. They found that the boys who received both the PPC and EQUIP treatment had significantly improvements in conduct while at the facility and lower recidivism rates for 12 months after leaving the program. Nas et al. (2005) also used the EQUIP program with PPC, results showed that the EQUIP group had lower cognitive distortion scores on covert behavior, self-centeredness, blaming others, minimizing/mislabeling, stealing, and lying than did the comparison group. Van der
Velden, Brugman, Boom, and Koops (2010), as cited in DiBiase, Gibbs, and Potter (2011) found that students in the experimental group reported a significant reduction of antisocial behavior compared with students in the control group.

Pro-Social Skills Programs in General Education Classrooms

Korinek and Popp (1997) believe that the key to promoting desired social behaviors is to teach social skills in the general education setting. Teaching social skills in general education classrooms has become more common due to the introduction of Response to Intervention (Sayeski & Brown, 2011) and Positive Behavioral Intervention and Support (Marchant & Womack, 2010). Both of these behavioral support programs are compatible with social skills instruction in the general education classroom (Dutton & Tillery, 2010). Sugai and Lewis (1996) recommend teaching social skills in the general education classroom should be offered in the same manner as academic skills by using effective instructional strategies. Teachers do not need specialized training to teach social skills in the general education classroom, they simply need to use good instructional practices. As with teaching math and reading, social skills instruction cannot be taught for a short period of time and not reviewed (Maag, 2006). If the social skills are not reviewed and reinforced, they will not be used.

The success of the Response to Intervention (RtI) model in preventing learning disabilities has led school districts to pursue the same reasoning for responding to social behavior problems in order to facilitate timely delivery of appropriate behavioral support to students (Hawken, Vincent, & Schumann, 2008). The RtI model is a tiered intervention model where the first tier interventions are universal interventions delivered school or district wide. The second tier targets selected students with standard
interventions, and the third tier provides intensive, individualized interventions to high-risk students (Sugai, & Horner, 2002). In the RtI lexicon social skills instruction is described as a tier 1 or tier 2 interventions (Dutton Tillery et al., 2010; Sayeski, & Brown, 2011).

Cheney, Flower, and Templeton (2008) found that 67% of the 127 students who received RtI interventions, which included social skills instruction, in the general education classroom, had positive growth in those areas. McConaughy, Kay, and Fitzgerald (1998) studied 36 elementary students who participated in social skills instruction in the general education setting. These students participated in social skills instruction twice a week in 20 minute-sessions for eight months. All of the students in the study showed significant improvement in on task behavior and decreased undesirable school behaviors.

January, Casey, and Paulson (2011) completed a meta-analysis of 28 peer-reviewed studies on classroom-wide interventions to build social skills published between 1981 and 2007. These authors found that the overall effect of these studies showed positive but small growth in the use of social skills in the general education setting. They also concluded that class-wide social skills programs are most effective with early elementary students.

Kamps, Tankersley, and Ellis (2000) did a 2-year follow up study to look at the outcomes of 31 preschoolers who participated in a general education preschool program and received social skills instruction for 30 minutes three days per week for three months. The authors found that all of the students had improved behavior and social interactions immediately following the intervention and that these gains were evident two years later.
This study suggests that there is long-term benefit to having young children in the general education setting participate in social skills instruction.

**Pro-Social Skills Programs in Special Education Classrooms**

Students in special education programs frequently receive social skills instruction in a separate classroom (Cook et al., 2008; Lane et al., 2003; Miller et al., 2005). Students who display more severe deficits in academic, behavior, and/or social domains are often placed in more restrictive settings (Lane, Wehby, Little, & Cooley, 2005). Students with EBD who require more intense and frequent social skills instruction often receive this instruction outside the general education setting (Cook et al, 2008; Gresham & Cook 2006). The separate classroom setting can be an appropriate setting for providing social skills instruction.

Lane et al. (2003) studied seven elementary students participating in social skills instructions twice a week for 30 minutes for ten weeks. Five of the seven students made significant improvement in their ability to interact appropriately with others after these sessions while other students made growth, but not to the level of significance.

Miller et al. (2005) studied seven elementary students who participated 12 hours of social skills instruction in a self-contained classroom. The majority of these students showed behavioral improvement. The authors concluded that results might have been better if the training was delivered for a longer period of time and without interruption due to breaks in the school calendar.

Ya-yu, Loe, & Cartledge (2002) studied five elementary students who participated in social skills for three 30-minute sessions a week for 15 weeks in a separate classroom setting. These students showed a mean decrease in their undesirable school behavior
with a corresponding increase in their appropriate interactions with others.

**Pro-Social Skills Programs in Separate Special Education Schools**

Students with severe social/emotional disorders may not respond to interventions in general or special education settings in their neighborhood schools and as a result are placed in more restrictive settings such as separate special education schools (Lane, Wehby, Little, & Cooley, 2005). Students in separate special education schools usually receive some type of social skills instruction (Cook et al., 2008; Hill & Coufal, 2005; Lane, Wehby, Little, & Cooley, 2005).

Lane, et al., (2005) studied 72 students in restrictive settings—43 students in a self-contained special education school and 27 in a self-contained special education classroom—that participated in social skills training as part of their program. The authors found that all of the students showed improvement in the use of social skills and improved school and classroom behavior. The outcomes for students in the separate special education school were significantly similar to students taught social skills in a self-contained special education classroom in a regular school. Both sets of students made similar progress toward their acquisition of social skills. This study would suggest that teaching social skills to students in a separate special education school is as effective as teaching them in a self-contained special education classroom in a regular school.

Hill and Coufal (2005) studied 23 students with EBD in a separate school setting who received 50 minutes of social skills instruction daily for less than two school years, two to three school years, and more than three school years. The authors found that the majority of the students showed growth in their ability to use social skills at school and were more optimistic about their future after participating in the program. However,
students who participated in the social skills program over a longer period of time had significantly more disruptive behaviors resulting in suspension of their plans for unsupervised transition back to less restrictive public school special education programs.

One of the major concerns of teaching social skills in a separate school is the issue of generalization of skill use to new environments (Lane et al., 2003; Miller et al., 2005). Generalization is improved if the students are encouraged to practice the skills in several settings with a wide variety of people (Miller et al., 2005). Ya-yu et al. (2002) say that it is critical to teach and reinforce the social skills incidentally throughout the school day to promote generalization and maintenance of the skills.

**Replacement Behavior Training**

Replacement behaviors are behaviors that are the functionally equivalent to an undesirable behavior a student may be displaying and are taught to the student in an effort to replace the problem behavior with a more desirable one (Lane, Barton-Arwood, Spencer, & Kalberg, 2007; Spence, 2003). Maag (2005) suggested that replacement behavior training might resolve some of the criticisms of social skills training, such as poor generalization and maintenance, and modest effect sizes.

When developing a behavior intervention plan to address a student’s problem behaviors it is helpful to complete a functional behavior assessment in order to determine the function of the problem behavior and identify appropriate replacement behaviors to teach the student (Gresham & Cook, 2006; Maag, 2005). Functional behavior assessment (FBA) refers to the range of strategies including interviews, observations, rating scales, and experimental analyses that are used to determine the reason why problem behaviors occur (Horner, 1994). The Center for Effective Collaboration and Practice (1997)
suggest that the FBA include a description of the problem behavior, identification of any skills deficits that may be maintaining the behavior, examine the antecedents, and consequences of the problem behavior, the function the behavior serves (to get something, to avoid something, to control, etc.) and to identify potential replacement behaviors the student could use to serve the same function of the problem behavior.

Replacement Behavior Training often uses differential reinforcement procedures to teach and reinforce the student’s use of the replacement behavior (Maag, 2005; Maag & Katsiyannis, 2006). Differential reinforcement of alternate behaviors (DRA) and Differential reinforcement of incompatible (DRI) behaviors are procedures that can be used to reinforce the use of a replacement behavior while decreasing the use of a problem behavior.

**Reward Systems—Behavior Accelerative**

Most educators have a commonsense notation of rewards, but few of them are aware of just how frequently students and teachers are influenced by positive reinforcement during a school day. In educational circles the terms positive reinforcement, reinforcement, and rewards are often used interchangeably. Reinforcement is an action or event that follows the display of a behavior that increases the likelihood of that behavior occurring again under similar circumstances (Martin & Pear, 1988). Since reinforcement occurs after the behavior, it is a consequence; as opposed to an antecedent, which comes before the behavior (Martin & Pear, 1988; Shippen, Simpson, & Crites, 2003). Reinforcement may be used in school-wide behavior programs (Bradshaw et al., 2008; Sugai, Sprague, Horner, & Walker, 2000), with small groups of students with similar needs (Kodak, Miltenberger, & Romaniuk, 2003; Swain
& McLaughlin, 1998) or in individualized programs of a single student (Martin & Pear, 1988). Reinforcement works equally well on increasing the frequency of undesirable behaviors as it does at increasing desirable behaviors. A rule of thumb is that if a behavior is increasing, there is a planned or unplanned schedule of reinforcement at work.

There are two classifications of reinforcers, primary reinforcers and conditioned reinforcers (Johns, 2005; Martin & Pear, 1988). Primary reinforcers are biologically determined or life perpetuating, such as food, water, clothing, and shelter. Primary reinforcers are not used in school because these reinforcers are necessary for life, are a human right, and therefore must not serve as a method to increase the production of a target behavior.

Primary reinforcers are stimuli that are naturally reinforcing while the other types of reinforcers must be learned or conditioned. Conditioned reinforcers are stimuli that are not naturally reinforcing but acquire reinforcing power through association with other reinforcers. Money, for example, is a conditioned reinforcer for many people. Money as an object has little reinforcing power but it can be exchanged for primary reinforcers, once this association is conditioned (learned) then money can be used as a reinforcer.

There are three types of conditioned reinforcers; tangible reinforcers, social reinforcers, and token reinforcers. Tangible reinforcers are conditioned reinforcers such as trinkets, toys, or edibles. Tangible reinforcers can be very powerful in the short term but often lose their effectiveness when the novelty wears off. Tangible reinforcers can also be expensive and difficult to inventory. A criticism of the use of tangible reinforcement is that it does not help the subject develop intrinsic motivation.
Social reinforcers are conditioned reinforcers such as attention or praise. Social reinforcers are the least expensive form of reinforcement. The use of social reinforcers also helps students develop intrinsic motivation (Johns, 2005). Social reinforcers are frequently used in school because they are effective and easy to manage (Fullerton, Conroy, & Correa, 2009). Social reinforcement such as verbal praise typically has to be administered at a rate of five praising comments to each neutral or critical comment (Cook & Browning-Wright, 2009; Ryan, Sanders, Katsiyannis, & Yell, 2007).

Token reinforcers are tangible conditioned reinforcers that can be accumulated and exchanged for another reinforcer. Money is an example of a token reinforcer. Programs that use token reinforcers are known as a token system or a token economy. The tokens can be just about anything that can be accumulated. Common tokens included chips, pieces of colored paper, and points.

Reinforcement based behavior intervention, as opposed to punishment-based interventions, are considered best practice for obtaining behavioral change with children with disabilities (Gongola & Daddario, 2010; Scott, Anderson, & Spaulding, 2008). The development of the behavior intervention plan (BIP) starts by defining the desirable target behavior naturally occurring in the student’s behavior repertoire that the teacher wants the student to increase. Typically, this is done as part of a functional behavior assessment.

A functional behavior assessment (FBA) is a procedure that identifies and operationally defines the target behavior; examines the frequency, intensity, and latency of the target behavior; identifies the antecedences and consequences of the target behavior; and develops a hypothesis about the function of the behavior (Lane et al., 2007;
Shippen et al., 2003). An FBA may be completed by individuals or a team--teachers, psychologists, therapists--who have been trained in applied behavior analysis procedures (Blood & Neel, 2007).

Once the target behavior is operationally defined and the topography of the behavior has been determine, the teacher or team may select the type of reinforcer to be used and the schedule in which the reinforcer will be presented. When selecting a reinforcer the following factors should be considered; the reinforcer should be presented as closely to the displaying of the behavior as possible, the reinforcer should be readily available and should be able to be used repeatedly without rapid satiation, and the reinforcer should take a short time to consume (Martin & Pear, 1988). The type of reinforcer is often determined through observations of the student to see what stimuli are currently reinforcing their behavior. Educators using the FBA process often discover an appropriate reinforcer that can be used to change the problem behavior (Lane et al., 2007; Shippen et al., 2003). Teachers should use the least intrusive form of reinforcer that produces behavioral change. Social reinforcers tend to be the least intrusive but tangible or token reinforcers may need to be used to teach new behaviors.

Schedules of reinforcement are another important consideration in developing a BIP. A schedule of reinforcement is a rule specifying which occurrence of a target behavior, if any, will be reinforced. The most common schedules of reinforcement are known as continuous, intermittent, and extinction. Continuous reinforcement is a schedule of reinforcement where each occurrence of the target behavior is reinforced. Continuous reinforcement schedules are rarely used in schools because they are very time consuming and labor intensive. It is very difficult for school personnel to teach, manage
a classroom, and continuously reinforce a student every time he/she displays a target behavior.

Intermittent reinforcement is a schedule of reinforcement where some of the occurrences of the target behavior are reinforced and others are not reinforced. Intermittent reinforcement is the most common form of reinforcement schedule used in a school setting because it is the most naturally occurring schedule of reinforcement and the most powerful schedule of reinforcement for maintaining behaviors (Martin & Pear, 1988).

Extinction is a schedule of reinforcement where no occurrence of the target behavior is reinforced. Another name for extinction is planned ignoring. An extinction schedule of reinforcement is difficult to manage because school personnel have a hard time ignoring undesirable behavior in school and may inadvertently reinforce the target behavior.

Intermittent reinforcement schedules are designed around the ratio of behavior displayed or by intervals of time. Schedules that are designed using ratios include fixed ratio (FR) and variable ratio (VR). On a fixed ratio schedule, reinforcement occurs each time a set number of target behaviors occur. If the student must display the target behavior 10 times to receive the reinforcer that schedule is a Fixed Ratio-10 (FR-10); if fifteen responses are required, it is called a FR-15. A fixed ratio schedule of reinforcement has been shown to improve students with disabilities engagement in desirable classroom behaviors (Higgins & McLaughlin, 2001).

A variable ratio (VR) schedule of reinforcement is similar to an FR schedule of reinforcement except that the number of responses required to receive the reinforcement
is unpredictable and varies around a mean value. In a variable ratio schedule of reinforcement a child may receive the reinforcement after the 8th, 12th, 6th, 15th, and 9th, response of the target behavior. The mean of these responses is ten, so the schedule would be called a VR-10.

Variable ratio schedules of reinforcement often occur naturally. Sales people who work on commission and average making one sale in every 10 interactions (VR-10) with customers will often have two or three sales in a row, and then not make a sale for another 20 customers. The power of this schedule is that every response has the opportunity for reinforcement, but the subject does not know when the reinforcement will occur, so they keep engaging in the behavior. Anyone who has encountered a sales person working on commission knows such individuals tend to be very persistent in working for the variable ratio reinforcement.

Sometimes it is not practical or possible to count the frequency of a target behavior in a classroom. In these cases, it may be beneficial to use a reinforcement schedule based on time intervals. Interval schedules of reinforcement reinforce the first responses of the target behavior after a set amount of time (Martin & Pear, 1988). Interval schedules of reinforcement can be managed with either a fixed interval (FI) or a variable interval (VI).

In fixed interval schedule of reinforcement, the first incident of the target behavior after a fixed period of time is reinforced. If the fixed period-of-time is five minutes, the schedule would be called a FI-5. Fixed interval schedules of reinforcement have been shown to improve students with disabilities display of desirable school behaviors (Amato-Zech, Hoff, & Doepke, 2006; Stahr, Cushing, Lane, & Fox 2006).
When establishing a new target behavior the fixed interval use must be brief enough to engage the student in displaying the behavior at the rate desired, but must be increased as the behavior becomes established to avoid reinforcement saturation (Martin & Pear, 1988).

Amato-Zech et al. (2006) used a fixed interval reinforcement schedule to increase three students on-task behavior in school. The students, all eleven years old, were given social reinforcement on a one minute fixed interval (FI-1) for the first session and then a 3 minute fixed interval (FI-3) for the next 14 sessions. All of the students’ on-task behaviors increased during the sessions. The reinforcement was discontinued and the on-task behavior decreased slightly but was still higher than the baseline sessions. When the reinforcement schedule was reinstated the on task behavior returned to the rates measured in the first part of the experiment.

Another schedule of interval reinforcement is variable interval (VI). A variable interval schedule of reinforcement is similar to FI except that the time that must elapse before reinforcement becomes available again is unpredictable instead of being fixed. Similar to a VR the VI schedule is powerful because the student is not able to predict when the reinforcement will occur so they continue to display the target behavior in hopes that the next response will be reinforced. A VI schedule has been shown to increase desirable classroom behaviors for students with disabilities (DiGennaro, Martens, & McIntyre, 2005; Martens, Lochner, & Kelly, 1992).

Martens et al. (1992) used a variable interval reinforcement schedule with two fourth-grade students in a general education class to increase their academic engagement. The author trained graduate students to provided verbal praise to students on a variable
rate (VI 2-minute schedule) when the students were on task. The authors then extended the ratio to a VI 5-minute schedule. Both participants significantly increased their engagement in the class. Students’ engagement was higher during the 2 VI-minute schedule when compared to the VI 5-minute schedule. The authors then used a similar procedure but instead of using a VI 2-minute schedule followed by a VI 5-minute schedule they alternated between at VI 2 and VI 5-minute schedules. Students’ engagement during this experiment continued to be significantly higher than the baseline period.

Differential reinforcement (DR) is a reinforcement procedure that is designed to reduce undesirable behavior by reinforcing either a desired behavior or the absence of an undesirable behavior (Gongola & Daddario, 2010; Martin & Pear, 1988). There several types of differential reinforcement including Differential Reinforcement of Alternative behaviors (DRA), Differential Reinforcement of Incompatible behaviors (DRI), and Differential Reinforcement of Other behaviors (DRO). All of these procedures involve reinforcing certain behaviors while extinguishing (ignoring) other behaviors (Martin & Pear, 1988).

Differential Reinforcement of Incompatible behaviors (DRI) is a procedure that places an undesirable behavior on extinction while an incompatible behavior is reinforced (Vollmer & Roane, 1999). In a DRI the behavior being reinforced must be incompatible, that is, it cannot occur at the same time as the target behavior. An incompatible behavior for out of seat would be the student remains in seat unless he/she has permission to be out of seat. In a DRI, both the undesired and desired behavior must be truly incompatible, well defined, and understood by both the student and school personnel.
Wheatley et al. (2009) used a DRI procedure with 200 fifth grade students who received praise notes that were sent home to parents when the student engaged in appropriate lunchroom behavior resulting in a 65% decrease in inappropriate lunchroom behavior.

Differential Reinforcement of Other behaviors (DRO) is different from DRI. In a DRI, the student is reinforced for engaging in behaviors that are incompatible with the problem behavior. In a DRO, the student is reinforced for not displaying the problem behavior for a specified period of time (Gongola & Daddario, 2010). The DRO procedure is often used in conjunction with an extinction schedule of reinforcement for the problem behavior (Shumate & Wills, 2010; Wilder, Chen, Atwell, Pritchard, & Weinstein, 2006). The DRO procedure is also referred to as differential reinforcement of zero rate behaviors (Martin & Pear, 1988).

Shumate and Wills (2010) used a DRO procedure to decrease the disruptive behavior of three students in a special education classroom. The teacher used attention as the reinforcer. The teacher provided the students positive attention at least once each minute, during the nine, five-minute treatment sessions, when they did not engage in disruptive or off task behavior. Each of the students’ off-task and disruptive behaviors decreased significantly as a result of this procedure.

Wilder et al. (2006) used a DRO procedure to decrease the frequency of tantrums with two pre-school students. The students had a history of tantrum behaviors when transitioning from one activity to another. Students were offered a preferred activity if they would transition without displaying tantrums behaviors. After three treatment sessions, both students improved significantly in their ability to transition without having
LeGray, Dufrene, Sterling-Turner, Olmi, and Bellone (2010) compared DRO and Differential Reinforcement of Alternate (DRA) behavioral procedures to determine which was most effective. The authors found that both procedures were effective at decreasing children’s problem behaviors but the DRA procedure produced greater reductions in the problem behaviors. This was a small three-student study suggesting that using a DRA in school may be effective because of the explicit programming of an alternative replacement behavior instead of reinforcing all other behaviors that are not the problem behavior.

**Token Economies**

Token Economy is a system of operant conditioning used for behavior modification that involves rewarding desirable behaviors with tokens that can be exchanged for items or privileges such as food or free time and punishing undesirable behaviors such as destruction or violence by taking away tokens (Martin & Pear, 1988). The benefits of using a token economy in school is that the token can be given immediately after the desired behavior occurs and can be cashed in at a later time for a backup reinforcer, this allows the teacher to provide reinforcement without having to stop instruction (Cook & Browning-Wright, 2009; Martin & Pear, 1988). Token economies may be used with a wide variety of student populations including students with behavior disorders (Swain & McLaughlin, 1998; Truchlicka, McLaughlin, & Swain, 1998), students with learning disabilities (Higgins & McLaughlin, 2001), students with autism (Tarbox, Ghezzi, & Wilson, 2006), normally developing students (Smith & Misra, 1992), preschool students (Filcheck, McNeil, Greco, & Bernard, 2004), elementary students
(Higgins & McLaughlin, 2001) middle school students (Swain & McLaughlin, 1998; Truchlicka et al., 1998), high school students (Brooks, 1975), and college undergraduates (Boniecki, & Moore, 2003; Nelson, 2010).

When developing a token economy to be used in a classroom setting the teacher should identify the target behaviors, take baseline on the target behaviors, select appropriate backup reinforcers, and select the type of token to be used (Martin & Pear, 1988). Identifying the target behaviors that will receive the token reinforcer will allow the teacher to target the behaviors to be increased. Tokens may also be taken away for displaying undesired behaviors (Cook & Browning-Wright, 2009). Token economies can be used to increase a wide variety of desirable school behaviors including correct responses in spelling (Truchlicka et al., 1998), higher accuracy on math problems (Swain & McLaughlin, 1998), increase classroom participation (Nelson, 2010), manage disruptive behaviors (Filcheck, et al., 2004), increase in-seat behavior (Higgins & McLaughlin, 2001), increasing attendance (Brooks, 1975), and increase compliance (Carton & Schweitzer, 1996).

The type of tokens the teacher uses can have an impact on the effectiveness of the token economy. When selecting a token the teacher should consider how the token will be distributed and the age of the student receiving the token. When using tangible tokens with young students they should be attractive, durable, easy to handle and store, and not easy to counterfeit (Martin & Pear, 1988). Older students may be able to use tokens that are more abstract, like tally marks, points, or coupons. A common form of token economy in schools is the use of a point system where points are the token (Smith & Misra, 1992).
Tokens economies can provide the following benefits to students; external motivators help students develop internal motivation (Boniecki & Moore, 2003; Kazdin & Bootzin, 1972) allows for individualization of treatment (Filcheck, et al., 2004; Sayeski & Brown, 2011), and allow teachers to manage multiple students at once (Filcheck et al., 2004; Larzelere, Daly, Davis, Chmelka, & Handwerk, 2004). Boniecki and Moore (2003) used a token economy to increase student participation and found that when the program was discontinued, students continued to participate at higher than pre-treatment levels. They concluded that the use of a token economy did increase intrinsic motivation to participate. Filcheck et al. (2004) found that using a token economy with 17 preschool students, instead of multiple individual behavior intervention programs, increased the teacher’s effectiveness while reaching similar behavioral objectives.

Some token economy systems require students to purchase certain basic privileges before purchasing additional conditioned reinforcers (Cook & Browning-Wright, 2009). Students purchase these privileges daily or weekly depending upon the students’ age. This type of procedure is effective at decreasing students’ reliance on tangible reinforcers by having them use some or all of the points to purchase activities. A variant of this procedure is to have students purchase a level on a level system with their points.

When using a token economy an understanding of basic economic principals is helpful. Token economies are susceptible to many of the same conditions that affect market economies, such as inflation, deflation, and depression. If too few tokens are required to access the backup reinforcer the students may earn rewards despite displaying undesirable behavior, whereas if too many tokens are required to access the backup reinforcer the student may lose motivation (Smith & Misra, 1992). Therefore, the teacher
must closely monitor the effectiveness of the exchange rate of tokens to backup reinforcer to ensure that the economy is running smoothly.

Higgins and McLaughlin (2001) used a token economy with a FI 5-minute schedule of providing tokens (check marks) of appropriate classroom behavior for a single student. The student was allowed to redeem the tokens for time to do a preferred activity at the beginning of the following day. The authors ran the token economy for 12 days with positive results. The student increased appropriate classroom behaviors for each of the 12 days of the program.

Musser, Bray, Kehle, and Jenson (2001) used a token economy with three school-aged students to decrease their disruptive behavior in class. The teacher used a FI 30-minute schedule of reinforcement with stickers as tokens. If students did not engage in problem behaviors during the 30 minute period they were given a sticker, teacher praise, and an envelop that held a card that the student could redeem for a prize at the end of the school day. After 30 days, each student displayed significantly more compliant behavior than the behavior displayed during the baseline period.

Schools often use token economies in conjunction with other interventions including social skills instruction (Hill, Esser, & Weidner, 1997; Wolfe, Dattilo, & Gast, 2003), level system (Filcheck et al., 2004, Garrick Duhaney, 2003; Hill et al., 1997), contingency contracts (Garrick & Duhaney, 2003; Theodore, Bray, & Kehle, 2004), and replacement behavior training (Barton-Arwood, Murrow, Lane, & Jolivette, 2005).

**Level systems.**

The use of a level system with EBD students is almost ubiquitous. Farrell, Smith, and Brownell (1998) surveyed 172 teachers of EBD students and found that 122 of them
use some type of level system to help manage students. Of the remaining 50 teachers, 40% of them said they had used a level system with students in the past. The authors found that the service delivery model the teachers used (resource, self-contained, special day school) had little influence on their decision to use a level system or not.

Farrell et al. (1998) surveyed teachers and administrators about the purpose of a level system. The most popular purpose was to control students’ behavior; followed by stopping disruptive behavior, structuring the classroom activities, and maintaining authority. Mohr and Pumariega (2004) argue that the authoritative and controlling nature of most level systems lead to poor outcomes for the individuals in these systems. Poorly managed level systems that rely on control and authority tend to focus more on reward and punishment than teaching appropriate behavior or measuring progress towards goals.

Farrell et al. (1998) found variance in the number of levels teacher use in their level systems; teachers reported as few as two and as many as nine levels, but most (84%) had four or five levels. Typically, each level in the system has its own designated criteria and privileges where higher levels afford students more privileges and independence. Students on the lowest level usually had few to no privileges. Kreisle (2010) recommends that students should only be on the lowest levels for a short time or it will decrease the effectiveness of the entire level system.

Farrell et al. (1998) found that 72.1% of teachers’ classroom based level systems were designed and implemented to treat all students in the same manner; that is no individualization of the system based on the students unique needs. Only 20.5% of teachers were reported to make any special accommodation for students. The authors did not report on students’ involvement in the development or implementation of the level
system. Since most respondents reported their level system was designed to manage or control students’ behavior, it could be assumed that most level systems were designed and implemented by staff with minimal input from students. This top down model of level system design and lack of individualization could lead to students feeling disenfranchised (Harper, 2005; Rubin, 2005).

Harper (2005) recommended developing a level system that has the flexibility to include some student input and an ability to be customized to meet individual student needs. Basing some of the level system criteria on individual student goal requirements is one way of customizing a level system.

Rubin (2005) suggested using the Circle of Courage (Breundtro, Brokenleg, & Van Bockern, 2002) model of designing a level system. In this model, the level system is organized into four levels with level one focusing on belonging, level two focusing on mastery of skills, level three focusing on independence, and level four focusing on giving back to other students. In the first level, the focus is on teaching the student to seek assistance from adults and peers, learn the procedures and expectations of the classroom, and to start to develop positive relationships with others. In this level, the student is encouraged to depend on others and build trust; later levels will focus on independence and self-reliance.

The second level (Mastery) focuses on learning to follow directions, take care of materials, and to persist in engaging in learning even when it is difficult. This level should focus on mastering the skills the student will need to be successful in the classroom without the support of a level system. The system teaches the student prosocial and conflict resolution skills. As the student learns these skills, he/she is allowed
more independence.

The third level (Independence) focuses on the student managing their own behavior with little to no supervision, completing schoolwork without direct supervision, and making healthy choices and personal decisions. This is the level where the student is encouraged to use the skills they learned on the other levels independently and take calculated risks.

The fourth level (Generosity) is the level where the student acts as a role model for other students and gives back to the system by teaching students on lower levels how to work their way through the system. The student should promote desirable behavior and the use of pro-social skills. On this level, the student makes the transition to leaving the system and rejoining students who do not need this level of support in order to be successful in school.

**Life Space Crisis Intervention.**

Life Space Crisis Intervention (LSCI) is a therapeutic competency based strategy for communicating with students who are experiencing emotional, psychological, or behavioral disruption in their life or "life space" (Forthun, McCombie, & Freado, 2006; Grskovic & Coetze, 2005). LSCI views a crisis as an opportunity to teach students new ways of thinking. In a crisis, a student’s self-concept and irrational beliefs often trigger intense feelings that lead to inappropriate behaviors. Adults can get caught up in the conflict cycle with the student and react to the student’s inappropriate behavior with counter-aggression increasing the student’s negative thought patterns and behavior (Long, 2010; Long, Fecser, & Brendtro, 1998).
Life Space Crisis Intervention model defines a crisis into six stages (Hill & Long, 1999; Long, Wood, & Fecser, 2001). These stages are the sequence in which a crisis develops and recommends adult interventions. Stage one, the Drain Off—De-escalate the Crisis, is where the adult conveys support and understanding of the student’s stress and tries to get the student to talk about the incident to drain off some of the emotional intensity. During this stage, the adult tries to identify the incident that caused the need for LSCI.

Stage two, Timeline—Student in Crisis Need to Talk, is where the adult encourages the student to share, in detail, the perceptions of the events surrounding the crisis. This is intended to decrease the emotional intensity while increasing the student’s reliance on rational words while discovering the student’s perceptions. The Timeline is established to obtain details of the student’s view of the incident, the associated stress, and personal involvement.

Stage three, Central Issue—Select the appropriate Reclaiming Intervention, is where the adult uses the information that he receives from the child to identify the central issue causing the negative emotional reactions. By identifying the central issue, the adult is able to select one of the six appropriate reclaiming interventions. These interventions include Red Flag, Reality Rub, Symptom Estrangement, Massaging Numb Values, New Tools, and Manipulation of Body Boundaries. Using the appropriate reclaiming intervention increases the likelihood of resolving the conflict.

Stage four, Insight—The Goal of the Reclaiming Intervention, is where the adult uses interviewing skills to help the student recognize and change self-defeating behavior patterns. The adult helps the student reframe their perceptions of the event to enable them
to gain new insight into their repetitive patterns of self-defeating behaviors and help him/her understand that change is possible.

Stage five, New Skills—Plan for Success, is where the adult teaches the student new skills needed for behavior change. The adult teaches the student the appropriate prosocial skills and helps them practice the skill so if a similar event happens in the future he/she is able to appropriately deal with the situation.

Stage six, Transfer of Learning—Get Ready to Resume Activity, is where the adult prepares the student to reenter the on-going activity and setting of the classroom and close down the private topics and feelings related to the event. If there is a consequence for behaviors that occurred during the incident the adult will prepare him/her to accept the consequence.

Life Space Crisis Intervention is compatible with other interventions including Aggression Replacement Therapy (Amendola & Oliver, 2003), functional behavior assessment (McGowan, 2002), and Skillstreaming (Amendola & Oliver, 2003). The LSCI program is a flexible program that may be incorporated with other programs to support students with behavior disorders.

**Time Out from Reinforcement**

Time out from reinforcement is often misunderstood or incorrectly defined by both professionals and lay people (Gresham, 1979). Some of this confusion stems from the multiple definitions for time out in the literature, the wide variety of ways time out is implemented, and the paradoxical effect time out has in some applied settings. The confusion regarding time out has led to it being inappropriately applied or used unethically in the applied setting (Delaney, 1999). As a behavior change procedure, time
Out may produce a variety of behavioral consequences including those that are both punishing (Donaldson & Vollmer, 2011; Vegas, Jenson, & Kircher, 2007) and reinforcing (Gresham, 1979; Solnick, Rincover, & Peterson, 1977).

Time out from reinforcement is a collection of behavior modification techniques that involves removing reinforcement or removing an individual from a reinforcing environment contingent on the display of an undesirable behavior (Martin & Pear, 1988; Ryan, et al., 2007). Time out is typically considered a punishment, in that it is designed to decrease the behavior it follows. The theory behind time out is that the classroom serves as a rich source of time in reinforcement and the student wishes to be there, so if the reinforcement is removed or if the student is removed from the enriching environment through a time out procedure they will decrease those behaviors that get them removed from the classroom. If the undesirable behaviors decrease in the future due to the time out procedure then either punishment is occurring, that is a student is avoiding the aversive of time out or they improved their behavior in order to stay in the classroom time in environment. Some researchers argue that in some cases time out is actually negative reinforcement (Everett et al., 2007; Harris, 1985; Gresham, 1979). Negative reinforcement is the avoidance of something unpleasant that increases the likelihood of a behavior occurring in the future (Martin & Pear, 1988). Whether students are decreasing undesired behaviors because they were sent to time out for displaying the behavior (punishment) or they increases a desired behavior to avoid going to time out again (negative reinforcement) may be a matter of perspective but it does add to the confusion surround the use of time out. To add to the confusion, time out sometimes increases the frequency of the undesired behavior because the reinforcement factor between the time in
and time out environments is not enough to change the student’s behavior (Gresham, 1979). In situations where students are asked to complete a difficult or not preferred academic task, they might choose to engage in undesirable behaviors in order to be sent to time out to avoid completing the task. In these escape responding situations, time out is functioning as negative reinforcement for the undesirable behavior because the student is avoiding an unpleasant task by increasing the undesirable behavior. Erford (1999) found that the greater change in perceived reinforcement from the time in environment to the time out environment the more effective time out is as a reductive technique. It is imperative that teachers understand these behavioral principles so they can adjust their interventions in order to get the results they desire (Turner & Watson, 1999).

Zabel (1986) surveyed 730 teachers and found that 86% of them used timeout procedures as a behavior management strategy. She found that teachers of younger children used the time out more frequently then teachers of older children. She also found that physical and verbal aggression were the behaviors most frequently resulting in time out.

Vegas et al. (2007) did a meta-analysis of 25 single subject studies finding that time out is an effective reductive procedure when used separately or in combination with other behavior modification techniques. The authors also found that time out was more effective with males than females and with students 4 to 7 years old as opposed to students 8 to 12 years old. Time out when used as the primary intervention is effective but when used with other reductive techniques (response cost, multiple layers of time out) is even more effective at deceasing undesirable behaviors.

The duration of the time out can influence its effectiveness (Benjamin, Mazzarins,
McGuffin (1991) studied 20 children in a hospital setting to determine if certain durations of time out were more effective. The study compared the effectiveness of four different timeout durations (1, 5, 10, and 20 minutes) on aggressive behaviors. The study took place over 60 days where each time out duration was implemented for 15 days on a multi-element treatment design. Each 15-day period was divided into 5 three-day periods where the duration time was implemented. During the 3-day period, the duration of the time out was clearly posted so the children knew how long a time out for aggression would be. The researchers found the one-minute time out was the least effective, followed by 10 minute, 5 minute, and 20 minute. The 20-minute time out was the most effective deterrent for aggression but only slightly better than the five-minute time out.

Benjamin et al. (1983) studied thirteen children in a hospital setting to determine which of five different durations of time out (15, 30, 45, 60, and 90 minutes) was most effective at deterring aggressive behaviors. The hospital’s procedure called for children to receive a 30-minute time out for aggression to peers and 60-minute time out for aggression toward adults. The researcher used an eight-week baseline with the hospital’s procedure as a baseline and then compared the baseline to two, eight-week experimental procedures. The first experimental procedure was a shorter duration (15-minutes for aggression to peers and 30-minutes for aggression to adults). The second experimental procedure was a longer duration (45-minutes for aggression to peers and 90-minutes for aggression to adults). There was no statistically significant in aggression for either the shorter or the longer duration of time out when compared to the baseline. However, the time it took students to settle and begin the time out was significantly longer for the
longer time out.

The Benjamin et al. (1983) and McGuffin (1991) studies suggest that long duration time outs may be effective at decreasing aggression but if the time out is too long the child may have a difficult time starting their time out. Plumber et al. (1977) notes that the time students spend in time removes them from contact with the positive contingencies designed to teach desirable academic and social skills.

Readdick and Chapman (2000) interviewed 42 preschool students after they completed a time out procedure to determine the child’s perspective of time out. Of the children in the study, 93% said they liked preschool and had at least one friend at preschool. Most children in the study expressed negative feelings about time out, 75% of them reported feeling lonely when in time out. When asked if they thought their teacher or peers liked them upon leaving the time out 73% responded that their teacher did not like them and 57% said their peers did not like them. When asked why they were in time out 35% said they did not know why they had to go to time out. This study suggests that most children do not like time out even though in the moment, it may act as a deterrent. Students may also think that others do not like them because they had to go to time out, this may interfere with students developing good relationships with others. The fact that 35% of the children did not understand why they were in time out decreases its effectiveness in deterring undesirable behaviors.

Harris (1985) identified three categories of time out procedures. These procedures are isolation time out, exclusion time out, and non-exclusion timeout. Ryan et al. (2007) identified similar categories of time out including seclusion time out, exclusion time out, and inclusion time out. Each of these time out procedures can be effective at
decreasing undesirable behaviors when implemented correctly (Harris, 1985; Ryan et al., 2007).

**Inclusion time out.** Inclusion time out, also referred to as contingent observation (Martin & Pear, 1988), is the least intrusive form of time out (Harris, 1985; Ryan et al., 2007; Turner & Watson, 1999). Inclusion time out is also known as non-exclusionary time out. Inclusion time out includes several behavioral procedures including planned ignoring (Barbeta & Bicard, 2005; Ryan et al., 2007), contingent observation (Vegas et al., 2007), withdrawal of materials (Knoster, Wells, & McDowell, 2003; Turner & Watson, 1999), and time out ribbon (Foxx & Shapiro, 1978; Kostewicz, 2010).

Planned Ignoring is the systematic withdrawal of social attention for a predetermined period upon the onset of mild levels of undesirable behavior (Knoster et al., 2003; Turner & Watson, 1999). When using planned ignoring it is helpful to increase praise of other students who are engaging in desirable behavior to heighten the contrast between the ignoring and other students gaining attention. Planned ignoring works best with mild undesirable behaviors that are maintained primarily by teacher negative or positive attention. Using planned ignoring in a classroom setting can be difficult because some behaviors can distract or interfere with instruction to an extent that they are difficult to ignore. Furthermore, peer attention may also maintain or contribute to the maintenance of a behavior, particularly those behaviors that are potentially dangerous and cannot be ignored (Turner & Watson, 1999).

Contingent observation is a time out procedure where a student is required to sit on the sideline of the ongoing activity upon the display of a target behavior and observe the appropriate behaviors of her or his peers for a brief period of time (Harris 1985;
Knoster et al., 2003). This type of time out is frequently used during recess or physical education classes where the child can watch the other children play but not participate due to their display of an undesired behavior (Johnson, 1999). The student is able to watch but not participate in the activities. To make this form of time more effective the teacher should provide targeted praise to students who are displaying the desired behavior (Turner & Watson, 1999).

Withdrawal of materials is another example of inclusion timeout. In this procedure, the teacher simply removes the materials that the student is using upon the occurrence of the undesired behavior (Knoster et al., 2003). This form of time out is most effective when the student wants to interact with the materials, like an art project or a science experiment. It is less effective if the student is not engaged with the materials.

The time out ribbon is another form of inclusion time out that combines contingent observation and removal of materials first investigated by Foxx and Shapiro (1978). In the time out ribbon procedure each student wears some type of physical item (ribbon, bracelet, pin) and receives reinforcement from others. If the child engages in a predetermined undesirable target behavior the item (ribbon) is removed and the child is ignored and is not able to receive any reinforcement (Foxx & Shapiro, 1978; Kostewicz, 2010).

Foxx and Shapiro (1978) originally used the time out ribbon procedure with five children in an institutional school setting. Baseline data was collected over seven days. The children then received 10 days of increased reinforcement in order to make the distinction between time in and time out from reinforcement more pronounced. The next 12 days the students received the time out and reinforcement procedure. The
reinforcement period followed by the time out and reinforcement procedure period were then repeated for shorter periods. The authors found that all of the children’s target undesirable behaviors decreased significantly during the reinforcement and time out periods when compared to baseline behaviors. The authors also noted an obvious positive change in students’ behavior when they wore their ribbons.

Kostewicz (2010) completed a review of six research articles on the use of the time out ribbon procedure. The author discovered that all six studies had differing results. The researchers who targeted decreasing undesirable behavior were generally successful at reducing the problem behavior. Researchers who were trying to increase specific desirable behaviors had mixed results. This could be because time out is a behavior reduction technique not a method of reinforcement for desired behaviors.

**Exclusion time out.** Exclusion time out is the process the teacher uses to remove the student from the educational activity, but not the classroom, for a period of time contingent upon the display of an undesirable behavior (Ryan et al., 2007). In an exclusion time out procedure the child is typically taken to another part of the classroom, placed in a corner, or placed behind a screen so he/she cannot interact with others or participate in the classroom activities. The child is supervised during the time out but he/she does not receive any reinforcement from others. When the function of the child’s behavior is to get the teacher’s attention, exclusion time out may be an appropriate intervention.

**Seclusion time out.** Seclusion time out is also known as isolation time out. In a seclusion time out the student removed from the classroom contingent upon a target behavior (usually aggression) and placed in a room or area in which he/she is prevented
from leaving until the time out is served (Ryan et al., 2007). Seclusion is the most restrictive and controversial form of time out (Turner & Watson, 1999). In the main, seclusion time out is not recommended for use in public school programs. However, if seclusion time out is to be implemented in specialized programs, staff must be trained in the ethical treatment of children during the use of this procedure following American Psychiatric Association guidelines (1985).
CHAPTER THREE

Methodology

Participants

Number of participants. The maximum accrual for this study was \( N = 45 \). All study subjects were elementary grade students with identified disabilities requiring an individual behavior intervention plan and participation in an elementary grades pro-social cognitive behavioral skills program.

Gender of participants. Of the total number of elementary grade students with identified disabilities requiring an individual behavior intervention plan and participation in an elementary grades pro-social cognitive behavioral skills program the gender ratio was 4 girls (9%) and 41 (91%) boys. The gender ratio of the study participants is congruent with the research school districts gender demographics for elementary age students who require behavioral intervention.

Age range of participants. The age range for all study participants was from 4 years 11 months to 10 years 9 months. All participants were in kindergarten through 5th-grades. The age range of the study participants is congruent with the research school districts age range demographics for students in elementary grades.

Racial and ethnic origin of participants. Of the total number of selected study subjects with identified disabilities requiring an individual behavior intervention plan and participation in an elementary grades pro-social cognitive behavioral skills program the ethnic and racial origin was 40 White not Hispanic (88%) students, four (8%) Black not Hispanic students and one (2%) Asian student. The racial and ethnic origin of the study participants is congruent with the research school districts racial and ethnic demographics.
for elementary age students.

**Inclusion criteria of participants.** Elementary age students with identified disabilities requiring an individual behavior intervention plan who attended the research school district and who completed the elementary grades pro-social cognitive behavioral skills program were eligible.

**Method of participant identification.** Students with identified disabilities requiring an individual behavior intervention plan and participation in an elementary grades pro-social cognitive behavioral skills program, as determined by their Individual Education Plan (IEP) team, were identified for participation. No individual identifiers were attached to the behavior data of the 45 participating students in the three naturally formed groups.

**Description of Procedures**

**Research design.** The pretest-posttest three-group comparative efficacy study design is displayed in the following notation.

- Group 1 X₁ O₁ Y₁ O₂
- Group 2 X₁ O₁ Y₂ O₂
- Group 3 X₁ O₁ Y₃ O₂

**Group 1 = study participants #1.** A naturally formed group of students with identified disabilities requiring an individual behavior intervention plan and participation in an elementary grades pro-social cognitive behavioral skills program (n = 15).

**Group 2 = study participants #2.** A naturally formed group of students with identified disabilities requiring an individual behavior intervention plan and participation in an elementary grades pro-social cognitive behavioral skills program (n = 14).
**Group 3 = study participants #3.** A naturally formed group of students with identified disabilities requiring an individual behavior intervention plan and participation in an elementary grades pro-social cognitive behavioral skills program \((n = 16)\).

**X_1 = study constant.** All participants \((N = 45)\) completed the elementary grades pro-social cognitive behavioral skills program and returned to less restrictive classroom placements.

**Y_1 = study independent variable, time required to complete the elementary grades pro-social cognitive behavioral skills program, condition #1.** Within one school year or less students completed all program requirements and were returned to less restrictive classroom placements.

**Y_2 = study independent variable, time required to complete the elementary grades pro-social cognitive behavioral skills program, condition #2.** Within one to two school years, students completed all program requirements and were returned to less restrictive classroom placements.

**Y_3 = study independent variable, time required to complete the elementary grades pro-social cognitive behavioral skills program, condition #3.** Within two or more school years, students completed all program requirements and were returned to less restrictive classroom placements.

**O_1 = study pretest dependent measures.** (1) Teacher administered Fixed Interval in-class observations occurring every 15-minute \((FI-15)\) recorded on point sheets for desired behavior accelerative incompatible alternatives (a) on-task (b) follow directions, and (c) positive interactions. (2) Teacher administered time outs for undesirable behavior reductive.
$O_2 =$ **study posttest dependent measures.** (1) Teacher administered Fixed Interval in-class observations occurring every 15-minute ($FI-15$) recorded on point sheets for desired behavior accelerative incompatible alternatives (a) on-task (b) follow directions, and (c) positive interactions. (2) Teacher administered time outs for undesirable behavior reductive.

**Implementation of the Independent Variables**

The independent variables for this study were the time it took for the three student groups to complete the elementary grade pro-social cognitive behavioral skills program and return to a less restrictive classroom setting. The students in the first group completed all program requirements of the elementary grades pro-social cognitive behavioral skills program within one school year or less and returned to less restrictive classroom placements. The students in the second group completed all program requirements of the elementary grades pro-social cognitive behavioral skills program within one to two school years and returned to less restrictive classroom placements. The students in the third group completed all program requirements of the elementary grades pro-social cognitive behavioral skills program within two or more school years and returned to less restrictive classroom placements.

**Purpose of the Study**

The purpose of the study is to determine the impact of prolonged participation in a pro-social cognitive behavioral skills program on elementary age students, with behavior related disorders, behavior accelerative, behavior reductive, and return to regular classroom outcomes.
**Dependent Measures**

The study’s two dependent variable were desired behavior accelerative incompatible alternatives and time outs for undesirable behavior reductive behaviors.

The first of these, desired behavior accelerative incompatible alternatives, was analyzed using the following dependent measures teacher administered Fixed Interval in-class observations occurring every 15-minute (FI-15) recorded on point sheets for desired behavior accelerative incompatible alternatives (a) on-task (b) follow directions, and (c) positive interactions. The second of these, time outs for undesirable behavior, was analyzed using the number of time outs for undesirable behavior.

**Research Questions and Data Analysis**

The following research questions were utilized to analyze student behavior accelerative outcomes following one school year or less of participation in an elementary grades pro-social cognitive behavioral skills program.

**Overarching Pretest-Posttest Behavior Research Question #1.** Did elementary age students, with behavior related disorders following one school year or less of participation in an elementary grades pro-social cognitive behavioral skills program lose, maintain, or improve their pretest beginning program nine weeks compared to posttest ending program nine weeks behavior accelerative teacher administered Fixed Interval in-class observations occurring every 15-minutes (FI-15) recorded on point sheets for desired behavior accelerative incompatible alternatives (a) on-task (b) follow directions, and (c) positive interactions outcomes following one school year or less of program participation?

**Sub-Question 1a.** Was there a significant difference between students’
pretest beginning program nine weeks compared to posttest ending program nine weeks
teacher administered Fixed Interval in-class observations occurring every 15-minutes (FI-
15) recorded on point sheets for desired behavior accelerative incompatible alternatives
(a) on-task outcomes?

Sub-Question 1b. Was there a significant difference between students’
pretest beginning program nine weeks compared to posttest ending program nine weeks
teacher administered Fixed Interval in-class observations occurring every 15-minutes (FI-
15) recorded on point sheets for desired behavior accelerative incompatible alternatives
(b) follow directions outcomes?

Sub-Question 1c. Was there a significant difference between students’
pretest beginning program nine weeks compared to posttest ending program nine weeks
teacher administered Fixed Interval in-class observations occurring every 15-minutes (FI-
15) recorded on point sheets for desired behavior accelerative incompatible alternatives
(c) positive interactions outcomes?

Analysis. Research Sub-Questions #1a, 1b, and 1c was analyzed using dependent
\( t \) tests to examine the significance of the difference between elementary age students’
pretest beginning program nine weeks compared to posttest ending program nine weeks
following one school year or less of program participation teacher administered Fixed
Interval in-class observations occurring every 15-minutes (FI-15) recorded on point
sheets for desired behavior accelerative incompatible alternatives. Because multiple
statistical tests were conducted, a one-tailed .01 alpha level was employed to help control
for Type 1 errors. Means and standard deviations were displayed on tables.

The following research questions were utilized to analyze student behavior
accelerative outcomes following one to two school years of participation in an elementary grades pro-social cognitive behavioral skills program.

**Overarching Pretest-Posttest Behavior Research Question #2.** Did elementary age students, with behavior related disorders following one to two school years of participation in an elementary grades pro-social cognitive behavioral skills program lose, maintain, or improve their pretest beginning program nine weeks compared to posttest ending program nine weeks behavior accelerative teacher administered Fixed Interval in-class observations occurring every 15-minutes (FI-15) recorded on point sheets for desired behavior accelerative incompatible alternatives (a) on-task (b) follow directions, and (c) positive interactions outcomes following one to two school years of program participation?

**Sub-Question 2a.** Was there a significant difference between students’ pretest beginning program nine weeks compared to posttest ending program nine weeks teacher administered Fixed Interval in-class observations occurring every 15-minutes (FI-15) recorded on point sheets for desired behavior accelerative incompatible alternatives (a) on-task outcomes?

**Sub-Question 2b.** Was there a significant difference between students’ pretest beginning program nine weeks compared to posttest ending program nine weeks teacher administered Fixed Interval in-class observations occurring every 15-minutes (FI-15) recorded on point sheets for desired behavior accelerative incompatible alternatives (b) follow directions outcomes?

**Sub-Question 2c.** Was there a significant difference between students’ pretest beginning program nine weeks compared to posttest ending program nine weeks
teacher administered Fixed Interval in-class observations occurring every 15-minutes (FI-15) recorded on point sheets for desired behavior accelerative incompatible alternatives (c) positive interactions outcomes?

**Analysis.** Research Sub-Questions #2a, 2b, and 2c was analyzed using dependent t tests to examine the significance of the difference between elementary age students’ pretest beginning program nine weeks compared to posttest ending program nine weeks following one to two school years of program participation teacher administered Fixed Interval in-class observations occurring every 15-minutes (FI-15) recorded on point sheets for desired behavior accelerative incompatible alternatives. Because multiple statistical tests were conducted, a one-tailed .01 alpha level was employed to help control for Type 1 errors. Means and standard deviations were displayed on tables.

The following research questions were utilized to analyze student behavior accelerative outcomes following three or more school years of participation in an elementary grades pro-social cognitive behavioral skills program.

**Overarching Pretest-Posttest Behavior Research Question #3.** Did elementary age students, with behavior related disorders following two or more school years of participation in an elementary grades pro-social cognitive behavioral skills program lose, maintain, or improve their pretest beginning program nine weeks compared to posttest ending program nine weeks behavior accelerative teacher administered Fixed Interval in-class observations occurring every 15-minutes (FI-15) recorded on point sheets for desired behavior accelerative incompatible alternatives (a) on-task (b) follow directions, and (c) positive interactions outcomes following two or more school years of program?

**Sub-Question 3a.** Was there a significant difference between students’
pretest beginning program nine weeks compared to posttest ending program nine weeks teacher administered Fixed Interval in-class observations occurring every 15-minutes (FI-15) recorded on point sheets for desired behavior accelerative incompatible alternatives (a) on-task outcomes?

Sub-Question 3b. Was there a significant difference between students’ pretest beginning program nine weeks compared to posttest ending program nine weeks teacher administered Fixed Interval in-class observations occurring every 15-minutes (FI-15) recorded on point sheets for desired behavior accelerative incompatible alternatives (b) follow directions outcomes?

Sub-Question 3c. Was there a significant difference between students’ pretest beginning program nine weeks compared to posttest ending program nine weeks teacher administered Fixed Interval in-class observations occurring every 15-minutes (FI-15) recorded on point sheets for desired behavior accelerative incompatible alternatives (c) positive interactions outcomes?

Analysis. Research Sub-Questions #3a, 3b, and 3c was analyzed using dependent t tests to examine the significance of the difference between elementary age students’ pretest beginning program nine weeks compared to posttest ending program nine weeks teacher administered Fixed Interval in-class observations occurring every 15-minutes (FI-15) recorded on point sheets for desired behavior accelerative incompatible alternatives. Because multiple statistical tests were conducted, a one-tailed .01 alpha level was employed to help control for Type 1 errors. Means and standard deviations were displayed on tables.

The following three research questions were utilized to analyze student behavior
accelerative outcomes following completion of program for one school year or less, one
to two school years, and three or more school years of participation in an elementary
grades pro-social cognitive behavioral skills program.

**Overarching Posttest-Posttest Behavior Research Question #4.** Do
elementary age students, with behavior related disorders who completed one or less
school years, one to two school years, and three or more school years of participation in
an elementary grades pro-social cognitive behavioral skills program have congruent or
different posttest ending program nine weeks compared to posttest ending program nine
weeks behavior accelerative teacher administered Fixed Interval in-class observations
occurring every 15-minutes ($FI-15$) recorded on point sheets for desired behavior
accelerative incompatible alternatives on task outcomes?

**Analysis.** Research Question #4 was analyzed using a single classification
Analysis of Variance (ANOVA) to determine the main effect congruence or difference
between elementary age students with behavior related disorders who completed one or
less school years, one to two school years, and three or more school years of program
participation posttest ending program nine weeks compared to posttest ending program
nine weeks behavior accelerative teacher administered Fixed Interval in-class
observations occurring every 15-minutes ($FI-15$) recorded on point sheets for desired
behavior accelerative incompatible alternatives on-task outcomes.

**Overarching Posttest-Posttest Behavior Research Question #5.** Do
elementary age students, with behavior related disorders who completed one or less
school years, one to two school years, and three or more school years of participation in
an elementary grades pro-social cognitive behavioral skills program have congruent or
different posttest ending program nine weeks compared to posttest ending program nine
weeks behavior accelerative teacher administered Fixed Interval in-class observations
occurring every 15-minutes ($FI_{15}$) recorded on point sheets for desired behavior
accelerative incompatible alternatives following directions outcomes?

**Analysis.** Research Question #5 was analyzed using a single classification
Analysis of Variance (ANOVA) to determine the main effect congruence or difference
between elementary age students with behavior related disorders who completed one or
less school years, one to two school years, and three or more school years of program
participation posttest ending program nine weeks compared to posttest ending program
nine weeks behavior accelerative teacher administered Fixed Interval in-class
observations occurring every 15-minutes ($FI_{15}$) recorded on point sheets for desired
behavior accelerative incompatible alternatives following directions outcomes.

**Overarching Posttest-Posttest Behavior Research Question #6.** Do
elementary age students, with behavior related disorders who completed one or less
school years, one to two school years, and three or more school years of participation in
an elementary grades pro-social cognitive behavioral skills program have congruent or
different posttest ending program nine weeks compared to posttest ending program nine
weeks behavior accelerative teacher administered Fixed Interval in-class observations
occurring every 15-minutes ($FI_{15}$) recorded on point sheets for desired behavior
accelerative incompatible alternatives positive interactions outcomes?

**Analysis.** Research Question #6 was analyzed using a single classification
Analysis of Variance (ANOVA) to determine the main effect congruence or difference
between elementary age students with behavior related disorders who completed one or
less school years, one to two school years, and three or more school years of program participation posttest ending program nine weeks compared to posttest ending program nine weeks behavior accelerative teacher administered Fixed Interval in-class observations occurring every 15-minutes (FI-15) recorded on point sheets for desired behavior accelerative incompatible alternatives positive interactions outcomes.

The following research question was utilized to analyze student time out behavior reductive frequency change over time following participation in an elementary grades pro-social cognitive behavioral skills program.

**Overarching Pretest-Posttest Average Time Out Frequency Change Over Time**

**Research Question #7.** Will individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within one school year or less, within one to two school years, within more than two school years and were returned to less restrictive classroom placements have congruent or different time out behavior reductive frequency change over time?

**Analysis.** Research Question #7 utilized a chi-square test of significance to compare observed time out behavior reductive frequencies over time for students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within one school year or less, within one to two school years, within more than two school years and were returned to less restrictive classroom placements. A .01 alpha level was employed to help control for Type 1 errors. Frequencies and percents were displayed on tables.
Data Collection Procedures

All study behavioral data was retrospective, archival, and routinely collected school information. Permission from the appropriate school research personnel was obtained. Naturally formed groups of 15 students in the first arm, 14 students in the second arm, and 16 students in the third arm. Non-coded numbers were used to display individual de-identified behavioral data. Aggregated group data, descriptive statistics, and parametric statistical analysis were utilized and reported with means and standard deviations on tables.

Performance site. The research was conducted in the public school setting through normal educational practices. The study procedures did not interfere with the normal educational practices of the public school and did not involve coercion or discomfort of any kind. Data were stored on spreadsheets and computer flash drives for statistical analysis in the office of the primary researcher and the dissertation chair. Data and computer files were kept in locked file cabinets. No individual identifiers were attached to the data.

Institutional Review Board (IRB) for the protection of Human Subjects

Approval Category. The exemption categories for this study were provided under 45CFR.101(b) categories 1 and 4. The research was conducted using routinely collected archival data. A letter of support from the district was provided for IRB review.
CHAPTER FOUR

Results

Purpose of the Study

The purpose of the study is to determine the impact of prolonged participation in a pro-social cognitive behavioral skills program on elementary age students, with behavior related disorders, behavior accelerative, behavior reductive, and return to regular classroom outcomes.

Implementation of the Independent Variables

The independent variables for this study were the time it took for the three student groups to complete the elementary grade pro-social cognitive behavioral skills program and return to a less restrictive classroom setting. The students in the first group completed all program requirements of the elementary grades pro-social cognitive behavioral skills program within one school year or less and returned to less restrictive classroom placements. The students in the second group completed all program requirements of the elementary grades pro-social cognitive behavioral skills program within one to two school years and returned to less restrictive classroom placements. The students in the third group completed all program requirements of the elementary grades pro-social cognitive behavioral skills program within two or more school years and returned to less restrictive classroom placements.

Dependent Measures

The study’s two dependent variable were desired behavior accelerative incompatible alternatives and time outs for undesirable behavior reductive behaviors.

The first of these, desired behavior accelerative incompatible alternatives, was
analyzed using the following dependent measures teacher administered Fixed Interval in-class observations occurring every 15-minute (FI-15) recorded on point sheets for desired behavior accelerative incompatible alternatives (a) on-task (b) follow directions, and (c) positive interactions. The second of these, time outs for undesirable behavior, was analyzed using the number of time outs for undesirable behavior.

Table 1 displays demographic information of individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within one school year or less and were returned to less restrictive classroom placements. Table 2 displays demographic information of individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within one to two school years and were returned to less restrictive classroom placements. Table 3 displays demographic information of individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within more than two school years and were returned to less restrictive classroom placements.

Research Question #1 Results

Table 4 displays the first hypothesis pretest beginning program compared to posttest ending program percentage of on task outcomes for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within one school year or less and were returned to less restrictive classroom placements.
Table 5 displays the second hypothesis for beginning program compared to posttest ending program percentage of following directions outcomes for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within one school year or less and were returned to less restrictive classroom placements.

Table 6 displays the third hypothesis for pretest beginning program compared to posttest ending program percentage of positive interactions outcomes for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within one school year or less and were returned to less restrictive classroom placements.

**Sub-Question 1a.** As found in Table 4 beginning program pretest $M = 0.88$ ($SD = 0.06$) and ending program posttest $M = 0.92$ ($SD = 0.06$) for percentage of on task outcomes for individual students who completed an elementary grades pro-social cognitive behavioral skills program within one school year or less was statistically significantly different rejecting the null hypothesis in the direction of on task outcomes improvement where $t(14) = 4.76$, $p = .0002$ (one-tailed), $d = 1.114$.

**Sub-Question 1b.** As found in Table 5 beginning program pretest $M = 0.87$ ($SD = 0.06$) and ending program posttest $M = 0.92$ ($SD = 0.05$) for percentage of following directions outcomes for individual students who completed an elementary grades pro-social cognitive behavioral skills program within one school year or less was statistically significantly different rejecting the null hypothesis in the direction of following directions outcomes improvement where $t(14) = 5.37$, $p = .00004$ (one-tailed), $d = 1.355$. 
Sub-Question 1c. As found in Table 6 beginning program pretest $M = 0.90$ ($SD = 0.06$) and ending program posttest $M = 0.94$ ($SD = 0.04$) for percentage of positive interactions outcomes for individual students who completed an elementary grades pro-social cognitive behavioral skills program within one school year or less was statistically significantly different rejecting the null hypothesis in the direction of positive interactions outcomes improvement where $t(14) = 4.85, p = .0001$ (one-tailed), $d = 1.282$.

Research Question #2

Table 4 displays the first hypothesis pretest beginning program compared to posttest ending program percentage of on task outcomes for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within one to two school years and were returned to less restrictive classroom placements.

Table 5 displays the second hypothesis for beginning program compared to posttest ending program percentage of following directions outcomes for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within one to two school years and were returned to less restrictive classroom placements.

Table 6 displays the third hypothesis for pretest beginning program compared to posttest ending program percentage of positive interactions outcomes for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program
within one to two school years and were returned to less restrictive classroom placements.

**Sub-Question 2a.** As found in Table 4 beginning program pretest $M = 0.81$ ($SD = 0.13$) and ending program posttest $M = 0.88$ ($SD = 0.09$) for percentage of on task outcomes for individual students who completed an elementary grades pro-social cognitive behavioral skills program within one to two school years was statistically significantly different rejecting the null hypothesis in the direction of on task outcomes improvement where $t(13) = 2.78$, $p = .008$ (one-tailed), $d = 1.176$.

**Sub-Question 2b.** As found in Table 5 beginning program pretest $M = 0.77$ ($SD = 0.14$) and ending program posttest $M = 0.88$ ($SD = 0.08$) for percentage of following directions outcomes for individual students who completed an elementary grades pro-social cognitive behavioral skills program within one to two school years was statistically significantly different rejecting the null hypothesis in the direction of following directions outcomes improvement where $t(13) = 5.26$, $p = .00007$ (one-tailed), $d = 1.887$.

**Sub-Question 2c.** As found in Table 6 beginning program pretest $M = 0.83$ ($SD = 0.11$) and ending program posttest $M = 0.90$ ($SD = 0.07$) for percentage of positive interactions outcomes for individual students who completed an elementary grades pro-social cognitive behavioral skills program within one to two school years was statistically significantly different rejecting the null hypothesis in the direction of positive interactions outcomes improvement where $t(13) = 3.47$, $p = .002$ (one-tailed), $d = 1.083$.

**Research Question #3**

Table 4 displays the first hypothesis pretest beginning program compared to posttest ending program percentage of on task outcomes for individual students with
identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within two or more school years and were returned to less restrictive classroom placements.

Table 5 displays the second hypothesis for beginning program compared to posttest ending program percentage of following directions outcomes for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within two or more school years and were returned to less restrictive classroom placements.

Table 6 displays the third hypothesis for pretest beginning program compared to posttest ending program percentage of positive interactions outcomes for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within two or more school years and were returned to less restrictive classroom placements.

**Sub-Question 3a.** As found in Table 4 beginning program pretest $M = 0.80$ ($SD = 0.08$) and ending program posttest $M = 0.91$ ($SD = 0.06$) for percentage of on task outcomes for individual students who completed an elementary grades pro-social cognitive behavioral skills program within more than two school years was statistically significantly different rejecting the null hypothesis in the direction of on task outcomes improvement where $t(15) = 3.99$, $p = .0006$ (one-tailed), $d = 1.148$.

**Sub-Question 3b.** As found in Table 5 beginning program pretest $M = 0.76$ ($SD = 0.09$) and ending program posttest $M = 0.91$ ($SD = 0.06$) for percentage of following
directions outcomes for individual students who completed an elementary grades pro-social cognitive behavioral skills program within more than two school years was statistically significantly different rejecting the null hypothesis in the direction of on task outcomes improvement where $t(15) = 5.61, p = .00002$ (one-tailed), $d = 1.502$.

**Sub-Question 3c.** As found in Table 6 beginning program pretest $M = 0.84$ ($SD = 0.09$) and ending program posttest $M = 0.92$ ($SD = 0.06$) for percentage of positive interactions outcomes for individual students who completed an elementary grades pro-social cognitive behavioral skills program within more than two school years was statistically significantly different rejecting the null hypothesis in the direction of positive interactions outcomes improvement where $t(15) = 2.93, p = .005$ (one-tailed), $d = 0.794$.

**Research Question #4**

Table 7 displays the fourth hypothesis for posttest ending on task outcomes compared to posttest ending on task outcomes for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within one school year or less, within one to two school years, within more than two school years and were returned to less restrictive classroom placements. The fourth posttest-posttest hypothesis was tested using Analysis of Variance (ANOVA). As seen in Table 7 the null hypothesis was not rejected for posttest ending on task outcomes compared to posttest ending on task outcomes for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within one school year or less ($M = 0.92, SD = 0.06$), within one to two school years ($M = 0.88, SD = 0.09$), and within more than two school years ($M$
where the overall main effect of posttest ending on task outcomes for individual students with identified disabilities was not statistically significant, \( F(2, 42) = 1.57, p = 0.22 \). Because no significant main effect was found post hoc contrast analyses were not conducted.

**Research Question #5**

Table 8 displays the fifth hypothesis for posttest ending following directions outcomes compared to posttest ending following directions outcomes for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within one school year or less, within one to two school years, within more than two school years and were returned to less restrictive classroom placements. The fifth posttest-posttest hypothesis was tested using Analysis of Variance (ANOVA). As seen in Table 8 the null hypothesis was not rejected for posttest ending following directions outcomes compared to posttest following directions outcomes for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within one school year or less \( (M = 0.92, SD = 0.05) \), within one to two school years \( (M = 0.88, SD = 0.08) \), and within more than two school years \( (M = 0.91, SD = 0.06) \) where the overall main effect of posttest ending following directions outcomes for individual students with identified disabilities was not statistically significant, \( F(2, 42) = 1.47, p = 0.24 \). Because no significant main effect was found post hoc contrast analyses were not conducted.
**Research Question #6**

Table 9 displays the sixth hypothesis for posttest ending positive interactions outcomes compared to posttest ending positive interactions outcomes for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within one school year or less, within one to two school years, within more than two school years and were returned to less restrictive classroom placements. The sixth posttest-posttest hypothesis was tested using Analysis of Variance (ANOVA). As seen in Table 9 the null hypothesis was not rejected for posttest ending positive interactions outcomes compared to posttest positive interactions outcomes for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within one school year or less ($M = 0.94, SD = 0.04$), within one to two school years ($M = 0.90, SD = 0.07$), and within more than two school years ($M = 0.92, SD = 0.06$) where the overall main effect of posttest ending positive interactions outcomes for individual students with identified disabilities was not statistically significant, ($F(2, 42) = 2.09, p = 0.14$). Because no significant main effect was found post hoc contrast analyses were not conducted.

**Research Question #7**

The seventh hypothesis for average time out frequency change pretest beginning program nine weeks compared to posttest ending program nine weeks for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program
within one school year or less, within one to two school years, within more than two
school years and were returned to less restrictive classroom placements are displayed in
Table 10. The seventh hypothesis was tested using chi-square ($X^2$). The results of $X^2$
displayed in Table 10 was not statistically different ($X^2(2, N = 49) = 1.78, p = .410 \ ns$) so
the null hypothesis of no difference or congruence for time out frequency change pretest
beginning program nine weeks compared to posttest ending program nine weeks was not
rejected for individual students with identified disabilities requiring an individual
behavior intervention plan who completed an elementary grades pro-social cognitive
behavioral skills program within one school year or less (average nine week pretest time
out frequency = 8, average nine week posttest time out frequency = 3), within one to two
school years, (average nine week pretest time out frequency = 12, average nine week
posttest time out frequency = 6), within more than two school years (average nine week
pretest time out frequency = 17, average nine week posttest time out frequency = 3).
Statistical equipoise at posttest indicates program effectiveness over time for all three
groups of students where posttest levels of behavior resulting in time out consequences
were consistent with return to less restrictive classroom placements.
Table 1

Demographic Information of Individual Students with Identified Disabilities Requiring an Individual Behavior Intervention Plan Who Completed an Elementary Grades Pro-social Cognitive Behavioral Skills Program Within One School Year or Less and Were Returned to Less Restrictive Classroom Placements.

<table>
<thead>
<tr>
<th>Student Number</th>
<th>Gender</th>
<th>Ethnicity</th>
<th>Age at Intake</th>
<th>Special Education Verification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>4 years, 11 months</td>
<td>ED</td>
</tr>
<tr>
<td>2.</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>5 years, 10 months</td>
<td>ED</td>
</tr>
<tr>
<td>3.</td>
<td>Female</td>
<td>White (Not Hispanic)</td>
<td>6 years, 7 months</td>
<td>ED</td>
</tr>
<tr>
<td>4.</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>9 years, 0 months</td>
<td>OHI- ADHD</td>
</tr>
<tr>
<td>5.</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>5 years, 1 month</td>
<td>ED</td>
</tr>
<tr>
<td>6.</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>5 years, 0 months</td>
<td>OHI- ADHD</td>
</tr>
<tr>
<td>7.</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>8 years, 0 months</td>
<td>ED</td>
</tr>
<tr>
<td>8.</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>10 years, 7 months</td>
<td>ED</td>
</tr>
<tr>
<td>9.</td>
<td>Male</td>
<td>Black (Not Hispanic)</td>
<td>7 years, 1 months</td>
<td>ED</td>
</tr>
<tr>
<td>10.</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>5 years, 6 months</td>
<td>ED</td>
</tr>
<tr>
<td>11.</td>
<td>Female</td>
<td>Asian</td>
<td>5 years, 6 months</td>
<td>ED</td>
</tr>
<tr>
<td>12.</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>9 years, 9 months</td>
<td>ED</td>
</tr>
<tr>
<td>13.</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>5 years, 1 months</td>
<td>ED</td>
</tr>
<tr>
<td>14.</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>5 years, 11 months</td>
<td>ED</td>
</tr>
<tr>
<td>15.</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>7 years, 11 months</td>
<td>ED</td>
</tr>
</tbody>
</table>

*Note.* ED = Emotional Disturbance; OHI = Other Health Impairment; ADHD = Attention Deficit with Hyperactivity Disorder
Table 2

Demographic Information of Individual Students with Identified Disabilities Requiring an Individual Behavior Intervention Plan Who Completed an Elementary Grades Pro-social Cognitive Behavioral Skills Program Within One to Two School Years and Were Returned to Less Restrictive Classroom Placements.

<table>
<thead>
<tr>
<th>Student Number</th>
<th>Gender</th>
<th>Ethnicity</th>
<th>Age at Intake</th>
<th>Special Education Verification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>5 years, 11 months</td>
<td>ED</td>
</tr>
<tr>
<td>2</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>7 years, 2 months</td>
<td>ED</td>
</tr>
<tr>
<td>3</td>
<td>Male</td>
<td>Black (Not Hispanic)</td>
<td>8 years, 2 months</td>
<td>ED</td>
</tr>
<tr>
<td>4</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>9 years, 8 months</td>
<td>ED</td>
</tr>
<tr>
<td>5</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>6 years, 2 month</td>
<td>ED</td>
</tr>
<tr>
<td>6</td>
<td>Female</td>
<td>White (Not Hispanic)</td>
<td>10 years, 9 months</td>
<td>ED</td>
</tr>
<tr>
<td>7</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>9 years, 2 months</td>
<td>ED</td>
</tr>
<tr>
<td>8</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>9 years, 11 months</td>
<td>ED</td>
</tr>
<tr>
<td>9</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>6 years, 7 months</td>
<td>ED</td>
</tr>
<tr>
<td>10</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>8 years, 7 months</td>
<td>ED</td>
</tr>
<tr>
<td>11</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>7 years, 0 months</td>
<td>ED</td>
</tr>
<tr>
<td>12</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>7 years, 9 months</td>
<td>ED</td>
</tr>
<tr>
<td>13</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>10 years, 7 months</td>
<td>OHI-ADHD</td>
</tr>
<tr>
<td>14</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>9 years, 8 months</td>
<td>ED</td>
</tr>
</tbody>
</table>

Note. ED = Emotional Disturbance; OHI= Other Health Impairment; ADHD = Attention Deficit with Hyperactivity Disorder
Table 3

Demographic Information of Individual Students with Identified Disabilities Requiring an Individual Behavior Intervention Plan Who Completed an Elementary Grades Pro-social Cognitive Behavioral Skills Program Within More than Two School Years and Were Returned to Less Restrictive Classroom Placements.

<table>
<thead>
<tr>
<th>Student Number</th>
<th>Gender</th>
<th>Ethnicity</th>
<th>Age at Intake</th>
<th>Special Education Verification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>6 years, 4 months</td>
<td>ED</td>
</tr>
<tr>
<td>2.</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>7 years, 11 months</td>
<td>ED</td>
</tr>
<tr>
<td>3.</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>6 years, 2 months</td>
<td>ED</td>
</tr>
<tr>
<td>4.</td>
<td>Female</td>
<td>White (Not Hispanic)</td>
<td>7 years, 4 months</td>
<td>OHI- ADHD</td>
</tr>
<tr>
<td>5.</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>8 years, 4 months</td>
<td>ED</td>
</tr>
<tr>
<td>6.</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>5 years, 11 months</td>
<td>AU</td>
</tr>
<tr>
<td>7.</td>
<td>Male</td>
<td>Black (Not Hispanic)</td>
<td>8 years, 4 months</td>
<td>ED</td>
</tr>
<tr>
<td>8.</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>5 years, 5 months</td>
<td>ED</td>
</tr>
<tr>
<td>9.</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>7 years, 0 months</td>
<td>ED</td>
</tr>
<tr>
<td>10.</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>5 years, 8 months</td>
<td>ED</td>
</tr>
<tr>
<td>11.</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>9 years, 4 months</td>
<td>ED</td>
</tr>
<tr>
<td>12.</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>8 years, 4 months</td>
<td>ED</td>
</tr>
<tr>
<td>13.</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>8 years, 8 months</td>
<td>ED</td>
</tr>
<tr>
<td>14.</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>8 years, 6 months</td>
<td>ED</td>
</tr>
<tr>
<td>15.</td>
<td>Male</td>
<td>White (Not Hispanic)</td>
<td>5 years, 5 months</td>
<td>ED</td>
</tr>
<tr>
<td>16.</td>
<td>Male</td>
<td>Black (Not Hispanic)</td>
<td>5 years, 10 months</td>
<td>ED</td>
</tr>
</tbody>
</table>

Note. AU = Autism; ED = Emotional Disturbance; OHI= Other Health Impairment; ADHD = Attention Deficit with Hyperactivity Disorder
Table 4

*Pretest Beginning Program Compared to Posttest Ending Program Percentage of On Task Outcomes for Individual Students with Identified Disabilities Requiring an Individual Behavior Intervention Plan who Completed an Elementary Grades Pro-Social Cognitive Behavioral Skills Program within One School Year or Less, within One to Two School Years, within More Than Two School Years and Were Returned to Less Restrictive Classroom Placements.*

<table>
<thead>
<tr>
<th>Source</th>
<th>Pretest</th>
<th>Posttest</th>
<th>d</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>M 0.88</td>
<td>SD (0.06)</td>
<td>M 0.92</td>
<td>(0.06)</td>
<td>1.114</td>
</tr>
<tr>
<td>B</td>
<td>M 0.81</td>
<td>SD (0.13)</td>
<td>M 0.88</td>
<td>(0.09)</td>
<td>1.1767</td>
</tr>
<tr>
<td>C</td>
<td>M 0.80</td>
<td>SD (0.08)</td>
<td>M 0.91</td>
<td>(0.06)</td>
<td>1.148</td>
</tr>
</tbody>
</table>

*Note.* A = Students Who Completed an Elementary Grades Pro-social Cognitive Behavioral Skills Program Within One School Year or Less; B = Students Who Completed an Elementary Grades Pro-social Cognitive Behavioral Skills Program Within One to Two School Years; C = Students Who Completed an Elementary Grades Pro-social Cognitive Behavioral Skills Program Within More than Two School Years. **p < .01, ***p < .001.
Table 5

*Pretest Beginning Program Compared to Posttest Ending Program Percentage of Following Directions Outcomes for Individual Students with Identified Disabilities Requiring an Individual Behavior Intervention Plan who Completed an Elementary Grades Pro-Social Cognitive Behavioral Skills Program within One School Year or Less, within One to Two School Years, within More Than Two School Years and Were Returned to Less Restrictive Classroom Placements.*

<table>
<thead>
<tr>
<th>Source</th>
<th>Pretest</th>
<th>Posttest</th>
<th>d</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>M = 0.87 (SD = 0.06)</td>
<td>M = 0.92 (SD = 0.05)</td>
<td>d = 1.355</td>
<td>t = 5.37</td>
<td>p = .00004***</td>
</tr>
<tr>
<td>B</td>
<td>M = 0.77 (SD = 0.14)</td>
<td>M = 0.88 (SD = 0.08)</td>
<td>d = 1.887</td>
<td>t = 5.26</td>
<td>p = .00007***</td>
</tr>
<tr>
<td>C</td>
<td>M = 0.76 (SD = 0.09)</td>
<td>M = 0.91 (SD = 0.06)</td>
<td>d = 1.502</td>
<td>t = 5.61</td>
<td>p = .00002***</td>
</tr>
</tbody>
</table>

*Note.* A = Students Who Completed an Elementary Grades Pro-social Cognitive Behavioral Skills Program Within One School Year or Less; B = Students Who Completed an Elementary Grades Pro-social Cognitive Behavioral Skills Program Within One to Two School Years; C = Students Who Completed an Elementary Grades Pro-social Cognitive Behavioral Skills Program Within More than Two School Years. 

***p < .001.
Table 6

Pretest Beginning Program Compared to Posttest Ending Program Percentage of Positive Interactions Outcomes for Individual Students with Identified Disabilities Requiring an Individual Behavior Intervention Plan who Completed an Elementary Grades Pro-Social Cognitive Behavioral Skills Program within One School Year or Less, within One to Two School Years, within More Than Two School Years and Were Returned to Less Restrictive Classroom Placements.

<table>
<thead>
<tr>
<th>Positive Interactions Outcome</th>
<th>Pretest</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>A</td>
<td>0.90</td>
<td>(0.06)</td>
</tr>
<tr>
<td>B</td>
<td>0.83</td>
<td>(0.11)</td>
</tr>
<tr>
<td>C</td>
<td>0.84</td>
<td>(0.09)</td>
</tr>
</tbody>
</table>

Note. A = Students Who Completed an Elementary Grades Pro-social Cognitive Behavioral Skills Program Within One School Year or Less; B = Students Who Completed an Elementary Grades Pro-social Cognitive Behavioral Skills Program Within One to Two School Years; C = Students Who Completed an Elementary Grades Pro-social Cognitive Behavioral Skills Program Within More than Two School Years. **p < .01, ***p < .001.
Table 7

*Results of Analysis of Variance Ending On Task Compared to Ending On Task Outcomes for Individual Students with Identified Disabilities Requiring an Individual Behavior Intervention Plan who Completed an Elementary Grades Pro-Social Cognitive Behavioral Skills Program within One School Year or Less, within One to Two School Years, within More Than Two School Years and Were Returned to Less Restrictive Classroom Placements.*

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>df</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>0.02</td>
<td>0.0083</td>
<td>2</td>
<td>1.57</td>
<td>0.22+</td>
</tr>
<tr>
<td>Within Groups</td>
<td>0.22</td>
<td>0.0053</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>On Task Outcome</th>
<th>Mean</th>
<th>(SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>A</em></td>
<td>0.92</td>
<td>(0.06)</td>
</tr>
<tr>
<td><em>B</em></td>
<td>0.88</td>
<td>(0.09)</td>
</tr>
<tr>
<td><em>C</em></td>
<td>0.91</td>
<td>(0.06)</td>
</tr>
</tbody>
</table>

*Note.* _A_ = Students Who Completed an Elementary Grades Pro-social Cognitive Behavioral Skills Program Within One School Year or Less; _B_ = Students Who Completed an Elementary Grades Pro-social Cognitive Behavioral Skills Program Within One to Two School Years; _C_ = Students Who Completed an Elementary Grades Pro-social Cognitive Behavioral Skills Program Within More than Two School Years.  
+ns.
Table 8

Results of Analysis of Variance of Ending Following Directions Compared to Ending Following Directions Outcomes for Individual Students with Identified Disabilities Requiring an Individual Behavior Intervention Plan who Completed an Elementary Grades Pro-Social Cognitive Behavioral Skills Program within One School Year or Less, within One to Two School Years, within More Than Two School Years and Were Returned to Less Restrictive Classroom Placements.

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>df</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>0.01</td>
<td>0.0068</td>
<td>2</td>
<td>1.47</td>
<td>0.24⁺</td>
</tr>
<tr>
<td>Within Groups</td>
<td>0.19</td>
<td>0.0046</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Following Directions Mean (SD)

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mean</th>
<th>(SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0.92</td>
<td>(0.06)</td>
</tr>
<tr>
<td>B</td>
<td>0.88</td>
<td>(0.08)</td>
</tr>
<tr>
<td>C</td>
<td>0.91</td>
<td>(0.06)</td>
</tr>
</tbody>
</table>

Note. A = Students Who Completed an Elementary Grades Pro-social Cognitive Behavioral Skills Program Within One School Year or Less; B = Students Who Completed an Elementary Grades Pro-social Cognitive Behavioral Skills Program Within One to Two School Years; C = Students Who Completed an Elementary Grades Pro-social Cognitive Behavioral Skills Program Within More than Two School Years.  
⁺ns.
Table 9

Results of Analysis of Variance Positive Interactions Posttest Compared to Ending Positive Interactions Outcomes for Individual Students with Identified Disabilities Requiring an Individual Behavior Intervention Plan who Completed an Elementary Grades Pro-Social Cognitive Behavioral Skills Program within One School Year or Less, within One to Two School Years, within More Than Two School Years and Were Returned to Less Restrictive Classroom Placements.

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>df</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>0.02</td>
<td>0.0075</td>
<td>2</td>
<td>2.09</td>
<td>0.137†</td>
</tr>
<tr>
<td>Within Groups</td>
<td>0.15</td>
<td>0.0036</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Positive Interactions Outcome

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0.94 (0.04)</td>
</tr>
<tr>
<td>B</td>
<td>0.90 (0.07)</td>
</tr>
<tr>
<td>C</td>
<td>0.92 (0.06)</td>
</tr>
</tbody>
</table>

Note. A = Students Who Completed an Elementary Grades Pro-social Cognitive Behavioral Skills Program Within One School Year or Less; B = Students Who Completed an Elementary Grades Pro-social Cognitive Behavioral Skills Program Within One to Two School Years; C = Students Who Completed an Elementary Grades Pro-social Cognitive Behavioral Skills Program Within More than Two School Years. †ns.
Table 10

Average Time Out Frequency Change Pretest Beginning Program Nine Weeks Compared to Posttest Ending Program Nine Weeks for Individual Students with Identified Disabilities Requiring an Individual Behavior Intervention Plan who Completed an Elementary Grades Pro-Social Cognitive Behavioral Skills Program within One School Year or Less, within One to Two School Years, within More Than Two School Years and Were Returned to Less Restrictive Classroom Placements.

<table>
<thead>
<tr>
<th>Group</th>
<th>Pretest</th>
<th></th>
<th>Posttest</th>
<th></th>
<th>X^2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Within One School Year or Less</td>
<td>8</td>
<td>(22)</td>
<td>3</td>
<td>(25)</td>
<td></td>
</tr>
<tr>
<td>Within One to Two School Years</td>
<td>12</td>
<td>(32)</td>
<td>6</td>
<td>(50)</td>
<td></td>
</tr>
<tr>
<td>More than Two School Years</td>
<td>17</td>
<td>(46)</td>
<td>3</td>
<td>(25)</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>37</td>
<td>(100)</td>
<td>12</td>
<td>(100)</td>
<td>1.78</td>
</tr>
</tbody>
</table>

\(^{+}ns.\)

Note. Observed verses Expected cell frequencies with df = 2 and a tabled value = 5.991 for p < .05.
CHAPTER FIVE

Conclusions and Discussion

The following conclusions and discussion may be drawn from the study for each of the seven research questions.

Research Question #1 Conclusion

The first hypothesis examined pretest beginning program compared to posttest ending program percentage of on task, follow direction, and positive interaction outcomes for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within one school year or less and were returned to less restrictive classroom placements.

Sub-Question 1a. Overall, pretest-posttest results indicated statistically significant behavioral on task outcomes improvement for individual students who completed the elementary grades pro-social cognitive behavioral skills program within one school year or less. At pretest the students in this group \((n = 15)\) were observed producing desired on task outcomes 88% of the time recorded on 15-minute fixed interval in class teacher observation point sheets and at posttest were observed producing desired on task outcomes 92% of the time recorded on 15-minute fixed interval in class teacher observation point sheets. These results indicate program intervention effectiveness for these students.

Sub-Question 1b. Overall, pretest-posttest results indicated statistically significant behavioral follow direction outcomes improvement for individual students who completed the elementary grades pro-social cognitive behavioral skills program one school year or less. At pretest the students in this group \((n = 15)\) were observed
producing desired follow direction outcomes 87% of the time recorded on 15-minute fixed interval in class teacher observation point sheets and at posttest were observed producing desired on task outcomes 92% of the time recorded on 15-minute fixed interval in class teacher observation point sheets. These results indicate program intervention effectiveness for these students.

**Sub-Question 1c.** Overall, pretest-posttest results indicated statistically significant behavioral positive interaction outcomes improvement for individual students who completed the elementary grades pro-social cognitive behavioral skills program within one school year or less. At pretest the students in this group (n = 15) were observed producing desired positive interaction outcomes 90% of the time recorded on 15-minute fixed interval in class teacher observation point sheets and at posttest were observed producing desired positive interaction outcomes 94% of the time recorded on 15-minute fixed interval in class teacher observation point sheets. These results indicate program intervention effectiveness for these students.

**Research Question #2 Conclusion**

The second hypothesis examined pretest beginning program compared to posttest ending program percentage of on task, follow direction, and positive interaction outcomes for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within one to two school years, were returned to less restrictive classroom placements.

**Sub-Question 2a.** Overall, pretest-posttest results indicated statistically significant behavioral on task outcomes improvement for individual students who completed the elementary grades pro-social cognitive behavioral skills program within
one to two school years. At pretest the students in this group \((n = 14)\) were observed producing desired on task outcomes 81% of the time recorded on 15-minute fixed interval in class teacher observation point sheets and at posttest were observed producing desired on task outcomes 88% of the time recorded on 15-minute fixed interval in class teacher observation point sheets. These results indicate program intervention effectiveness for these students.

**Sub-Question 2b.** Overall, pretest-posttest results indicated statistically significant behavioral following directions outcomes improvement for individual students who completed the elementary grades pro-social cognitive behavioral skills program within one to two school years. At pretest the students in this group \((n = 14)\) were observed producing desired following directions outcomes 77% of the time recorded on 15-minute fixed interval in class teacher observation point sheets and at posttest were observed producing desired following directions outcomes 88% of the time recorded on 15-minute fixed interval in class teacher observation point sheets. These results indicate program intervention effectiveness for these students.

**Sub-Question 2c.** Overall, pretest-posttest results indicated statistically significant behavioral positive interactions outcomes improvement for individual students who completed the elementary grades pro-social cognitive behavioral skills program within one school to two school years. At pretest the students in this group \((n = 14)\) were observed producing desired positive interaction outcomes 83% of the time recorded on 15-minute fixed interval in class teacher observation point sheets and at posttest were observed producing desired positive interaction outcomes 90% of the time recorded on 15-minute fixed interval in class teacher observation point sheets. These results indicate
program intervention effectiveness for these students.

**Research Question #3 Conclusion**

The third hypothesis examined pretest beginning program compared to posttest ending program percentage of on task, follow direction, and positive interaction outcomes for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within more than two school years, were returned to less restrictive classroom placements.

**Sub-Question 3a.** Overall, pretest-posttest results indicated statistically significant behavioral on task outcomes improvement for individual students who completed the elementary grades pro-social cognitive behavioral skills program within more than 2 school years. At pretest the students in this group \((n = 16)\) were observed producing desired on task outcomes 80% of the time recorded on 15-minute fixed interval in class teacher observation point sheets and at posttest were observed producing desired on task outcomes 91% of the time recorded on 15-minute fixed interval in class teacher observation point sheets. These results indicate program intervention effectiveness for these students.

**Sub-Question 3b.** Overall, pretest-posttest results indicated statistically significant behavioral follow directions outcomes improvement for individual students who completed the elementary grades pro-social cognitive behavioral skills program within more than two school years. At pretest the students in this group \((n = 16)\) were observed producing desired follow directions outcomes 76% of the time recorded on 15-minute fixed interval in class teacher observation point sheets and at posttest were observed producing desired follow directions outcomes 91% of the time recorded on 15-
minute fixed interval in class teacher observation point sheets. These results indicate program intervention effectiveness for these students.

**Sub-Question 3c.** Overall, pretest-posttest results indicated statistically significant behavioral positive interactions outcomes improvement for individual students who completed the elementary grades pro-social cognitive behavioral skills program within one school year or less. At pretest the students in this group \((n = 16)\) were observed producing desired positive interactions outcomes 84% of the time recorded on 15-minute fixed interval in class teacher observation point sheets and at posttest were observed producing desired positive interactions outcomes 92% of the time recorded on 15-minute fixed interval in class teacher observation point sheets. These results indicate program intervention effectiveness for these students.

**Research Question #4 Conclusion**

The posttest ending on task outcomes compared to posttest ending on task outcomes for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within one school year or less, within one to two school years, and within more than two school years where the overall main effect of posttest ending on task outcomes for individual students with identified disabilities was not statistically significant. Statistical equipoise at posttest indicates program effectiveness over time for all three groups of students where posttest levels of on task were consistent with return to less restrictive classroom placements.

At posttest for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within one school year or less, \((n = 15)\) were observed producing desired on task
outcomes 92% of the time recorded on 15-minute fixed interval in class teacher observation point sheets.

At posttest for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within one to two school years, \(n = 14\) were observed producing desired on task outcomes 88% of the time recorded on 15-minute fixed interval in class teacher observation point sheets.

At posttest for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within more than two school years \(n = 16\) were observed producing desired on task outcomes 91% of the time recorded on 15-minute fixed interval in class teacher observation point sheets.

**Research Question #5 Conclusion**

The posttest ending following directions outcomes compared to posttest ending following directions outcomes for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within one school year or less, within one to two school years, and within more than two school years where the overall main effect of posttest ending following directions outcomes for individual students with identified disabilities was not statistically significant. Statistical equipoise at posttest indicates program effectiveness over time for all three groups of students where posttest levels of following directions were consistent with return to less restrictive classroom placements.
At posttest for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within one school year or less, \( n = 15 \) were observed producing desired following directions outcomes 92% of the time recorded on 15-minute fixed interval in class teacher observation point sheets.

At posttest for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within one to two school years, \( n = 14 \) were observed producing desired following directions outcomes 88% of the time recorded on 15-minute fixed interval in class teacher observation point sheets.

At posttest for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within more than two school years \( n = 16 \) were observed producing desired following directions outcomes 91% of the time recorded on 15-minute fixed interval in class teacher observation point sheets.

**Research Question #6 Conclusion**

The posttest ending positive interactions outcomes compared to posttest ending positive interactions outcomes for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within one school year or less, within one to two school years, and within more than two school years where the overall main effect of posttest ending positive interactions outcomes for individual students with identified disabilities was not statistically significant. Statistical equipoise at posttest indicates program effectiveness over time for all three groups of
students where posttest levels of positive interactions were consistent with return to less restrictive classroom placements.

At posttest for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within one school year or less, \((n = 15)\) were observed producing desired positive interactions outcomes 94% of the time recorded on 15-minute fixed interval in class teacher observation point sheets.

At posttest for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within one to two school years, \((n = 14)\) were observed producing desired positive interactions outcomes 90% of the time recorded on 15-minute fixed interval in class teacher observation point sheets.

At posttest for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within more than two school years \((n = 16)\) were observed producing desired positive interactions outcomes 92% of the time recorded on 15-minute fixed interval in class teacher observation point sheets.

**Research Question #7 Conclusion**

The average time out frequency change pretest beginning program nine weeks compared to posttest ending program nine weeks for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within one school year or less, within one to two school years, within more than two school years and were
returned to less restrictive classroom placements was not statistically different so the null hypothesis of no difference or congruence for time out frequency change pretest beginning program nine weeks compared to posttest ending program nine weeks was not rejected.

For individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within one school year or less (average nine week pretest time out frequency = 8, average nine week posttest time out frequency = 3), within one to two school years, (average nine week pretest time out frequency = 12, average nine week posttest time out frequency = 6), within more than two school years (average nine week pretest time out frequency = 17, average nine week posttest time out frequency = 3). Statistical equipoise at posttest indicates program effectiveness over time for all three groups of students where posttest levels of behavior resulting in time out consequences were consistent with return to less restrictive classroom placements.
Discussion

When most elementary students enter school for the first time are able to use their language and cognitive abilities rather than aggression to arbitrate disputes (Hartup, 1996, Tremblay, 2000). Those students who do not curtail their aggressive and disruptive behavior in early elementary school are at a much higher risk to be involved in later criminal behavior or be diagnosed with conduct or antisocial personality disorders. The elementary grade pro-social cognitive behavioral skills program was designed to teach these students the skills they need to be able to display more desirable behaviors in school.

The elementary grade pro-social cognitive behavioral skills program used a combination of social skills instruction, replacement behavior training, cognitive behavioral interventions, and behavioral accelerative and behavior reductive interventions to support students in the program. The amount of time it took students to learn the skills and meet the criteria to return to a less restrictive setting varied but all of the students who completed the program had similar outcome improvements.

All three groups of students (1.within one school year or less, 2.within one to two school years, and 3.within more than two school years) who participated in the elementary grade pro-social cognitive behavioral skills program significantly improved their ability to display appropriate school behavior as measured by improvements to remain on task, following directions and positive interactions outcomes. Staff members taught students desirable replacement behaviors for the undesirable behaviors that were preventing them from being on task, following directions, and interacting positively with others. In the program, staff reinforced students as each student displayed a desirable
behavior. These reinforcers were typically verbal praise and token reinforcers in the form of points that could be exchanged for a tangible reward at the end of an agreed upon period of time. Early on in the program desirable behaviors were rewarded with verbal praise at a high rate, as the student progressed through the program the amount of verbal praise was faded. Additionally, the exchange rate for tokens a student needed to receive a tangible reinforcer was set low at the beginning of the program and increased as the student progressed through the program. The procedure of rich reinforcement to establish new or emerging behaviors followed by a fading of reinforcement has been successful in teaching and then maintaining behaviors at a high rate (Sundel & Sundel, 2004). The use of differential reinforcement of incompatible behaviors (DRI) was also a helpful technique to use to reinforce desired behaviors that were incompatible with the targeted problem behaviors.

All three groups of students (1. within one school year or less, 2. within one to two school years, and 3. within more than two school years) who participated in the elementary grade pro-social cognitive behavioral skills program where the overall main effect of posttest ending for on task, following directions and positive interactions outcomes for individual students with identified disabilities were not statistically significant. Statistical equipoise at posttest indicates program effectiveness over time for all three groups of students where posttest levels of on task, following directions, and positive interactions were consistent with return to less restrictive classroom placements. The average time out frequency change pretest beginning program nine weeks compared to posttest ending program nine weeks for individual students with identified disabilities requiring an individual behavior intervention plan who completed an
elementary grades pro-social cognitive behavioral skills program within one school year or less, within one to two school years, within more than two school years and were returned to less restrictive classroom placements was not statistically different so the null hypothesis of no difference or congruence for time out frequency change pretest beginning program nine weeks compared to posttest ending program nine weeks was not rejected.

Another component of the program was the use of behavior reductive techniques, specifically, time out from reinforcement. Time out from reinforcement is a contingency for undesirable behavior that resulted in substantial disruption to the educational environment. There was no significant difference in time out contingencies for individual students with identified disabilities requiring an individual behavior intervention plan who completed an elementary grades pro-social cognitive behavioral skills program within one school year or less (average nine week pretest time out frequency = 8, average nine week posttest time out frequency = 3), within one to two school years, (average nine week pretest time out frequency = 12, average nine week posttest time out frequency = 6), within more than two school years (average nine week pretest time out frequency = 17, average nine week posttest time out frequency = 3). Statistical equipoise at posttest indicates program effectiveness over time for all three groups of students where posttest levels of behavior resulting in time out consequences were consistent with return to less restrictive classroom placements.

Implications for practice. Students who enter elementary school with high levels of disruptive and aggressive behaviors have an increased risk of school failure and poor academic and behavioral outcomes well into their elementary career (Kim-Cohen et
There is a growing body of research that theorizes there are developmental trajectories for children who display early on-set aggressive behaviors that later result in significant antisocial behaviors (Moffitt, 1993; Patterson et al., 1989; Tremblay et al., 2004; Vitaro et al., 2000). Early intervention in the form of an elementary grade pro-social cognitive behavioral skills program may improve their behavioral outcomes and allow students to enter a different developmental trajectory with better adult outcomes.

The elementary grade pro-social cognitive behavioral skills program had students who fit into three naturally formed groups (students who completed the elementary grade pro-social cognitive behavioral skills program 1.within one school year or less, 2.within one to two school years, and 3.within more than two school years, and returned to a less restrictive setting) that shared some of the characteristics of individuals in development trajectories described by Moffitt (1993), Patterson et al. (1989) and Campbell et al. (2006). All of the students in the elementary grade pro-social cognitive behavioral skills program had a history of early on-set disruptive and aggressive behaviors prior to entering the pro-social cognitive behavioral skills program. Students in each of the groups benefited from the behavior accelerative and behavior reductive interventions used in the elementary grade pro-social cognitive behavioral skills program and were able to return to a less restrictive setting.

Public schools are required to have a continuum of special education placement options to serve a student with a disability. The student is to be placed in a program or receive their services in the least restrictive setting while still providing the student with a free appropriate public education. If a school district cannot provide the service or placement for a student in their district, they must contract with other school districts or
agencies for this placement or service. When a school district contracts for services or placements, they lose control over some aspects of the student’s program. If the school district does not have direct oversight of the contracted program or service provider they will not have control over day-to-day instructional, curricular and behavioral intervention decisions the program or provider makes for the student. Contracted placements outside of the school district also prevents the student from attending school with students from their neighborhood, making it difficult for the student to develop age appropriate relationships with students in their neighborhood.

An elementary grade pro-social cognitive behavioral skills program provides school districts a viable placement option for students with early onset disruptive and aggressive behaviors without having to send the students to a program outside the district. This allows the school district to maintain control over the day to day instructional, curricular and behavioral intervention decisions so when the student returned to a less restrictive setting he/she can be reintegrated quickly. This arrangement also allows the district to use normally developing peers to be role models to reinforce skills development. When the elementary grade pro-social cognitive behavioral skills program is located in the neighborhood school it can be used to strengthen the student’s relationship with neighborhood children.

This type of service delivery model has the potential for allowing school districts to educate students with early onset disruptive and aggressive behaviors in their local school district while decrease the educational interruptions in general education classroom. Creating an elementary grade pro-social cognitive behavioral skills program is often a better option for a school district then contracting the service from service
provider and losing control over day to day instructional, curricular, and behavioral intervention decisions the program or provider makes for students.

**Implications for policy.** Students with early on-set of aggressive and disruptive school behavior interfere with their own learning and the learning of others (Farmer et al., 2010). Public schools are required to provide educational and behavioral interventions necessary for students with disabilities to receive a free appropriate public education. Public schools are required to have a range of placement options available to meet the needs of all students. Public schools are also required to provide educational and behavioral programs to students in the least restrictive setting where students are able to progress in the general curriculum. A typical continuum of educational settings for a public school might include providing support of a student in the general education classroom by providing accommodations or direct support from a special education teacher or para-professional, pull out services provided in a resource setting, a segregated classroom, a contracted program outside the school district, sometimes referred to as a special day school, a residential school, and homebound or hospital setting (Fuchs, Fuchs, & Stecker, 2010). For some students, the least restrictive setting is placement in the general education setting with educational and behavioral supports while for other students a segregated setting with highly structured educational and behavioral interventions is the least restrictive setting to ensure a free appropriate public education.

In the continuum of educational placements the elementary grade pro-social cognitive behavioral skills program is more restrictive than pull out services but not as restrictive as a contracted program. When placing students in a restrictive setting it is imperative that IEP teams ensure that students are educated in the least restrictive
environment where they continue to receive a free appropriate public education. Before placing a student in an elementary grade pro-social cognitive behavioral skills program the district will have to ensure that less restrictive options are not viable to provide the student with a free appropriate public education. However, if this level of service is appropriate the elementary grade pro-social cognitive behavioral skills program is an effective program for improving behavioral outcomes for students with early on-set aggressive and disruptive behaviors. School districts may want to closely monitor students’ time in the program to ensure that they do not remain in a restrictive setting longer than needed to teach the replacement skills necessary to be successful in a less restrictive setting.

**Implications for further research.** The elementary grade pro-social cognitive behavioral skills program was found to be successful for students with early on-set disruptive and aggressive behaviors. All three groups of students (students who completed the elementary grade pro-social cognitive behavioral skills program (1.within one school year or less, 2.within one to two school years, and 3.within more than two school years, and returned to a less restrictive setting) showed significant improvement to their ability to display appropriate school behavior as measured by improvements in remain on task, following directions and positive interactions outcomes.

While the elementary grade pro-social cognitive behavioral skills program was success at returning students to a less restrictive setting, some students participated in the program for more than two years. Further research is needed to determine if any of the intervention used in this program can be implemented in a less restrictive setting with similar results, thereby decreasing the need for restrictive settings for students.
The elementary grade pro-social cognitive behavioral skills program only served students who were school-aged. Further research needs to be done to determine if this intervention model would be effective with pre-school students. Early intervention has been shown to be effective in other areas, research should be completed to determine if the interventions used in the elementary grade pro-social cognitive behavioral skills program would also be effective with pre-school students with early on-set disruptive and aggressive behaviors.

Students who entered the elementary grade pro-social cognitive behavioral skills program all had a history of early on-set disruptive and aggressive behaviors in school. All of the students’ IEP teams determined that these students were not receiving a free appropriate public education in a less restrictive setting. Further research should be completed to determine which pre-referral indicators are most useful in determining how long it will take students to complete the program. If program staff are able to determine a reliable projected length of stay in the program based on pre-referral data then programs resources could be allocated more efficiently.

Finally, the elementary grade pro-social cognitive behavioral skills program study only examined the students’ performance in the program. Further research on long term outcomes for these students as they progress through school is needed to determine if the program has long term effect on ameliorating the developmental trajectories for children who display early on-set aggressive behaviors.
References


Gresham, F. M. (1997). Social competence and students with behavioral disorders: Where we’ve been, where we are, and where we should go. *Education and Treatment of Children, 20*, 233-249.


disabilities: Efficacy of a sustained school engagement procedure. *Exceptional
Children, 65*(1), 7-21.


Spence, S. H. (2003). Social skills training with children and young people: Theory,

Spencer, A. M. (2009). School attendance patterns, unmet educational needs, and
truancy: A chronological perspective. *Remedial & Special Education, 30*(5), 309-
319.

Stahr, B., Cushing, D., Lane, K., & Fox, J. (2006). Efficacy of a function-based
intervention to decrease off-task behavior exhibited by a student with ADHD.
*Journal of Positive Behavior Interventions, 8*, 201–211.


Sugai, G., & Lewis, T. J. (1996). Preferred and promising practices for social skills

violence: The use of office discipline referrals to assess and monitor school-wide
discipline interventions. *Journal of Emotional & Behavioral Disorders, 8*(2), 94.


