

Explicit Instruction: Does Teaching Executive Functioning  
Skills Change the Behavior of Students with ADHD?

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## Abstract

This project was designed to evaluate the effectiveness of adding targeted instruction using a social skills training curriculum to already existing behavioral supports for student with Attention Deficit Hyperactivity Disorder (ADHD). This intervention was implemented in a mild to moderate district run special day class, and two students with ADHD were the target students for this study due to their ongoing externalizing behaviors. Their behaviors were initially collected using ABA methodology to determine and define the most prominent issues in the classroom. From there, skills were selected that would support the decrease of the behavior. Data collection included ongoing frequency counts of targeted behavior, analysis of existing classroom behavior contract, and surveys given to the students before and after the intervention. This intervention resulted in the improvement of the targeted behavior, a noted increase of independence and decrease of prompt-dependent behavior, and student insight into their actions in the classroom.

Key words: Attention Deficit Hyperactivity Disorder, social skills training, behavior interventions, *Skillstreaming*

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## Chapter 1

My interest in working with improving the social and classroom preparedness skills of students exhibiting symptoms of Attention Deficit Hyperactivity Disorder (ADHD) has grown steadily since becoming a special education teacher. I have worked with quite a few students with this disability and have found ADHD to be one of the most complicated disabilities to face, because it can impact a student in so many aspects of their daily life. Part of this actually is because the disorder is so individualized (Wender, 2000). Some students may be inattentive and disorganized, while others are aggressive and hyperactive (DuPaul & Stoner, 2003). We tend, as professionals, to focus on those who suffer from impulsive/hyperactive type marked by excessive energy and poor regulation of their emotions and impulses because their behavior is more apparent and problematic in the classroom; but students with ADHD are impacted in a variety of ways (Hinshaw & Ellison, 2015; Wender, 2000). As a teacher it is challenging to come up with plans for students with ADHD without the use of trial and error, which is a long process; it also becomes complicated as students with this disorder can quickly become bored of their incentives.

Impulsive behaviors stemming from the disability impact a student's ability to deal with social situations. I have seen some students with ADHD who have the academic skills and ability to spend their entire day in a general education classroom; however, their teachers can easily point out their desk by the mess surrounding it and often share concerns of missing or incomplete work. Other students are so distracted, their learning is impacted and they actually fall significantly behind in their basic academic skills. In the last five years, I have assisted multiple

students crying on the playground, or worse, dealing with the aftermath of a physical altercation due to a social misunderstanding and poor impulse control.

### **Problem Statement**

My intention to focus on Attention Deficit Hyperactivity Disorder and interventions to help children adjust came from a review of my class list for the 2016-2017 school year. I had taken over a position as a Special Day Class Teacher and was meeting with my special education director and the previous teacher of the class to discuss student needs for the year. The class was mild to moderate 3<sup>rd</sup>-6<sup>th</sup> grade special education classroom. One student in particular I had heard about frequently even before this meeting. His popularity and infamous habit of spending the afternoon in the office led me to believe that it would be important for me to focus on ADHD and how to best serve those students with this disability. By the end of September, 2017, three students had been assigned to my class with the designation of ADHD. According to their Individualized Education Plans, their symptoms impeded their ability to access a general education curriculum by such an extreme extent that they needed to be in a smaller setting: a self-contained special education classroom.

In the smaller classroom setting, while clear procedures and a highly structured classroom did improve behavior, I began to have concerns regarding externalizing and impulsive behaviors of these students when special education help was not available; such as during computer time when the classroom teacher and the paraprofessional have arranged to have their monthly check meeting. While the computer teacher was willing to accommodate this time, the times the paraprofessional is not there the computer teacher reports excessing talking, off-task behavior, and shouting across the room.

Additionally, I saw examples of learned helplessness, impulsivity, and inability to maintain appropriate classroom and recess behavior when given space to make their own choices when given opportunities to be in a setting with less structure. For example, when an adult was not immediately available on a field trip for less than five minutes, one student began running around and throwing a football in a historical building and brought negative attention to himself from adults and peers. This lack of maintaining the appropriate behavior was also apparent when substitute teachers or paraprofessionals work with the students. Students would start exhibiting more externalizing behaviors such as negotiating, excessive talking, rule-breaking, and work avoidance.

I decided that if I want these students to become successful adults, I need to give them the tools to be successful on their own, especially when an adult supervisor may not be immediately present. I am looking at the specific social skills that students generally need to be successful in school. This may include knowing when it is their turn to talk, following the directions of the adults, raising their hand appropriately or communicating with peers and adults. The question I set out to explore is two-fold: What are the skills that can help students with ADHD be successful in school and how do students learn these basic skills?

### **Social Skills Development and ADHD**

In my previous position, I worked with several students on the autism spectrum who were being mainstreamed in a general education classroom. There were many resources available that gave explicit instruction on how to improve their social and executive functioning deficits. This included the Social Thinking strategies created by Michelle Garcia Winner. Some students used *Zones of Regulation* (Kuypers & Winner, 2011) to work on regulating their moods with the aid of visuals when working with the occupational therapist. The speech and language pathologist

and I worked together to run small groups that utilized similar curriculum that helped students on the spectrum understand that other people have thoughts about them, and how they behave in the world affects those thoughts. These programs helped us to provide tools for students in understanding social rules in their mainstreamed setting.

However, the interventions are not as clear with students with ADHD students. Often, when working with students with Attention Deficit Hyperactivity Disorder, the largest problem was getting students to apply the tools provided in social skills curriculum from our small group. They could often on the first try provide the correct answer, but in the general education environment fail to follow through with the expectation of any social lessons. This is the same concern found in the research. Often it is the impulsivity that that the student struggles to overcome, (Antshel & Remer, 2003; Barkley, 1997) which is very challenging to actually address through teaching.

However, according to the seminal research by Barkley (1997), students with ADHD benefit from knowing direct rules they are to follow. I began to wonder that perhaps we cannot fix the impulsivity, but we can at least give students a base set of skills to follow. This caused me to think about social skills training. Social skills training (SST) is an intervention that specifically focuses on prosocial skills students need for to interact socially (Mikami, 2015). Clearly stated by the author of *Skillstreaming*, Ellen McGinnis, “For elementary-age students, this means skills to successfully navigate their school environments, follow teacher expectations, deal with peer and adult conflict, and deal with the many feeling typical of students in this age group” (2011, p. 2). Social skills programs give step-by step directions for students to follow to access their higher-level thinking skills, such as dealing with aggression, finishing a task, and following directions (McGinnis, 2011).

However, the research on the subject of social skills training as a way to improve skills of students with ADHD does not indicate a high success rates (de Boo & Prins, 2007). Studies show mixed results for the effectiveness of implementing SST and the effectiveness of changing behaviors of students with ADHD. Theories for why this might be are that SSTs can't address the impulsivity that is prevalent in this population, and generally investigators do not target specific behavior that is most relevant to the students (Antshel & Remer, 2003; Maag, 2006).

However, this actually encouraged my research in this area. One study, by Antshel and Remer (2003) was not able to support the efficacy of SSTs for children with ADHD. During this study, therapists worked with students in 90 minute sessions once a week for eight weeks in a clinical setting. Though some positive reports came from parents, there was not a significant behavior change to prove the effectiveness of SSTs for this population according to the researchers. The authors of this study had theories for why there were not strong positive results, but what stood out the most is the idea that the curriculum could not address impulsivity.

Unfortunately, I also cannot address fully the impulsivity that is apparent in my students with ADHD either. As we will explore in the literature review, some medications can address impulsivity that may impact the effects of social skills training and allow for a higher benefit, but in my role as a teacher, that is not an option that is available to me as a form of treatment. However, I can address the impulsivity in some ways, as their special education class is arranged in a way that is highly structured with appropriate breaks that allow students' impulsivity to decrease. Additionally, they have been in this classroom for the entire school year and in this time, they have learned the expectations and structure of the class, which may yield different results than an intervention set in an unfamiliar setting.

Finally, I had to choose the curriculum that I thought would be most effective. For my students, I needed a program that assists with the day-to-day tasks students need in a school setting. This is what I found in *Skillstreaming* (Research Press, 2017). *Skillstreaming* works on the everyday skills such as saying no, finishing an assignment, in a way that is broken down into basic and attainable steps that are easy to follow.

Currently, practices used in my classroom to address the issues with ADHD are an extremely structured program and behavior modification. Behavior modification is a highly effective and proven method for addressing behavioral problems, including students who suffer from ADHD (Fabiano, Pelham, Coles, Gnagy, Chronis-Tuscano, & O'Connor, 2009). Behavior modification is the intervention following Applied Behavioral Analysis, which is the practice of observing and manipulating the environment to prevent triggers, otherwise known as antecedents, students may encounter in a classroom that could influence behavior (Fabiano et al., 2009; Lane, Weisenback, Little, Phillips & Wehby, 2007; Shapiro, 2000). During this observation, plans are created in order to find reinforcements and consequences that influence the behavior, implementing the practicing of modifying behavior. This is the same practice that is present in my classroom. When appropriate, students in this setting have been observed throughout the year and plans have been created to address their behavior.

### **Research Questions**

While the results are varied on how effective social skills training is, I do see a need in my classroom to explicitly teach students basic skills they are missing, especially the skills they need to be the most successful in a classroom setting. I am also interested in the results of the training after students have been in a setting (their classroom) for an extended period of time, where basic behavior management as well as group expectations have been clearly established

well in advance of the intervention. Additionally, according to the research, behavior modification is an evidence-based practice that numerous studies have proven to be an effective treatment for students with ADHD (Fabiano et al., 2009). It is here that teachers and other professionals manipulate the environment and increase consequences for students to increase or decrease a desired behavior (Fabiano et al., 2009). This is an essential part of the supports students with ADHD need beyond learning social skills to address their impulsive and externalizing behaviors.

In summation, based on the information I have found about social skills training, I do not think it can work in a vacuum, it needs to be part of an ongoing behavior management program in a structured environment students are familiar with. I do think that this tool will be an asset to these students and provide training in areas of recorded deficits. The research questions I seek to explore are: Will providing the supplemental social skills training program in a class with behavioral supports decrease targeted negative behaviors of students with ADHD in a special education classroom? How will students perceive their progress during this intervention? Finally, will social skills training improve their overall behavior addressed in the already existing behavior system?

### **Significance of Research**

During my credential program, classroom management was an ongoing discussion. Some important lessons I learned were to make classroom rules clear to the students and positively framed: instead of telling students what you don't want them to do (no shouting) tell students what you want them to do (raise your hand). I learned rules should be positively framed to tell students what teachers want them to do because simply telling students what not to do does not give clear directions to successfully follow. Additionally, during my time in the credential

program, my professors recommended in order to avoid power struggles with students, students should know what your expectations are and the negative and positive consequences tied to those expectations.

I feel this relates closely to students with ADHD. According to Barkley (1997), children with ADHD have deficits in their problem-solving abilities, and struggle to make sense out of situations in which they do not have an answer to their problem. I believe we can help these students by targeting which areas they do not have appear to have the appropriate skills and provide explicit lessons on what is expected from them. While it is true we cannot prepare students for the expectations for every situation they will encounter by using Applied Behavioral Analysis with social skills training, perhaps we can target the rules the students are most likely missing, and can improve the quality of their education.

My thesis is that by adding a curriculum that explicitly teaches executive functioning skills to a special education class, the externalizing behaviors of students who have been diagnosed with Attention Deficit Hyperactivity Disorder will decrease. This curriculum will be used to supplement that existing behavioral modification within the classroom. The overall goal of this study is to examine if teaching students executive functioning skills through a social skills training curriculum will benefit students with ADHD.

As a special education teacher, I feel this population is in dire need of interventions to improve the quality of their education because it may change the quality of life for these students. The trajectory for students with ADHD can be very dim, as there are higher rates of school failure, drug and alcohol addiction, and even incarceration (Barkley, 1997; DuPaul & Stoner, 2003). I know that there are factors I may not be able to change in the lives of these

children, but I feel it is incumbent on me to find interventions that will set up these students for academic and social success as best I can.

## Chapter 2: Literature Review

### Effects of ADHD on School and Social Functioning

Attention-Deficit Hyperactivity Disorder (ADHD) is a common issue in schools; though the statistics vary slightly, it is estimated that 3-7 percent of children are diagnosed with ADHD (APA, 2000) making it a highly concerning and diagnosed problem for individuals, beginning in their childhood (Gureasko-Moore, DuPaul & White, 2006; Harpin, Mazzone, Raynaud, Kahle, & Hodgkins 2016) with lifelong effects. Attention Deficit Hyperactivity Disorder is a hereditary medical condition (Wender, 2000). The symptoms described in the literature are abnormally high amounts of activity and impulsivity and decreased amounts of attention (DuPaul, Eckert, & Vilaro 2012; Humpreys, Galán, Tottenham & Lee 2016). The important words here to emphasize are *abnormally high*. Dr. Paul Wender, who was a distinguished author in the study of ADHD, cautioned his readers against overanalyzing their child when reading his book because all children are inattentive, hyperactive, and impulsive. The distinction for children with ADHD is that the occurrences of this type of behavior are especially pervasive and extreme (Wender, 2000). In fact, in order to be diagnosed with ADHD, the behavior must be present across multiple settings, such as school and home, and be present since the age of 12 or younger (Barkley, 2015; DuPaul & Stoner, 2003).

How the disorder is manifested changes from person to person (Hinshaw & Ellison, 2015; Wender, 2000). There are three different categories for those with ADHD: inattentive type, hyperactive type, and combined type (Barkley, 2015; DuPaul & Stoner, 2003; Hinshaw & Ellison, 2015). Different individuals fall into the separate categories. According to their discussion of the Diagnostic and Statistical Manual of Disorders (DSM-V) created by the American Psychological Association, DuPaul and Stoner (2003) state that there nine symptoms

for inattentive type and nine for hyperactive, and a person must have six of these nine to be diagnosed with ADHD. The different combinations possible are quite high, again making this a very individualized disorder (DuPaul & Stoner, 2003). Additionally, many persons with Attention Deficit Hyperactivity Disorder also have other disabilities and disorders in conjunction with their ADHD. This includes learning disorders, oppositional defiant disorder, and conduct disorder (DuPaul & Stoner, 2003; Wender, 2000). These additional hurdles are factors to consider when working with students with ADHD.

Much of the research regarding Attention-Deficit Hyperactivity Disorder refers to a seminal study by Russell Barkley written in 1997, a prominent researcher on this subject and Clinical Psychologist. In his research, Barkley proposes the main difficulty with Hyperactive-Type ADHD is it in an impairment of a person's ability to stop or control a response, otherwise known in the research as behavioral inhibition (Barkley, 1997). Without the ability to stop or delay a response, there is less time to think about the consequences behind an action (Barkley, 1997). While behavioral inhibition was already an area of concern, Barkley further explains that this deficit indirectly affects higher-level thinking such as problem-solving, goal-setting and self-regulation, areas described under the umbrella of executive functioning by not allowing time to make decisions that will benefit the person in the long-term (Barkley, 1997; Rapport, Orban, Kofler, & Friedman 2013); without the process of inhibition and thinking through one's actions, one cannot set goals, problem-solve or self-regulate effectively (Barkley, 1997).

In his more recent writings, Barkley calls this "emotional impulsivity" describing the speed and the increased chance that a person will most likely have a large negative response to a situation (Barkley, 2015). Executive functioning are "self-regulation" tools that individuals rely on to make a decision to change the course of a behavior to achieve a more desired result. These

include behavioral inhibition, working memory, self-regulation, playing out different scenarios in our mind (a term Barkley refers to as reconstruction), and self-awareness (Barkley, 2015). A lack of these skills will result in a lack of behavioral inhibition and self-regulation and will inhibit the individual to make productive choices for the long term.

## **Effects of ADHD on Executive and Social Functioning and Resulting Educational**

### **Outcomes**

Unfortunately, for students with Attention-Deficit Hyperactivity Disorder, they face many issues in the school system as well as in their social lives. As stated above, many students who are diagnosed have learning disabilities as well as behavioral disorders such as oppositional defiant disorder (DuPaul & Stoner, 2003; Wender, 2000). Students with ADHD also display higher levels of deficits in executive functioning which impacts their ability to complete assignments, study for exams and plan for long term assignments (DuPaul & Langberg, 2015). Finally, students have higher rates of being socially rejected by their peers (DuPaul & Stoner, 2003; Wender, 2000). All these factors increase the chances of a negative school environment for a student with ADHD. The negative effects of this disorder on social and school success are trouble with executive functioning, impact on academic outcomes and social functioning.

**Executive functioning.** Executive functioning is the higher-level thinking skills discussed above in the work by Barkley (1997). Some key components of executive functioning skills are set-shifting (moving from one task to another), working memory, self-regulation, and problem solving (Rapport et al., 2013). Executive function is problem-solving in order to reach future goals, which includes inhibiting or deferring responses, plan of action, and mentally representing the steps toward a task, including the final goal (Welsh & Pennington, 1988).

These are also the skills needed to be successful in school. Gureasko-Moore et al. (2006) discuss the importance of classroom preparation skills, such as attending class regularly and promptly, being prepared to participate in class, and appropriately completing class assignments and projects. Students have to self-regulate, such as waking up in time to get to class on time, problem-solve when given assignments that require multiple steps or present new and unfamiliar material, and they would need to be able to move from one task to the next in an appropriate amount of time. These deficits in executive functioning skills create issues such as lost assignments, an inability to keep track of and turn in homework, and lack of organization and planning for larger assignments (DuPaul & Stoner, 2015; Langberg, Epstein & Graham, 2008). Lacking organization skills means not only lacking the ability to manage the materials needed for school, such as the physical assignments, but also time, as in knowing how to manage time needed in order to work on assignments (Langberg, Epstein, Becker, Girio-Herrera & Vaughn, 2012).

There are also differences in secondary and elementary school children as well. While missing materials and homework are present in elementary school children, middle school students are expected to engage in more executive functioning tasks such as planning long assignments, note-taking, and studying for tests (DuPaul & Langberg, 2015). Citing Steinberg (2005), DuPaul and Langberg also ascertain that this is problematic as while students in middle school are expected to increase their executive functioning skills for which there is already a clear deficit, this is also the age where parental and teacher support and intervention tend to decrease (DuPaul & Langberg, 2015), and more demands are placed while structure diminishes (Young & Amarasinghe, 2010). Finally, individuals with ADHD are more likely to drop out of school and struggle academically, especially in secondary education (DuPaul et al., 2012;

Gureasko-Moore et al., 2006), in which they are expected to have more academic independence and less teacher modification and intervention.

**Academic outcomes.** Overall, children with ADHD have significantly lower academic outcomes even though students with ADHD generally do not differ significantly in their intelligence quotient scores and cognitive functioning (DuPaul, et al., 2012; DuPaul & Stoner, 2015). DuPaul and Stoner, 2015 discuss the study of the long-term outcomes of students with ADHD by Barkley, Fischer, Smallish and Fletcher (1990), in which almost 1/3 of students with this disorder dropped out of school. Barkley et al. continued to follow students with ADHD Hyperactive (ADHD-H) type and in 2006 published their findings after following students for over 13 years. The results indicate significant differences in life activities when comparing persons with ADHD to a control group, especially in regards to education. Forty-two percent of students with ADHD-H had been retained in school while in the control group only 13% had been retained. Sixty percent had been suspended compared to 18%; only 68% graduated high school while 100% of the control group graduated high school and only 21% of students with ADHD were enrolled in college while 78% of the control group were enrolled in college (Barkley, Fischer, Smallish & Fletcher, 2006). This indicates substantial differences in educational outcomes when comparing students with ADHD and neuro-typical students.

In schools, students with ADHD can have two areas that impacts school performance: skill deficits and performance deficit. Both cognitive factors and classroom performance or behavior impacts scholastic achievement (Rapport, Scanlan & Denney, 1999). Skill performance deficits for students in school can look like off task behavior and lack of productivity (DuPaul & Langberg, 2015) and incomplete tasks (Wender, 2000). Lack of control in order to attend to or

complete classwork will inevitably lead to lower academic achievement, as well as lowered ability to learn and perform needed academic skills.

In relation to cognitive factors, students with ADHD also traditionally have significant impairments in reading, math, spelling and writing compared to their peers (Fraizer, Youngstrom, Glutting, & Watkins, 2007). In addition, up to 30% of students with ADHD also have a learning disability (DuPaul & Langberg, 2015; DuPaul & Stoner, 2003; Wei, Yu, & Shaver, 2014; Wender, 2000), creating a skill deficit in an area such as reading or math. While it is not clear if the learning disability is caused by the ADHD, it does mean this population comes to school already at a disadvantage. Research has indicated the highest rates of discrepancy are in reading (Frazier et al., 2007), but Mayes, Calhoun and Crowell (2000) found that many studies exclude writing as a factor when considering a student learning disabled. In their sample, they found when including students who had ADHD and qualified as a student with learning disability in writing, the amount of students was almost double than those with a reading or mathematical disability. This is important to note because often writing is overlooked as a disability, but writing is a frequent expectation in a school setting, and is obviously a hindrance to the academic success of students with ADHD.

An additional perspective to consider is that of the student. Brook and Boaz (2005) interviewed high school students with ADHD and learning disabilities and found that over 50% of students felt teachers and parents did not understand their difficulties and frequently attributed their academic struggles with lack of motivation. Furthermore, students with both ADHD and learning disabilities had continued lower reading, social and behavioral skills than students who were learning disabled and did not have ADHD (Wei et al., 2014), and students with ADHD who were not learning disabled performed lower on achievement tests than their peers (Mayes et al.,

2000). These findings suggest that students with ADHD both with and without learning disabilities have real deficits in school-related skills that are resulting in low academic achievement while simultaneously students are feeling a lack of understanding and support from the adults around them.

Often, individuals with ADHD are also diagnosed with behavioral disorders which disrupt their academic progress (DuPaul & Stoner, 2003; Wender, 2000). Two disabilities seen in students with ADHD are Oppositional Defiant Disorder and Conduct Disorder. It was found that though these disorders are generally not associated with aggressive behavior, when combined with ADHD subjects had higher ratings of delinquent and aggressive behaviors (Connor & Doerfler, 2008). Mental health issues such as anxiety and depression were present with subjects with comorbid diagnosis as well as issues with teachers and peers (Connor & Doerfler, 2008; Harada, Yamazaki & Saitoh, 2002). These are factors that would negatively influence school participation.

While it can be expected that students with behavioral struggles in this area are at risk of academic failure, the literature seems to indicate that this is less of a concern than inattention in regards to academic achievement (DuPaul & Langberg, 2015; Langberg, Molina, Arnold, Epstein, Altaye, Hinshaw, Swanson, Wigal & Hechtman, 2011). One study to highlight this concern for students with inattentive type is the longitudinal study of the impacts of early ADHD symptoms in children over time by Langberg et al. (2011). This team analyzed the factors a child faces in a school such as grades, classroom performance, homework completion, materials management, special education services, medication use, and background information such as parent education over time. They found that while often symptoms do decrease over time, students continue to struggle in school because the inattention impacts their ability to manage

their homework materials and their classroom performance and they have not learned the skills necessary to be successful in school (Langberg et al., 2011). However, interventions clearly targeting organization and management of homework materials have shown to increase the grade point averages of students with ADHD, however, most interventions do not address organization (Langberg et al., 2012). What is difficult about inattention is that the onus is on the adult to ensure the child is engaging (Wender, 2000). While adults can be supportive of students, eventually students have to find ways to learn so they can themselves build their school-related skills that they will need as they move to secondary education or even college.

**Social functioning in school and its impact.** Finally, in addition to lack of organizational skills and academic achievement, children with ADHD have higher rates of social issues in school such as peer rejection, which negatively impacts their relationship with school and long-term outcomes. Several theories are found in the literature for why children with ADHD may struggle with social interaction. Children with ADHD have a significant lack emotional regulation needed when interacting with others (Antshel, & Remer, 2003) and have difficulty relating to their peers (Tseng, Kawabata, Gau, & Crick, 2014). Inattentiveness impacting the learning of rules during games and other social learning moments interferes with a child's ability to interact (Humphreys et al., 2016). Children with ADHD do not have strong friendship making skills nor the ability to take the perspective of another (Mikami, 2010). The social skills issue is particularly a problem for the more inattentive ADHD children, who are likely to be ignored or thought of as different from the other kids (Hinshaw & Ellison, 2015) and it is actually inattention versus hyperactivity that has shown to have longer effects on lack of friends and peer rejection (Tseng et al., 2014) Finally, since children with ADHD are generally

emotionally immature (Wender, 2000), their actions may not match the expectations of those in their peer group.

Based on the literature referenced above, there is the possibility that lack of executive function may play a role in negatively influencing social functioning, as well. Hinshaw and Ellison (2015) explain that deficits in executive functioning is why students have both social problems and life-management problems, such as forgetting key details about their peers. Without the ability to remember information about friends, such as birthdays, it becomes more difficult to maintain friendships. Additionally, without the self-regulation component of executive functioning, children suffer socially. Due to lack of impulse control they tend to get into more fights (Wender, 2000).

While there are many reasons why social deficiencies are present, what is equally as important is how social functioning has a highly negative impact on the individual. Children with ADHD tend to quickly develop highly negative reputations that are difficult to undo as they have already established their social status early in elementary school (Hinshaw & Ellison, 2015; McQuade & Hoza, 2015; Hoza, Gerdes, Mrug, Hinshaw, Bukowski, Gold et al., 2005). Peer rejection is considered one of the higher predictions of negative long-term outcomes (Hinshaw & Ellison, 2015; Mrug, Molina, Hoza, Gerdes, Hinshaw, Hechtman, & Arnold, 2012). Students with ADHD have higher risks for substance abuse, delinquency, and anxiety after experiencing social rejection (Mrug et al., 2012). It is even recommend to build friendships as part of a treatment plan for students with ADHD due to the positive results that one friendship has shown to have on students who experience social rejection (Hinshaw & Ellison, 2015). However, some research has found that while a friendship is beneficial during elementary years, they cannot offset the effects of peer rejection (Mrug, 2012).

Finally, while it appears that students with ADHD don't particularly prefer other socially rejected peers (Hoza et al., 2005) there is also the fear that students who are socially rejected might seek out others like themselves and actually increase their aberrant behavior (Mikami, 2010). It has even been found that without positive peer relationships, ADHD symptomology can increase. While social status may seem a different subject when discussing academic impairments, it is important to recognize. How a student is accepted in school speaks to their ability to manage a school day successfully, and does impact their long-term trajectory. The negative effects of peer rejections as cited above speaks to how damaging this factor is to the life of a child with ADHD.

Students with ADHD have many difficulties to face in a school setting. The results are low academic achievement for this population as well as a higher risk for negative long-term results such as dropping out of school, lack of creating social connections, substance abuse, and incarceration (Barkley, 1997). Professionals working with students with ADHD must be mindful of how many deficits the student is facing in a given school day, including low academic skills, being unable to consistently reach long-term goals and social rejection. In fact, research indicates that the higher levels of ADHD symptoms, the more academic impairments are present (Waschbusch & Willoughby, 2008). As stated in the introduction of this project, this is a similar profile of students that were enrolled in my special day class. Students were not building the academic skills they needed, and their behavior issues presented problems in the social realm of school. At the young age of these students, it is important that students in this class develop skills that will allow them to be more successful in school to prevent the negative long-term results discussed in this section.

### **Treatments for ADHD**

Finding the appropriate intervention for a child with ADHD is a complicated process. It may take a combination of many different interventions (Chronis, Fabiano, Gnagy, Wymbys, Burrows-MacLean & Pelham 2001; MTA Group, 1999; Pelham et al., 2000) that are long-term. The good news is that overall, the interventions discussed below do result in improvement for children, even if the rate of improvement may differ depending on the situation. Medication in combination with behavioral interventions is found to be the most promising intervention for children with ADHD (MTA Group, 1999). However, there are some limitations with medications. School based interventions are not to be discounted. Findings suggest that it is important that teachers play their part in implementing behavior plans in order to facilitate continued growth (Chronis et al., 2001), even for students who taking medication. Interventions need to be adaptable and change based on the student's age and need (Young & Amarasinghe, 2010); what may be appropriate for an elementary student will no longer apply to the adolescent or young adult. For this reason, professionals who work with students with ADHD must have an arsenal of possible interventions.

**Treatments Outside the Classroom.** According to the literature, the most common as well as effective treatments for ADHD are a combination of medication and behavior modification strategies (Antshel & Remer 2003; DuPaul et al., 2012). In fact, medication is the intervention for two-thirds of the childhood population with the diagnosis of ADHD (Hinshaw & Ellison, 2015). However, is recommended by the National Institute for Health and Excellence that medication should not be the first response for those with mild or moderate symptoms and other interventions should be tried before attempting medication (NICE, 2008). It is also recommended that once medication is administered, this should be part of a plan that includes non-medication treatments (NICE, 2008; Young & Amarasinghe, 2010)

In a highly cited finding, the MTA Cooperative Group (1990) compared interventions for students with ADHD over 14 months: medication only, intensive behavioral treatment only, combination of both, and a third group in which community-based care was the intervention. Though all interventions resulted in improvement in reduction of ADHD symptoms, there was significant evidence that the combination of medication as well as behavioral intervention fared far better results. In a similar study, after two years of following students, it was found that there was no more benefit to using both medication and behavioral interventions than just medication for students who were responsive to medication, and the considerable benefits remained over the two years (Abikoff, Hechtman, Klien, Weiss, Fleiss, Etcovitch, & Pollack, 2004). It should be noted, that ADHD does not go away with medication, but it does decrease symptoms (Hinshaw & Ellison, 2015). The most common medication is a stimulant, such as methylphenidate. The medication does increase arousal that allows students to focus better and may even improve working memory (Hinshaw & Ellison, 2015).

However, there are some underlying issues with relying on medication, especially for professionals in a school setting. There are the logistical problems with medication; as there is no guarantee of continual use of the medication, and whether or not this treatment is implemented is out of the control of the school setting (Slattery, Crosland & Iovannone, 2016). There are common side effects when taking medication, which include nausea, stomach pain and decreased appetite, difficulty sleeping, headaches, as well as some more psychological issues such as irritability, depression and even changes in personality (Hinshaw & Ellison, 2015; Toomey, Sox, Rusinak & Finkelstein, 2012). In fact, in a study on why children stop taking medication, in a sample 21% of children stopped taking medication in the first year (Toomey et al., 2012) and this was mostly due to side effects, especially psychological side effects. It is expected that people

may need to try out different medications to find the right fit (Hinshaw & Ellison, 2015), but understandably parents may have a negative reaction to continuing medication after seeing undesirable side-effects in their children.

Additionally, people who discontinued their child's medication, were more likely to indicate on a survey that they felt ADHD was best treated with counseling. (Toomey et al., 2012). Wender, (2000) offers the explanation that many people react negatively to the idea of medication due to the fact that ADHD is often thought of as a psychological problem, though it is a medical problem that is related to how the brain is structured.

In regards to discontinuation of medication as a problem, there is also the issue that teenagers tend to be less likely to continue their medication (Hinshaw & Ellison, 2015; McCarthy, Asherson, Coghill, Hollis, Murray, Potts...Wong, 2009). After following 15 year old participants until they reached 21, McCarthy et al. (2009) found that by the age of 21 the rate of patients using their prescription dropped 95% and none continued their medication after 21. Their findings indicate that the older the person, the less likely they are to use medication. This high percentage leads to questions about the schooling and social functioning of teenagers and young adults who have been relying on medication for reduced symptomology.

Finally, there have been some health concerns tied to prescribing children stimulants. What is interesting however, is how many concerns are disputed by researchers in the field. For example, there have been concerns that being exposed to stimulants as a child increases the risk for substance abuse. Taking a sample used in the MTA Study (1999), a group of researchers followed up after 8 years and substance use of the by then teenagers and found that while the diagnosis of ADHD strongly correlated to substance abuse, the administration or absence thereof

of medication was not a factor (Molina, Hinshaw, Arnold, Swanson, Pelham, Hechtman, & Marcus, 2012)

Furthermore, there have been several studies on the long-term health effects of giving children medication. The results are somewhat mixed, with sources providing evidence that there may be an association between a very rare event known as sudden death (Gould, Walsh, Munfakn, Kleinman, Duan, Olfson... Copper, 2009) while other sources did not find a connection with medication and sudden death (McCarthy, Cranswich, Poots, Taylor & Wong, 2009). Also, long-term results found that despite previously documented studies finding increased heart rate and blood pressure in those prescribed stimulants, there was not an increased likelihood of serious cardiovascular events, such as stroke or myocardial infarction (Habel, Cooper, Sox, Chan, Arnold, Fireman,...Selby, 2011).

It can be expected that there would be hesitation on the part of parents for the reasons cited above. While research does dispute some of the possible health concerns associated with taking medication, and trying different medications is part of the process, there are clearly barriers in relying on medication as a treatment, even though its validity as an effective treatment has been shown. It should be noted that there is hope for those who do not want to pursue medication. Each study demonstrating the validity of medication versus other treatments did show that common non-medication interventions do work, even if they do not produce the same results (Abikoff et al., 2004; MTA Group, 1999). In an additional study, during a summer treatment camp, students with and without medication were given intensive treatments such as social skills training, daily report card, a buddy system, and parent training. While there was higher positive peer reports for students with medication, the rate of improvement showed no

significant difference and continuous behavioral treatment may be a viable option for those who do not want to pursue medication (Pelham, et al., 2000).

Finally, we must also consider that while medication does improve the behavior of students with ADHD, findings indicate it does not improve the academic outcomes of students, as indicated by a follow-up of students who participated in the MTA study in which academic and social issues still persisted even after a combination of medication and behavioral treatments (Molina, Hinshaw, Stephen, Swanson, Arnold, Vitiello,, Jensen, . . . Houck, 2009). A theory for this is that medication does not improve the executive functioning deficits that are present in students with ADHD (Rapport et al., 2013). So while there are clear benefits to medication, it is not the only intervention available, and medication is not an appropriate intervention teachers and school professionals are able to rely on as their treatment.

An alternative and/or supplement to medication is cognitive-based therapy (CBT). The focus of CBT are self-guidance and problem-solving in order to improve self-regulation (Abikoff, 1991; Whalen, Henker & Hinshaw, 1985). However, there are some mixed results about the efficacy of cognitive-based therapy. The reviews of the literature indicate that there is not enough evidence to support that cognitive-based therapy is an effective treatment (Abikoff, 1991; Whalen et al., 1985). However, even in their review in which they state the prevailing issues with CBT, they do state that the study of the effectiveness of this intervention is difficult to measure, and they are optimistic about its possibilities.

However, CBT and social skills training is a recommended intervention by the National Institute for Health and Excellence (NICE) for those with moderate ADHD. (NICE, 2008). While social skills training and cognitive-based therapy are both based in skills training, CBT is usually conducted by a therapist, while social skills training is more conducive to a classroom.

Social skills training will be discussed more in detail below. In addition to the recommendation from NICE as a suggested intervention, there are quite a few more recent studies that indicate this is an intervention that is effective for improving ADHD symptomology. For instance, Sprich, Burbridge, Lerner and Safren, 2015 tried this intervention with adolescents with ADHD. During this intervention, while CBT did not make the symptoms disappear, for the case studies presented it dramatically reduced symptoms by allowing clients to work with the therapists to find systems that worked for them, as well as solve real-world issues that were hindering their education, such as finding practical ways to strengthen their education plans.

Antshel, Faraone, and Gordon (2015) also found some success with implementing CBT with adolescents, though medication was needed to maintain their improvement. Additionally, the study above had subjects that continued medication during their treatment. The effectiveness of behavioral therapy with and without medication has also been investigated (Laezer, 2015). Both showed improvements in behavior with comparable results, and both were long-term treatments, in fact, medication resulting in a long-term treatment. As stated previously, ADHD is a very individualized disability that presents itself in a variety of ways. Based on the individual, it may be appropriate that a person may benefit from multiple types of services to reduce their symptomology, which may or may not include medication or non-medicinal approaches such as CBT, or a combination of both. As will be discussed below, often it is necessary to use multiple approaches in order to facilitate growth when creating a treatment plan.

**School Based Treatments.** Based on the negative impacts of those with this disorder, as well as the high number of children participating in the educational system, ADHD in the classroom is an area of concern that schools are facing; teachers need supports to provide this population of students the tools to be successful in the long term. According to DuPaul et al.,

2012 in their meta-analysis of interventions for students with ADHD, school-based interventions do significantly improve outcomes for these students, with different factors impacting the amount of improvement from intervention type to educational placement. It is encouraged to begin interventions early on for students with ADHD (DuPaul et al., 2012), and it can be expected that as the age changes, as does the intervention, with younger students focusing more on tangible rewards and older students learning skills that will enhance their independence (Young & Amarasinghe, 2010). In order for students to improve school performance, the intervention is most effective when implemented within the school setting (Pfiffner & DuPaul, 2015), though a myriad of interventions that include interventions outside the school such as medication may be part of a treatment plan to maximize success. Medication alone is not enough to fix the issues associated to ADHD. A treatment plan for a child with more severe symptoms must be comprehensive and employed in both school and home settings (Chronis, et al., 2001). Three categories of school-based interventions are: behavior interventions, self-management, and social skills training.

***Behavior interventions.*** School-based behavior interventions are a recognized approach for students with ADHD (Pelham & Fabiano, 2008 as cited by Pfiffner & DuPaul, 2015). Behavior interventions are seen in a myriad of ways in the classroom setting. An important aspect of behavior interventions is the way in which a classroom environment is organized. Modifications to an environment include the academic tasks match the academic skills of students, the classroom be well organized and structured with the daily schedule and rules displayed for students, and time is given to actively teach and model appropriate skills for the classroom (Pfiffner & DuPaul, 2015). Additionally, classroom-wide interventions such as planned ignoring, praise, daily report cards, point systems (Chronis et al., 2001; Pelham et al.,

2000; Young & Amarasinghe, 2010). The amount of impact school-based behavioral interventions have on the individual is instrumental to the child's improvement. In a case study with a student with severe ADHD, the difference in success for the student when the teacher implemented behavior strategies such as the daily report card versus the next school year where teachers did not follow through with the intervention resulted in large negative consequences in his school functioning (Chronis et al., 2001).

Additionally, for students with more apparent behaviors that disrupt learning, a functional assessment might be appropriate. During a functional analysis, a student is identified as having a problem behavior. From here, data is collected to determine the antecedent and consequences of said behavior (Lane, Weisenback, Little, Phillips & Wehby, 2007; Pfiffner & DuPaul, 2015; Shapiro, 2000). The antecedent is the factors that create the situation for a behavior to happen, while the consequence are what happens directly after a behavior to maintain that behavior (Lane et al., 2007 citing Umbreit, Ferro, Liaupsin & Lane, 2007; Shapiro, 2000). Once enough information is recorded, a team analyzes the information to determine a hypothesis regarding the function of the behavior (Pfiffner & DuPaul, 2015; Shapiro, 2000). The function of the behavior is the reason why a behavior occurs (Lane et al., 2007). This may include a quest for attention from peers or adults, or to escape a task. It should be noted that the function is an informed hypothesis, and more information may need to be collected (Shapiro, 2000).

Once a function is determined, a treatment plan is created (Shapiro, 2000). This plan should include implementing interventions that alter not only the antecedents that may cause a behavior, but also the consequences that maintain the behavior (Pfiffner & DuPaul, 2015; Lane, Weisenback, Little, Phillips & Wehby, 2007). For instance, Lane, et al. employed this method with two students with emotional behavioral disorders in general education classrooms. Both

students were observed and plans were created to change the antecedents and the consequences of their problem behavior. For instance, the student “Julie” whose function was determined to be task avoidance had the change in her antecedent of the teacher giving clearer and more explicit instructions as well as an example. Then, a peer-mentor and the teacher would give attention when Julie finished work. No attention was given when off-task behavior was employed, thus giving both the option for a negative and positive consequence based on her behavior. This dramatically positively changed the amount of time Julie engaged in on-task behavior (Lane et al., 2007).

However, a multimethod approach in a school is imperative to the success of students with ADHD. Behavior modification alone may not create the generalization needed for long-term outcomes as they do not address academic deficits, are reactive to a problem, and require the teacher to implement the plan (Gureasko-Moore et al., 2006). This also is an issue as students in middle and high school do not have the same teacher all day, so teachers are more likely to expect students to behave (Gureasko-Moore et al., 2006). As students become teenagers, there is a need for more independence, and less reliance on reinforcements (Young & Amarasinghe, 2010). Without being taught skills that students can internalize, they cannot reach this goal. Students need to actually learn what to do in the long-term, as opposed to relying on teacher created contingencies in order to become successful and independent adults.

***Self-management.*** Self-Management is another school-based intervention found in the literature. Self-management is a type of intervention that moves away from teacher managing a student’s behavior and centers on the student taking responsibility for the improvement of their own behavior and/or school preparation skills (Gureasko-Moore et al., 2006; Slattery et al., 2016). The procedure explained in the research by Slattery et al.. explains that students are

shown their areas of weakness found through data collection. With support from staff or a parent, the student sets a goal for themselves to improve this behavior. Students often at this time are given a menu of reinforcers that they would find preferable (Barry & Messer, 2003; Davies & Witte, 2000) in order to be motivated to reach their goals is dependent on the student if a reinforcement plan is necessary to ensure that students make progress (Gureasko-Moore et al., 2006; Slattery et al., 2016). The goal is for students to learn to reinforce themselves appropriately without the assistance of a teacher, but students are going to be at varying levels of approximating this goal (Shapiro, DuPaul & Bradley-Klug, 1998).

Once reinforcers and goals are established, students begin to start recording their own actions. This can be done with premade sheets that are easy to fill out and a timer set to specific increments of time and the student then records how often they engaged in a particular behavior (Davies & Witte, 2000; Slattery et al., 2016). Lastly, in order to hold students accountable, their evaluations are compared to the teacher. Students are reinforced if their evaluations of their behavior match that of the teacher (Barry & Messer, 2003). It was noted in the literature that this may cause some conflict with students who show more oppositional behaviors who disagree with the evaluations, but it is recommended in this case that teachers calmly explain their reasoning (Shapiro, DuPaul, & Bradley-Klug, 1998)

What is important about self-monitoring is that while it obviously requires a great deal of teaching and working with a specific student, the long-term results for the students is worth this effort (Shapiro, DuPaul, & Bradley-Klug, 1998). It has been shown to be effective in reducing negative classroom behaviors, improving on task behavior for students with ADHD and does encourage generalization (Barry & Messer, 2003; Gureasko-Moore et al., 2006; Shapiro, DuPaul, Bradley-Klug, 1998 Slattery et al., 2016) once students have mastered these skills for

themselves, they are less dependent on their plans addressing these deficits (Gureasko-Moore et al., 2006; Slattery et al., 2016). This intervention was even found to be effective as a class-wide system, in which an entire classroom was using the tenants for self-monitoring, and improved the behaviors of the students who were displaying symptoms of their ADHD diagnosis (Davies & Witte, 2000). As mentioned previously, the ability to build independence is particularly important as students age into secondary programs with bigger classrooms and less one-on-one support (Gureasko-Moore et al., 2006; Young & Amarasinghe, 2010).

***Social skills training.*** Finally, social skills training (SST) is another tool used in schools to explicitly teach students prosocial skills. As stated in the first section of this literature review, social skills are a documented area of weakness for students suffering from ADHD. This may be for two separate reasons. Some students may be displaying generally systems of ADHD such as impulsive or disruptive behaviors that are off-putting to peers, or some children may lack the skills for positive social interactions (Landau, Milich & Diener, 1998 as cited by Mikami, 2015). In the research it was also found that individuals with ADHD have difficulty interpreting the intentions of peers, and have difficulty as a result finding appropriate solutions in social situation (Crick & Dodge, 1994 as cited by Mikami, 2015). Since ADHD symptoms are displayed in a variety of ways, this reason will vary from person to person.

The theory behind SST is that by teaching students alternative behaviors it will improve their social competence (de Boo & Prins, 2007; Antshel & Remer, 2003). Social skills trainings provides chances at explicit instruction and student practice in the area of prosocial behaviors (Mikami, 2015). The programs tend follow the formula of modeling, role-playing (rehearsal), student evaluation of the rehearsal, and a review in the next session by sharing how they used the skills (Antshel & Remer, 2003; McGinnis, 2011). It appears this method works best in a group

setting as it allows the chance to practice skills with others that they are observed to lack (Mikami, 2015).

However, the information in the literature displays mixed results on the effectiveness of social skills training. Part of the issue is this area needs single-case design studies in order to determine if this practice is evidence-based (Hutchins, 2017). Several studies have shown that SSTs can be effective in building prosocial behavior (Hutchins, 2017), especially in aggressive and antisocial children (Antshel & Remer, 2003), but other studies have shown that SSTs may not be as effective for students with ADHD (de Boo & Prins, 2007).

There are a few hypotheses for why students lag in social competence. There could be a lack of understanding of social rules due to their inattentiveness (Humphreys et al., 2016), which social skills training would address. However, it could also be that students with ADHD do understand social rules, but lack the emotional regulation (Antshel, & Remer, 2003) or behavioral inhibition needed during social interactions (Barkley, 1997). This would likely be more difficult to address through social skills training. Social skill deficits for children with exceptional needs including but not limited to ADHD are broken down into three categories: social skill deficits, social skill performance deficits, and self-control deficits (Elliott & Gresham, 1987; Gresham, 1982). Social skills deficits happen when a child does not possess the skills needed to interact with peers appropriately, whereas social skill performance deficits occur when the child does possess the social skill, but does not apply it to an appropriate degree to engage in social interactions. Finally, self-control deficits occur when the lack of control over emotions such as aggression and impulsivity inhibit social interaction (Elliott & Gresham, 1987; Gresham, 1982).

These classifications become important when discussing the mixed results when utilizing SSTs. This hypothesis is that those implementing SSTs are not targeting specific skills based on individual student needs (Maag, 2006). This is not only a concern for students with ADHD, but for the use of SSTs generally. It is recommended to consult the classroom teacher and pinpoint deficits prior to providing treatment in order to tailor plans appropriately (Gresham, 1982; Gresham, Van & Cook, 2006; Lane, Wehby, Menzies, Doukas, Munton & Gregg, 2006). This is especially important for understanding how the student should be taught. Students with different types of deficits require different interventions (Elliott & Gresham, 1987; Gresham, 1982). Students with skill deficits would benefit from modeling and coaching of a skill, while someone with a performance deficit would need to be reinforced for using social skills (Gresham, 1982). Students with self-control issues would need skills that are similar to those reviewed in the cognitive-based theory and self-management sections. The focus with these students is “self-instruction, self-evaluation, and self-reinforcement” (Gresham, 1982, p. 131).

Students who had been assessed before social skills training showed improvement by engaging in fewer disruptive behaviors and social issues on the playground (Lane et al., 2006). Based on the findings indicating the effectiveness of matching lessons to student deficits, Gresham et al., 2006 suggest that it might be appropriate to conduct a formal behavioral assessment as described above before implementing social skills training lessons.

Despite conflicting results, Maag (2006) urges professionals to learn from the issues found in the literature on SST, instead of dismissing the intervention altogether. While he shared many important ideas, such as school setting, appropriate selecting of students, and length of time, the idea that stood out most was that professionals could be deliberate, and target the skills students need most (Maag, 2006). This is similar to the findings of Lane et al. (2006) and

Gresham et al. (2006), who found that using data to drive their instruction was appropriate and may have increased the results of behavior interventions. This point here was reminiscent of the idea of behavior modification itself, as it is a means of using data to make decisions on how to control the environment for a student that is most helpful to the child's needs. As stated above, Gresham et al. (2006) even stated that a FBA might be appropriate before implementing social skills training, which is an important tool in behavior modification. Finally, social skills training should be part of a bigger plan for a student, and is not recommended to use in isolation (Gresham, 1998). As discussed above by Pelham et al. (2000), interventions used with students with ADHD will not be as effective in isolation. This particular point is why I feel I have committed to attempt social skills training as part of my plan to address the needs of students with ADHD.

**Skillstreaming.** Based on the findings presented in this chapter, it is hard to separate the idea of social competence and executive functioning. Executive functioning is described as higher-level thinking skills such as self-regulation, working memory and goal setting (Rapport et al., 2013). I was interested in the relationship between ADHD, executive functioning, social skills, and school success. As I began my research, I begin to see how the deficit of executive functioning also has the capacity to impact social skills. It could be argued that these same skills are needed during social interactions as well when engaging in the activities of a typical school day; deficits in behavior and executive function should not be treated as autonomous entities, but different methods should be employed to create an all-encompassing treatment of ADHD in the classroom setting.

The reason I focus on the term executive functioning on this particular project is because the skills that are presently impacting the students in this setting are the same skills that are

needed in order to be successful in a classroom. Otherwise known as executive functioning skills, these are the problem solving skills that impact students as they progress in their education. This includes skills such as attending to and finishing a task (self-regulation and goal directed behavior), and following directions (behavioral inhibition). In the research, this type of program I have chosen is actually called social skills training (SST), but *Skillstreaming* has a section called Classroom Survival Skills, and areas such as ignoring distractions, deciding on what to do, and contributing to classroom discussions are the lesson topics (McGinnis, 2011). These sets of skills are the tools students will need to work on as they progress in their education and are expected to increase independence during their secondary education; and yet this group of students are currently showing a deficit in this area even in a structured elementary environment. These skills are less about the social skills that a name social skills training might imply, but more of the skills to navigate a classroom, that we generally associate with executive functioning (goal oriented behavior, planning, problem-solving).

The social skills training program *Skillstreaming*, 4<sup>th</sup> edition (McGinnis, 2011) is a program that addresses many different areas of prosocial skills. The elementary school section of the curriculum is broken into five sections: Classroom Survival Skills, Friendship Making Skills, Skills for Dealing with Feelings, Skills to Alternatives to Aggression, and Skills for Dealing with Stress. This curriculum seems to address a large umbrella of possible deficits a student may face, which makes it possible for targeting specific areas of needs. Instead of focusing solely on the social aspects of school, which are also important, the program also addresses the executive functioning skills needs in a classroom, such as ignoring distractions and choosing a task. As found in the research above, students with ADHD have difficulties in many aspects of school, both inside and outside the classroom walls.

*Skillstreaming* is a program that is easily available to teachers and other professionals to provide social skills training to a variety of students. It has been shown to be effective for students with high functioning autism (Lerner & Mikami, 2012), students with emotional disorders (Sasso, Melloy, & Kavale, 1990), and even has been taught to peers with learning disorders to teach social skills to other students with learning disorders (Prater, Serna, & Nakamura, 1999).

In 2011, this program was evaluated by a team of researchers who implemented this program with kindergarten through 3<sup>rd</sup> grade students. The results indicated that even a year later, students who experience this curriculum knew how to apply strategies in a given social situation (Sheridan, MacDonald, Donlon, McGovern & Friedman, 2011). Previously, Miller, Midgett and Wicks (1993) found that they were able to use the checklists provided by the *Skillstreaming* program to target problem behaviors for students with emotional disturbances. The intervention was implemented in the form of providing discussions, teaching and modeling the skills, providing feedback during role-playing as well as opportunities to practice the skill outside the environment. On the next round of questionnaires, students did not see a change in their behaviors, but teachers recorded change (Miller et al., 1993). The gap was hypothesized for being related to the fact that students originally did not self-report deficits in the first place and raised the question about the ability of those with emotional disturbance to accurately self-report.

*Skillstreaming* may offer a response to addressing the negative impacts described in this review, as it is a way for students to be explicitly taught the expectations when dealing with issues students encounter on a daily basis. Lane, Givner, and Pierson (2005) discuss in their research that when working with special education or pre-referral students on increasing their classroom skills professionals need to first understand what behaviors teachers expect from

students in their classrooms. Two separate studies were conducted, one for elementary school teachers in which 126 teachers were surveyed, and the second a study of secondary teachers, in which 240 secondary teachers from two high schools and two middle schools were surveyed. While there were some differences in the results, the emphasis of behaviors, teachers expected from students was in self-control and compliance. Some examples include following instructions, responding appropriately and controlling temper with peers and adults (Lane et al., 2005). According to the elementary study, the goals for teacher appear to decrease disruptions in a classroom and allow to maximum instruction (Lane et al., 2005).

**Social skills training in conjunction with other interventions.** However, since the disorder of ADHD has so many negative impacts on the functioning of students, based on the evidence presented, it will behoove professionals to take a multiple-intervention approach. Even in the findings by Miller et al. (1993) cited above, they found that consequences needed to also be in place during their intervention, and they could not rely on the instruction alone. Additionally, in their research of the effectiveness of a social skills training by Antshel and Remer (2003) had in place a point system to promote engagement. This is an example of behavioral modification. Also, according to Maag (2006), a major deficit of SSTs may be a lack of targeting, which could potentially be done through the system of functional behavioral analysis, and important and well-respected form of behavior intervention. Eventually, it would be optimal if a student could manage their own behavior and learn self-management tools, but for students with ADHD, it appears that will take many tools as well as a considerable amount of time to reach that goal. In summation, while social skills training may enhance already existing

plans, it is not a replacement for behavior modification and is unlikely to be successful on its own.

## **Summary**

I would like to address the lack of executive functioning skills present in the students in my classroom with the diagnosis of ADHD by continuing to provide behavioral interventions as well as add a prosocial skills training intervention. This class already possesses many of the behavioral techniques recommended in the literature regarding behavioral interventions: the academics in the classroom match the abilities of the students, rules and the daily schedule are reviewed frequently and posted clearly, a clear token economy is in place, and the class is structured in a predictable way. Additionally, some students have intervention plans to address their specific behaviors. However, these students need more in the way of acquiring important skills they will need as they progress in their education.

These are the skills that students with ADHD lack as a symptom of their disability. For many reasons, students with this disorder have significantly poorer long-term trajectories related to school. As a teacher in a special education classroom finding the most effective ways of supporting students with Attention-Deficit Hyperactivity Disorder will enhance not only the classroom, but the long-term outcomes of these students. My hope is to increase the sort of skills that align to teacher expectations in order for them to build their ability to be successful in a classroom. Currently, the students in my classroom are in a small placement where many of their needs can be readily met. However, most will be promoting to larger middle school that will have special education programs, but will expect more autonomy than that of their elementary school placement.

My plan is to use the ideas presented in this research of building on the already pre-existing structures and plans of the classroom with the explicit teaching of prosocial skills that are directly tied to executive functioning. Since the research suggests targeting for this practice, I will also be using the methods of functional behavioral analysis to provide instruction that is most beneficial to students in my classroom. This will be further described in subsequent chapters.

## Chapter 3: Methodology

### Research Methods/Researcher's Role

The intent of this study was to determine if using *Skillstreaming* (McGinnis, 2011) with students with Attention-Deficit Hyperactivity Disorder will decrease negative classroom behaviors in a self-contained special education classroom. This research was implemented as an Action Research Project. An Action Research Project is research that is conducted in a classroom by the classroom teacher, as opposed to an outside observer, and the focus of the research is the adults and/or students in the classroom environment (Kemmis, McTaggart, Robin, Nixon, & Rhonda, 2013). The goals of an Action Research Project are to improve the conditions of both the students and the adults in the setting, as well as to make informed decisions regarding changes in the classroom (Kemmis et al., 2013; Mills, 2014) through finding, collecting and interpreting data on an area of focus, and creating an action plan based on said focus. In this case, the researcher of this study was the classroom teacher of the students who make up the sample in the study. The teacher (myself) identified a need to address the externalizing behaviors of students in the classroom with ADHD; I was seeking to use the information to determine if the program detailed below is an effective tool for students in this setting and if it should be added as part of the classroom structure long-term.

I, as the classroom teacher and researcher, with the assistance of the paraprofessional in the environment, am in charge of data collection; as well as the implementing and teaching of the intervention; hence I would be considered an active participant in the setting and this would qualify me to be an active participant observer (Drew, Hardman, Hosp, 2008; Mills, 2014). An

active participant is the person who is not only in charge of collecting the data, but simultaneously, the actual teaching of the students (Mills, 2014).

This Action Research Project is considered a single-case design. More detail will be presented throughout this chapter of the specifics of the design, but the point of a single case-design is to understand the individual case that is studied, not necessarily to understand a phenomenon or how the individual represents the larger population (Stake, 1995; Vannest, Davis & Parker, 2013). This is a particularly important method of research in special education, because often special education cases are exceptional, and difficult to replicate (Vannest et al., 2013). The goal here is to understand the case in how it stands, and compare the student to their own behavior, pre-intervention and post-intervention (Stake, 1995; Vannest et al., 2013).

Studying the individual students is the intent of this design, as opposed to making assumptions about all students with ADHD, which would be highly unlikely, given the high variances the disorders presents itself in individuals. The purpose of this study is to implement the intervention and use the data to determine if there was a hindrance of the externalizing behaviors of these two students. This project did not only provide valuable information as to if this program could be part of larger plans for future students in this setting with ADHD, but also provided information on how effective this intervention is for these current students.

## **Setting**

The classroom in this study is located on a public elementary school campus in Santa Rosa, California. The school consists of three classrooms per grade level in grades kindergarten through third, and two classrooms per grade levels in grades 4<sup>th</sup> through 6<sup>th</sup>. There is also one transitional kindergarten on campus. In addition to classroom teachers on campus, there is a

school counselor and interns, a resource specialist, a reading specialist, an enrichment teacher, a PE teacher, and an art docent, in addition to instructional assistants. There are three self-contained special education programs on campus. Two are county-run programs for students with severe disabilities and one is a district-run mild to moderate program, and is the subject of this research study.

The classroom is a full-sized classroom in the center of campus, located between a second grade classroom and the Resource Specialist Program. It is not a separate program from the school, such as the county programs. Students participate fully in school events such as assemblies and field trips, and are mainstreamed when appropriate. However, all areas of instruction including language arts, math, science and history are taught in this special education classroom.

### **Participants**

**Classroom participants.** The participants of this study were part of a classroom consisting of ten students whose disabilities are considered mild to moderate. This means that the students are enrolled in a program that is more academically based, as opposed to a life-skills based program, which is generally geared for students with moderate to severe disabilities; however, there is a higher skills-based focus than would be present in a general education classroom. Represented in this classroom are third through sixth grades, with one third grade student, two fourth grade students, four fifth grade students, and three sixth grade students. The class was mostly comprised of male students, with eight boys and two girls. Five students are Hispanic (50%), four students are Caucasian (40%), and one student is African-American (10%). While two students have parents that only speak Spanish, no students in the class qualified for the classification of English-Language Learner.

The students varied in their needs and strengths, however, all students were carefully placed in this environment after modifications and alternative supports were attempted in their previous setting in order to ensure students are placed in their least restrictive environment. Some students in this classroom have noted social and learning needs, such as students with Intellectual Disability (an IQ score less than 70), Autism, and the population of students with ADHD. Thirty percent of the students are diagnosed with comorbid diagnoses of ADHD and Specific Learning Disability (SLD) while fifty-percent of the classroom are classified under SLD without ADHD, and show relatively less social and behavioral needs.

The two students that demonstrate the highest incidents of externalizing behaviors are the focus of this study, as these children have the most noted need of intervention in terms of behavior. Both also are diagnosed with ADHD. The behaviors of the other students and how they interact with these target students will be factors in the study, however, as stated above, this is a single-case design intended to determine the effectiveness of this program on these particular students. For the purpose of this study, these students have been given pseudonyms.

**Target students.** At the beginning of this intervention, Margaret was 11 years old and at the end of her 6<sup>th</sup> grade year. She is classified as having Attention Deficit Hyperactivity Disorder, as well as a Specific Learning Disability. Margaret is a charismatic young lady, who often has good ideas and suggestions for class games, likes to help others, and has a relative skill in language arts. She has had a history of trauma, but now lives with her mother who is very active in her education and communicative with her teacher. While her learning disability does impact her performance in school, especially math, in which she is approximately three years below her typical aged peers, her placement in a special education classroom was largely due to her behavior. Margaret displays behaviors that can be described as oppositional. If she is asked

to do a task at her instructional level, she will often avoid the task through attention-seeking behaviors by distracting others, negotiating with the adults, or finding reasons to leave the classroom, though sometimes her avoidance behavior manifests in behaviors such as cleaning the classroom or helping a neighbor. Additionally, Margaret does suffer from social struggles. She will engage in frequent arguments and deception with her peers and the adults around her, such as giving false information to staff about where she is supposed to be after school or stealing items from peers. This often results in loss of privileges from adults as well as social issues on the playground from her peers. She has taken medication in the past, but during this school year she did not take medication for the majority of the year.

Alexander and Margaret had very similar profiles. Alexander was a sweet young man at the end of his 5<sup>th</sup> grade year. He also has had a history of trauma, but was living with his mother who at this time was very involved with his education and was communicative with his teacher. While he did have both ADHD and Specific Learning Disability, his placement in a self-contained special education was primarily related to his behavior. Alexander appeared to have a relative strength in reading, as he was able to read and decode near grade level, but he was several years below grade level in math and needed frequent re-teaching of concepts such as division and multiplication. Previously, he was in a general education classroom in which he produced very little work, and his high amounts of movements and outbursts created issues in the learning environment.

Alexander's largest issue appears to be with impulsivity. This can be seen in impulsive words and actions including blurting, making inappropriate comments to peers and adults, tearing papers in class, and seeking peer attention by wandering the classroom or yelling. Depending on the severity of the behavior, this interferes with Alexander's ability to concentrate

on his school work, and distracts others in the classroom. Alexander's impulsive behavior creates issues in the classroom for him and on the playground as well. He appears to want to be accepted by his peers, but issues such as calling others "ugly" or spreading secrets has interfered somewhat with this, though he has made a few friends in his class. Part of the reasons for his friendships could be because Alexander is often apologetic for his actions, and often gives peers and adults thoughtful compliments throughout the day. Alexander does not take medication for his ADHD.

**Target behaviors.** During the initial phase in which I collected data in order to determine a target behavior, a few problematic behaviors were exhibited by Margaret. According to the data collected on the ABA form described below with an example provided in figure 2, Margaret initially displayed an interest in teacher and student attention in the form of sharing an off-topic story during the morning review of the schedule. During class time, initially Margaret did engage in assigned work, but it appeared she needed a great deal of teacher feedback to remain on task. During independent work time Margaret engaged in off-task behavior, such as playing in her desk and eventually looking to peers for attention. In addition, during her transition from break, she displayed some oppositional behaviors, arguing with the teacher when asked to put away her snack and return to work. While the oppositional behaviors were a concern and will need to be addressed, the most frequent and ongoing behavior appeared to be task avoidance.

During Alexander's initial data collection phase, the behavior presented was overwhelmingly attention-seeking behavior. He appeared to complete his work, but spent a large portion of his time trying to make eye-contact with other students and make conversation. It appeared that Alexander did want attention from both peers and adults, though was appropriate when seeking adult attention in the form of asking for help.

Based on the externalizing behaviors of these two students, the results of their observations indicated a need for these students to remain on task and decrease their attention-seeking behavior. The training would need to center on ideas such as ignoring distractions, staying on/deciding a task and following directions. Making appropriate contributions appeared in both observations; though it was not as evident during their initial observation, it was added due to the ongoing issues with the problem.

While Margaret and Alexander both may benefit from some instruction found in the Alternative to Aggression section, namely accepting consequences (Alexander) and negotiating (Margaret), the most frequently occurring issues appeared to be task-avoidance/attention-seeking behavior.

## **Procedures**

**Current classroom management strategies.** As seen in the literature review, there are many factors to take into consideration when improving the behaviors and academic success of students with ADHD. This classroom already is highly structured and behavior modification supports are in place, a method widely accepted to improve the behaviors of students with this disability (Fabiano, Pelham, Coles, Gnagy & Chroni-Tuscano, 2009). Current supports that are in place are a token economy, clearly defined rules, a contract system that has both negative (loss of preferred activity) and positive consequences (preferred activity) that is attached to a daily report card to parents, an incredibly structured schedule that is reviewed daily, carefully planned instruction based on student ability, contingency systems tied to work completion, as well as smaller techniques such as praise and planned ignoring.

Additionally, Alexander has a check-in/check-out system based on a rewards program. As indicated by a case study by Lane et al., (2007) check-in systems in which a student evaluates

their ability to engage in expected behaviors and is reinforced by the teacher is an effective way to provide attention and reinforcement to students who seek attention (Lane et al., 2007).

Students will continue with their already existing systems, created by their IEP teams. My plan is to supplement their existing plans with social skills training, not replace it. While the current supports do improve student behavior, behavior problems as well as executive functioning deficits still impede the student's daily lives, as observed by the classroom teacher. Frequent examples include off-task behavior, inattention, excessive talking, not attending or following directions, and not having needed materials present. My goal is to explore the effects of supplementing the class with training in needed executive functioning skills will improve classroom success for these two students with Attention-Hyperactivity Deficit Disorder.

**Timeframe.** For this investigation, we had two weeks of pre-intervention data collection, and two weeks of post-intervention data collection, and six weeks of intervention. Time for the actual intervention was allotted each school day with a range of 15 minutes to 30 minutes, depending on the schedule for that day; Monday afternoons were blocked out for skills, while the rest of the week centered around the excess time waiting for special activities such as computer and library, that previously was used as teacher read-aloud time. The intervention took place after spring vacation until the end of the year state testing. Each skill was intended to have a one week focus, but in practice the amount of time depended on the student's skills and ability to understand the lessons. Some skills were extended to a week and a half or two weeks, while others simply lasted a week. Due to this adjustment, five skills were focused on during this intervention, rather than the initial six.

**Intervention framework.** I used the Prosocial Skills Training *Skillstreaming* created by Dr. Arnold P. Goldstein and Dr. Ellen McGinnis. *Skillstreaming* is program that focuses on different aspects of potential student deficits and gives step-by-step directions on the prosocial skills that would replace these areas of weakness. The routine of the curriculum is to teach/model, role-play, feedback, and generalization (McGinnis, 2011). During the teach/model section, it is important to define the need for the skill. After this, the instructor models the skill for the students, speaking aloud through the steps of the skill; the situation should be thoughtfully planned and apply to the students' daily lives (McGinnis, 2011). After this, students should be given the chance to role play themselves, in order to practice and rehearse the skill in different context. *Skillstreaming* provides instructors with different tasks cards that give students likely situations they will have to use the skill that was particularly helpful in this phase.

After this, students receive feedback from both peers and the adult(s) that provides insight into how well they performed the skill. Both feedback and praise are necessary components of this learning process (McGinnis, 2001). Finally, students need to practice the skill in real-world settings for generalization. This is the most complicated, and has been pinpointed in the literature as the most problematic issue with social skills training (Gresham et al., 2006).

**Intervention in practice.** I was able to target prosocial skills that were more clearly needed than others because *Skillstreaming* is a program that provides lessons that do not appear to be in an expected sequential order. Instead skills are grouped under to appropriate category they are related to, which lends itself to using the program in a way that can be tailored and targeted for students. The lessons chosen based on student data were Ignoring Distractions, Following Directions, Contributing to Classroom Discussions, and Deciding on Something to Do. Originally, Dealing with Boredom was one of the selected skills, but time limits did not

allow for this skill. Students in the class have already been taught they are to read a book from their desk when having a “boring moment,” so this was the skill with the least apparent need in the classroom.

The lessons followed a given format. On day one, I had a poster in the front of the room that laid out the steps for the skills of the week. An example below shows the format for these steps:

Ignoring Distractions

Count to five.

Say to yourself, “I won’t look, I’ll keep on working.”

Continue to work

Say to yourself, “Good for me. I did it!”

From here, I would chose a student to help me model the skill. After the skill was modeled, I asked for student feedback. Once the skill was discussed, I used Popsicle sticks to divide up the class into groups of two or three, and handed out situation cards for which they would need to develop a skit. Initially, students were to just show how the skill could work, but it evolved through student suggestion that they should develop a skit showing a “what not to do.” Once students felt their skit was ready, they performed in front of the classroom, and students had the opportunity to share their feedback regarding the skits. This was repeated several times, so students could practice in different scenarios.

Additionally, each skill had teacher prepared supplemental lessons to enhance and expand learning. Some of these lessons were found in the *Skillstreaming Lesson Book* (McGinnis, 2005), such as making a post-it note poster of ways students ignore distractions. Other lessons were teacher created, such as asking students to follow a recipe during the

following instructions skill. Some supplemental materials and lessons were found online, such as videos describing the skills on Youtube, or other internet sources. Finally, books were used as a resource, as we read *Strega Nona* by Tomie dePaola as well as *My Mouth is A Volcano* by Julia Cook.

It is recommended as part of the *Skillstreaming* program that homework sheets be sent home for students to evaluate when they used the skill. Based on professional judgement, this particular part of the program was not implemented during this project. It was not considered to be a benefit to the intervention.

### **Instruments**

**Surveys.** In order to record student perceptions of how the program impacted them, all students in the class filled out surveys before the intervention and after the intervention. The survey was specific to the skills we were to learn in class. This survey consisted of 6 questions that rated their observations of their own behavior related to a skill selected to be part of the intervention from the *Skillstreaming* curriculum, as well as two open ended questions in which students could write in their thoughts. Questions were both negatively and positively framed, and students were given a range options to specific behaviors: all of the time, some of the time, half of the time, sometimes, and never. The questions were read aloud to the students, and students were repeatedly encouraged to give honest feedback.

Name\_\_\_\_\_

***Check a box that most fits with your feeling of each answer.***

**How often do you feel you ignore distractions when they happen in your classroom?**

All the time    Most of the time    Half of the time    Sometimes    Never

**How often do you feel you cause distractions in your classroom?**

All the time    Most of the time    Half of the time    Sometimes    Never

**Do you have any comments regarding classroom distractions: (Do you want to work on this for yourself or is it something that bothers you in others?)**

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**How often do you follow directions when asked?**

All the time    Most of the time    Half of the time    Sometimes    Never

**What is your method for listening to directions? Do you prefer when things are written down? Do you wait until after the teacher has explained and then walk to her desk to hear them again?**

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**How often do you raise your hand when contributing to classroom discussions?**

All the time    Most of the time    Half of the time    Sometimes    Never

**How often do you think you stay on topic when contributing to classroom discussions?**

All the time    Most of the time    Half of the time    Sometimes    Never

**How often are you not able to finish your work because your brain was focusing on something else?**

All the time    Most of the time    Half of the time    Sometimes    Never

*Figure 1: Survey*

**Individual student data.** As stated in the population section of this chapter, student needs were assessed utilizing the methodology of Functional Behavior Analysis. Functional

Behavior Analysis (FBA) is the practice of observing a student within their classroom setting to determine the antecedent of a problem behavior, as well as the consequence that follows a problem behavior (Lane, Weisenback, Little, Phillips & Wehby, 2007; Shapiro, 2000).

Since the observers in this study are the classroom staff, I decided to employ this system in order to find what issues are actually the most pervasive in the classroom to ensure my decisions were based on evidence. Frequently, this system of FBA works when an outside observer (possibly a behaviorist) interviews the teacher and already has a problem in mind that is clearly defined (Shapiro, 2000). For me, I have come to know these students well and had a prediction of their target behavior, but wanted to stay as unbiased as possible. Recording the antecedents and consequences of all behaviors observed in the class would allow me to select and define target behaviors.

First, the daily behavior of each student was measured using applied behavior analysis. During this first step, both the classroom teacher and the paraprofessional recorded all the behaviors of a student using a standard Antecedent, Behavior, Consequence form, otherwise known as an ABC form (Shapiro, 2000). To engage in this type of data collection, an individual writes down the time, and begins to observe the student. In this case, the data collecting began at the start of the school day and ended at first recess. All behaviors of the student are recorded as well as the antecedent (what happened right before the behavior) and the consequence (what happened right after the behavior). Both appropriate and inappropriate behaviors are logged with equal attention and the goal is to remain impartial during this recording of the information. This process was done separately for both students as it is not recommended to focus on more than one student at a time when engaging in this practice. With the use of this instrument, I could move forward with data collection, which will be further explained in Chapter 4.

Antecedent	Behavior	Consequence
Student comes in late	Hands Paraprofessional Excusal form	Paraprofessional says, "thank you for coming in quietly."

Figure 2: ABA Form

**Behavior contracts.** Behavior contracts is a system already in place in the classroom setting. While students earn positive incentives such as student store dollars attached to a token economy and classroom-wide points, behavior contracts are the consequence to ongoing behavior problems. Each student has a clipboard in the corner of the classroom in which their contract is kept. If a student has less than five marks, then they have "made contract." They are able to circle they have made contract on their daily report card that is shared with their parents and are able to go to Earned Break, which is a time in the day for preferred activities. If a student receives 5 or more marks, they have "lost contract." This is also indicated on their daily report card with an explanation on why they lost contract. Students miss two earned breaks for missing contract, and three losses results in a parent-teacher conference.

Students are not marked for every redirection. Marks are the result of an ongoing problem that has been addressed multiple time or a behavior that requires immediate adult intervention. Students can also earn an automatic loss of contract for behaviors that are considered more egregious, such as physical aggression, spitting, stealing, destroying school property, going into peer's desks, lying, cheating, or gossiping. The purposes of including this data is to determine if *Skillstreaming* affected general behavior.

## **Ethical Considerations**

While there were only two target students for this study, all parents of the students participating were given the opportunity to fill out an IRB consent form. The mothers of the target students were informed that this study was a focus on students with ADHD in the area of behavior and their child would be of focus. Both parents verbally agreed to the study, as well as signed the general class-wide form. For the rest of the parents, information about the study was answered individually at an unrelated school-hosted event. Most parents signed the consent forms, and those who didn't do not have their results shown in this study.

Results at the end of this intervention were analyzed to ascertain the progress of the students and the effectiveness of the program. Both measurement of behavior as well as student feedback were taken into account during this process. This will be discussed in more detail in Chapter Four.

## Chapter 4: Results

This project sought answers to three questions: Will providing a supplemental social skills training program in a class with behavioral supports decrease targeted negative behaviors of students with ADHD in a special education classroom? How will students perceive their progress during this intervention? Lastly, will this impact their behavior in regards to their general behavior system that already exists in the classroom? I will use the data collected to address these questions in the following sections.

### Experimental Design

The single-case experimental design for this intervention was a reversal design. Otherwise referred to as an ABA design, the sequence is as follows: baseline data without the independent variable (our intervention), an intervention phase, and then the withdrawal of the intervention. The purpose of this sequence is to ascertain if a student's behavior is affected by the absence and/or presence of an intervention (Cooper, Heron, & Heward, 2007).

It is concluded that in an ABA design, with the exception of an irreversible behavior change, if a child returns to their baseline behavior once an intervention is withdrawn, this is an indication that the intervention was affecting the child's behavior (Cooper, Heron & Heward, 2007). This is also why it is important for all variables in the setting to remain the same; if other interventions are introduced during the intervention phase, it would be difficult to determine which intervention is actually responsible for causing the change in behavior (Cooper et al., , 2007).

In the intervention phase of this project, the behaviors of the target students decreased, but increased again once the intervention was removed. This strongly indicates that the added support of explicitly teaching skills from the *Skillstreaming* program did positively affect these students by decreasing the targeted behavior of engaging in off-topic conversation with their peers.

It is important to note, as stated earlier in this project, that there were behavior plans and classroom supports already in existence before this project began, but there was no change to any existing plans or the class structure except for the introduction of our independent variable, the explicit teaching of *Skillstreaming* tools, and the changes that came as a result of this intervention. The variables are as follows:

*Dependent Variables.* In this case, our dependent variable was each student's behavior, measured during math centers by recording the behavior of off-task conversations.

*Independent Variable.* The independent variable in this case is the intervention using the *Skillstreaming* program. This includes the explicit direct instruction of classroom survival skills, practice through use of role-playing and performance feedback, and extended learning through stories, videos and teacher-created projects.

As discussed in the previous chapter, one issue with a single-case design, such as this one, is that external validity is often in question (Burns, 2012; Horner, Carr, Halle, McGee, Odom & Wolery, 2005). Usually single-case designs have few participants (Horner et al., 2005) and since it is a method used in special education (Vannest & Parker, 2013), the situations are unique, or lower in numbers. Results of a smaller number of students that has not been replicated in different scenarios may not allow researchers to determine if an intervention is evidence based

(Burns, 2012). Additionally, single-case designs tend to represent their data visually with graphs (Horner et al., 2005) which means that effect sizes are not able to be used in meta-analysis (Burns, 2012). However, the evidence for generalization of these studies can be enhanced by repeating the experiments with different individuals in different settings (Horner et al., 2005). In the case of this design, while I can say the results were successful for these students and for this setting, it would take a more repetitions in different settings to actually generalize the validity that teaching *Skillstreaming* to a special education class will improve the targeted behaviors of students with ADHD. However, what I present below are the results of this particular experiment, which show positive effects on the targeted students, as well promising perceptions recorded by the rest of the class.

### **Question 1: Target Students and Behavior Trends in Response to the Intervention**

Data was collected during two math centers, each of which last approximately fifteen minutes long, depending on outside factors that are prevalent in a typical school day. Math centers was chosen as it is a time in which students have more opportunities for independence, therefore higher incidents of the behavior are prevalent. Using the ABA forms discussed in Chapter Three, the problematic, or target behavior that appeared to result in the most off-task behavior was off-topic conversations during independent work time. By having a specific behavior to measure, it allowed for progress monitoring of behavior for all three phases of the experiment (pre-intervention, intervention, and post-intervention).

The first math center was a computer station, in which students utilize the math program [www.ixl.com](http://www.ixl.com) to work on individual math skills. The second math center was independent math time, in which students completed work from their math binders at their desk. In both stations, work is specifically matched to their assessed instructional level. Their behavior was not

measured during their stations with the teacher or paraprofessional as adult interference mitigated this behavior.

The data collection tools for the progress monitoring of Alexander and Margaret's off-topic conversations were two timers and two notecards with the date as well as the students' initials at the top. Once it was established that a student was engaging in an off-topic conversation, a tally was marked on the notecard, and the timer assigned to that student was started. After the student finished their conversation, the timer was stopped. The data for duration did not prove useful, so has not been included in this data analysis. However, events per minute are listed below.

### Margaret: Individual Behavior Change

#### *Computer Time*

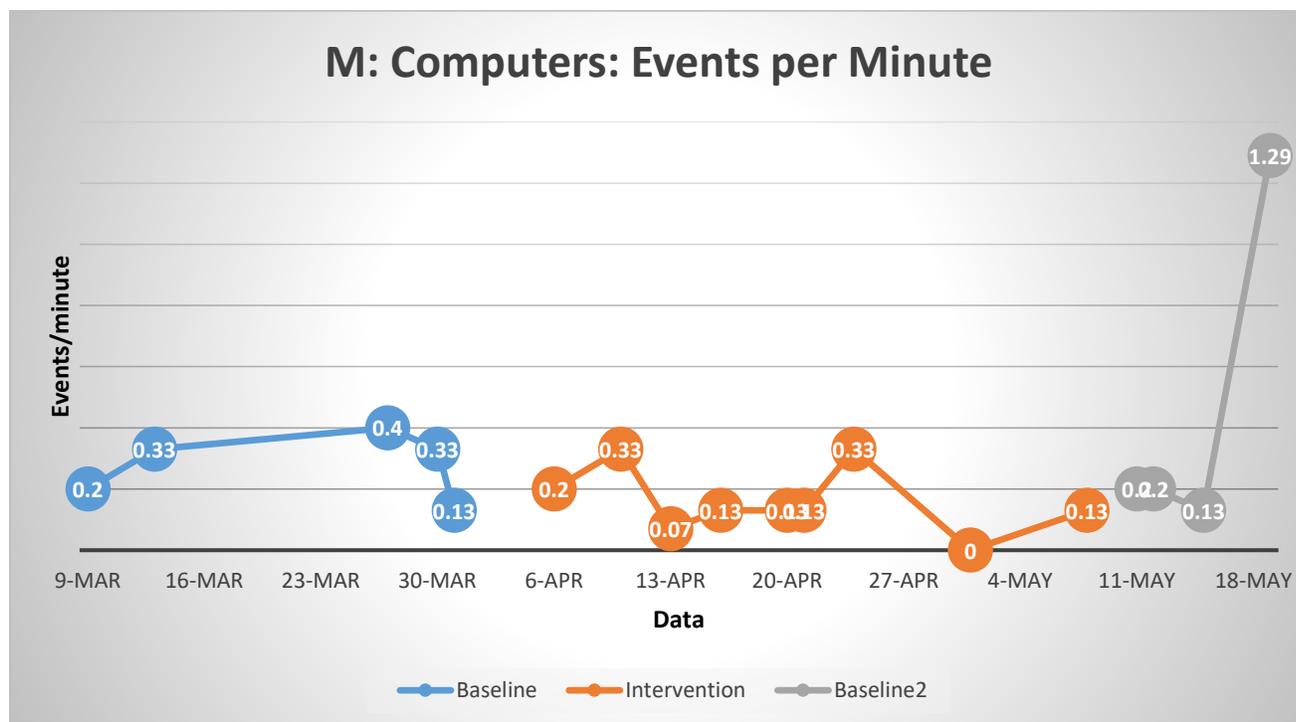


Figure 3 Margaret Computer Time

### Independent Work

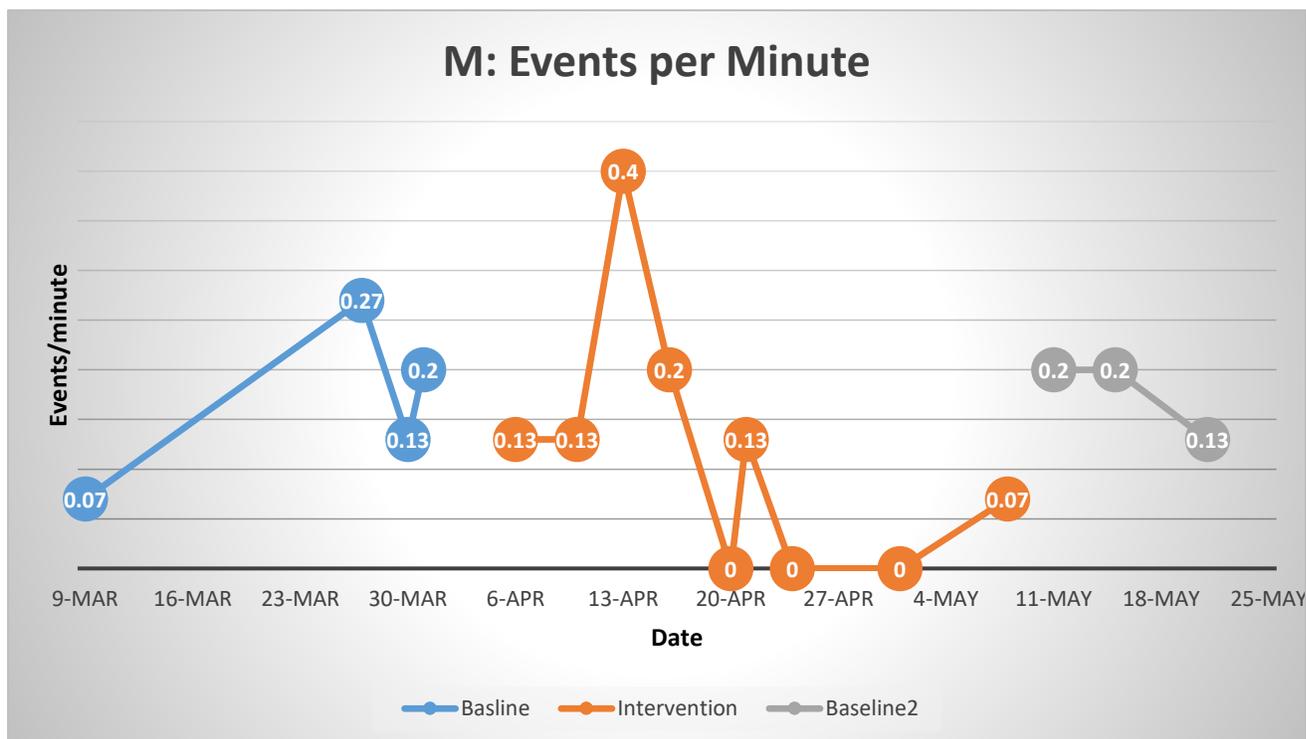


Figure 4 Margaret Independent Work

**Summary.** Margaret's behavior clearly has a pattern of descending events during the intervention phase. For both computer and desk work, there are lower events of off-topic conversation during the intervention phase than in the baseline data. Once the intervention was removed, Margaret's behavior returned to a similar pattern to the data found in the baseline phase, especially in the independent work center. This indicates that Margaret's behavior was dependent on the intervention.

## Alexander: Individual Behavior Change

### Computer Time

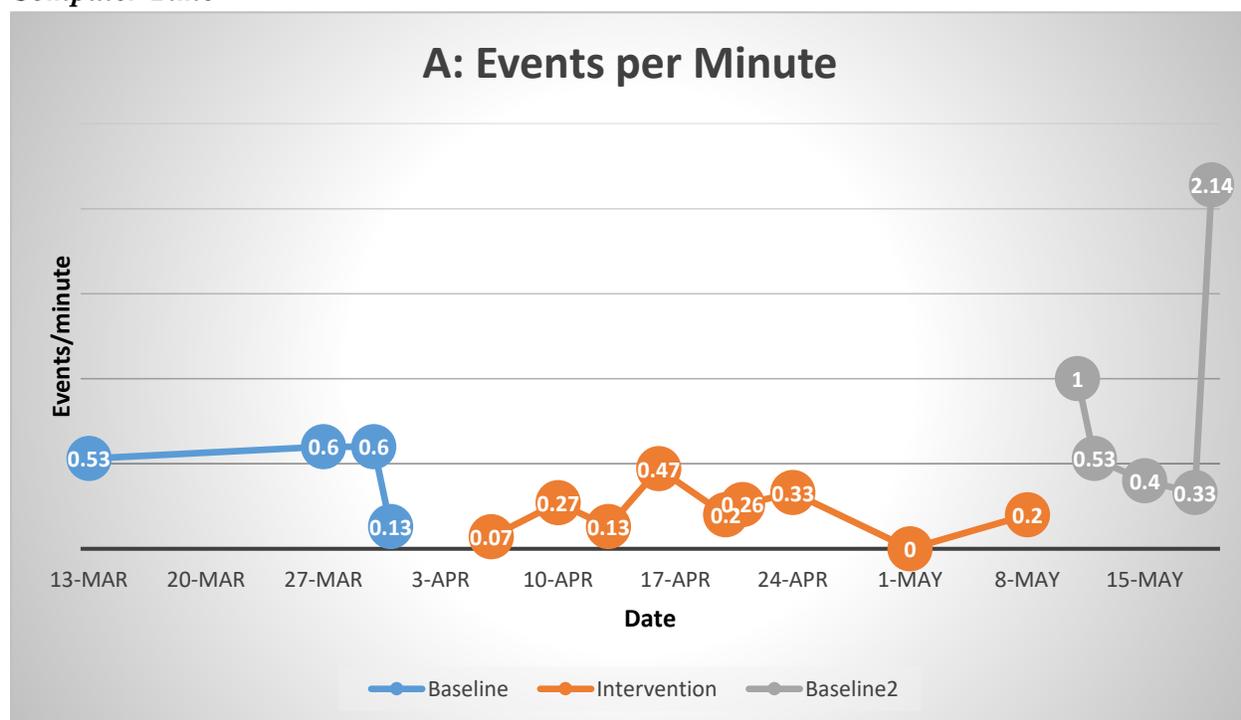


Figure 5 Alexander Computer Time

### Independent Time

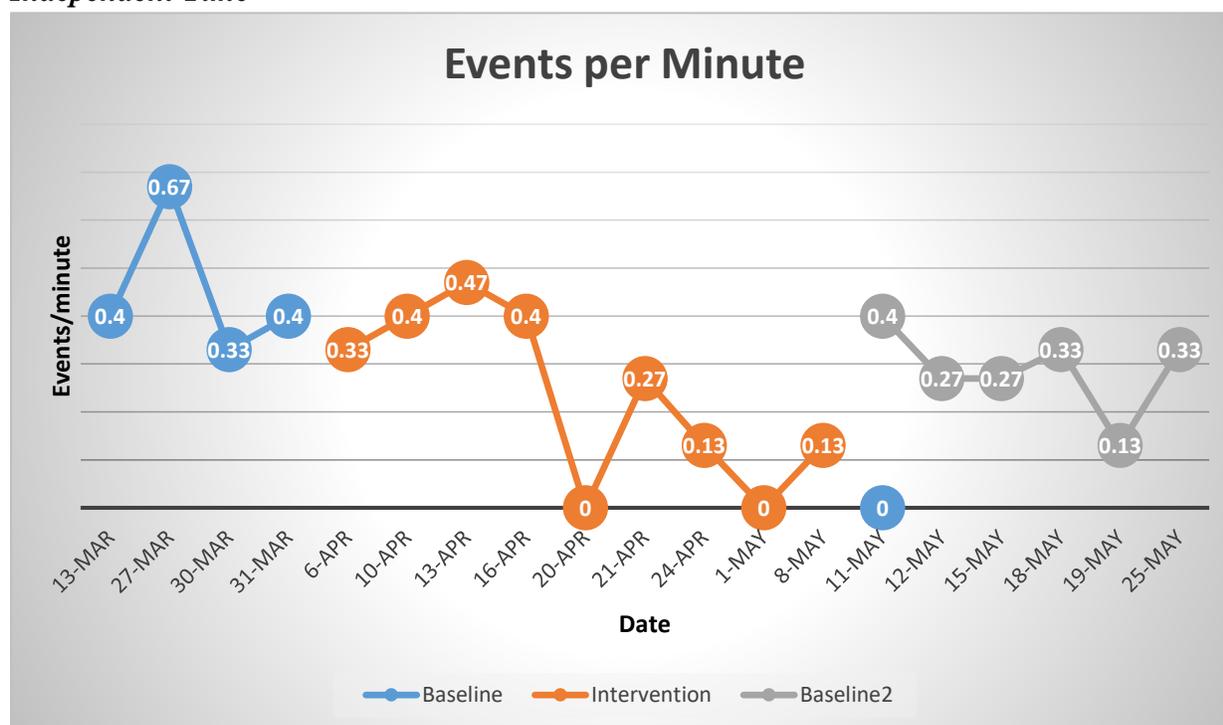


Figure 6 Alexander Independent Time

**Summary.** Similar to the findings of Margaret, Alexander also had higher incidents of the target behavior of off-task conversations during computer and independent work time during the baseline data, and showed a pattern of descending behavior during the intervention phase. Once the intervention was withdrawn, Alexander's behavior increased, though not as prevalent as the baseline data, with the exception of one data point. This indicates that the intervention had an effect on Alexander's behavior. In addition, what is not shown in the data, students in the class also learned to ignore Alexander's behavior, leading to better classroom management overall. This will be discussed more in detail in Chapter 5.

### Surveys: Question 2: How Did Students Perceive Their Progress?

In addition to the data recorded above, all class members were each given surveys at the beginning of the intervention, and once the intervention concluded. The intent of this survey was to address the research question of how students perceived their progress during this intervention. The intent of the survey was to gauge the class's perspective of themselves in regards to Classroom Survival Skills, as well as to see if this perspective changed as a result of the increase attention to these skills. The students answered the questions as follows:

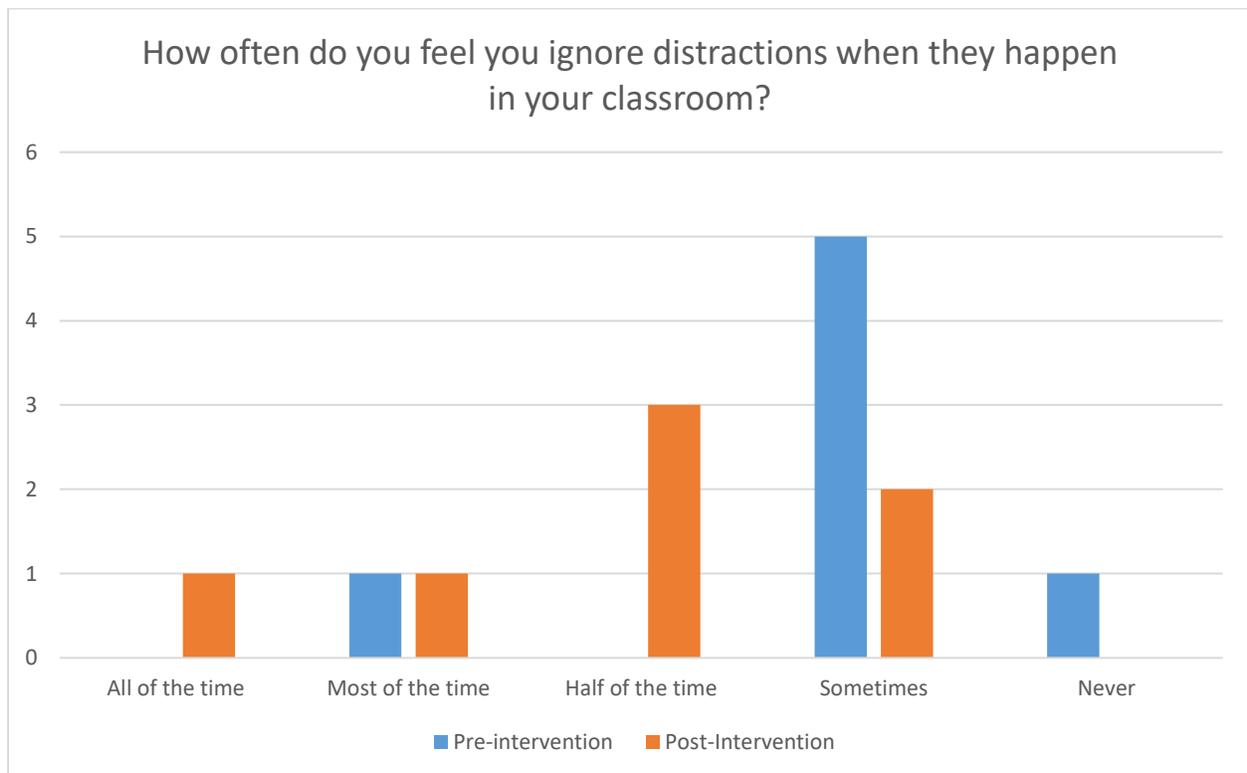


Figure 7 Survey Results Distractions

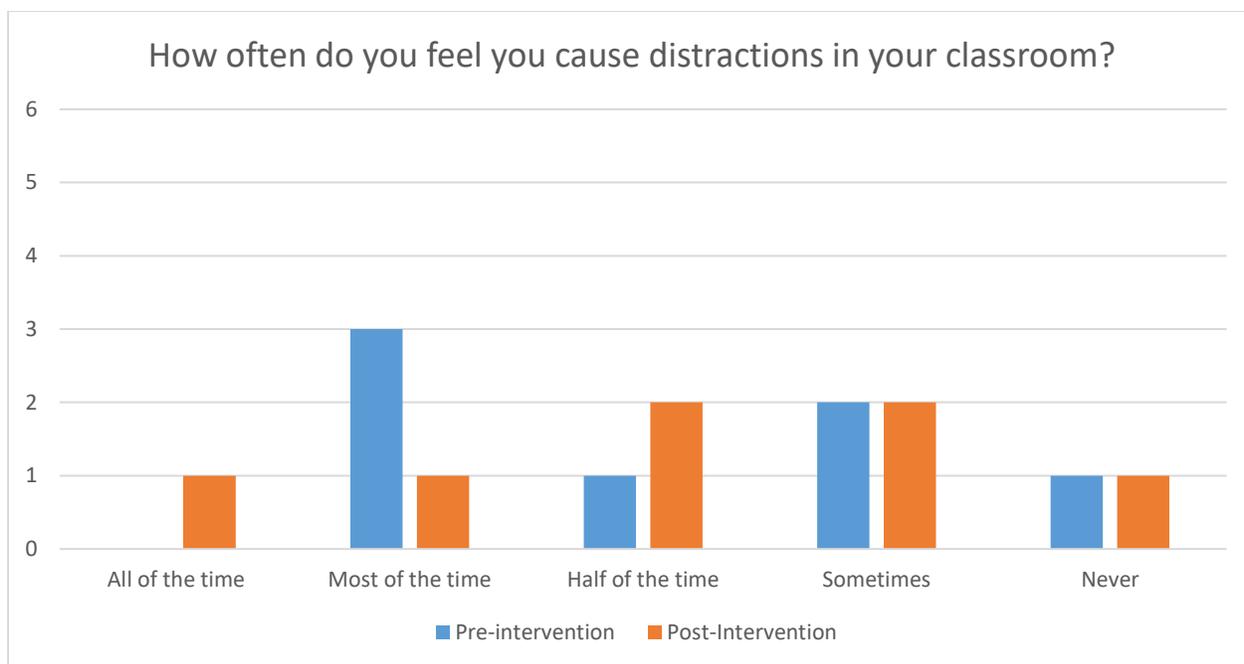


Figure 8 Survey Results Causing Distractions

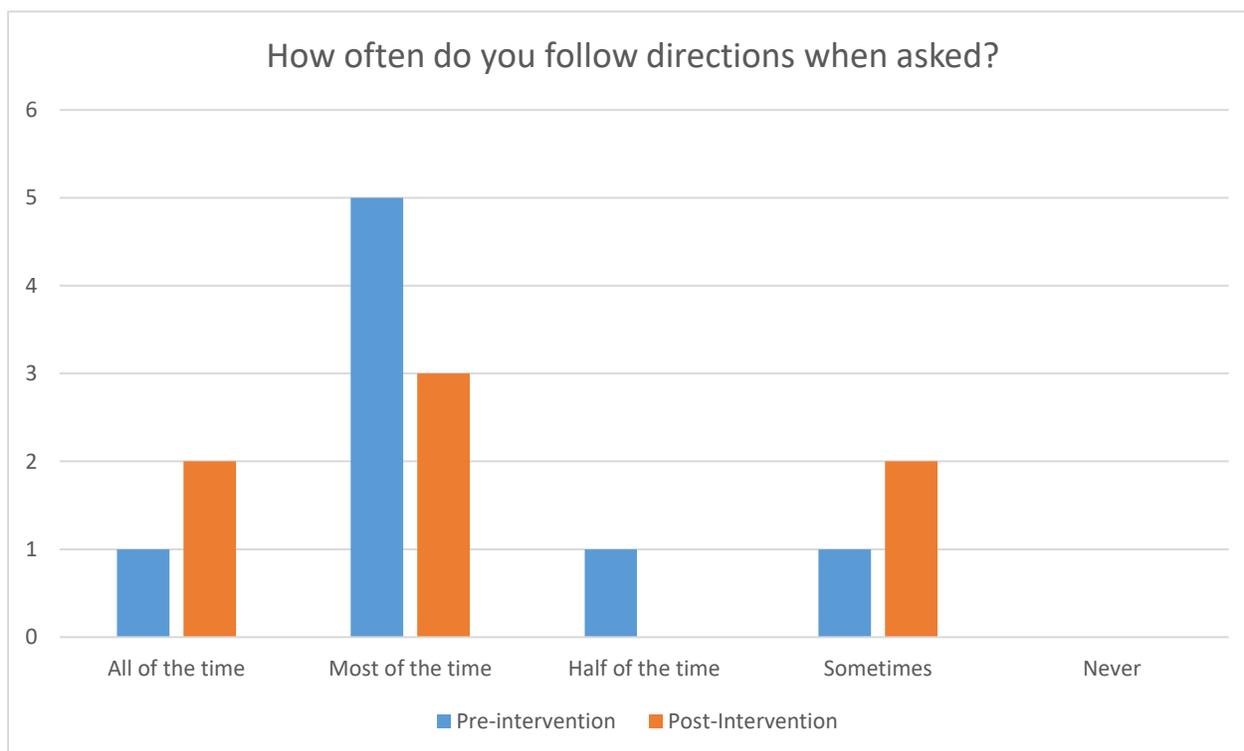


Figure 9 Survey Results Following Directions

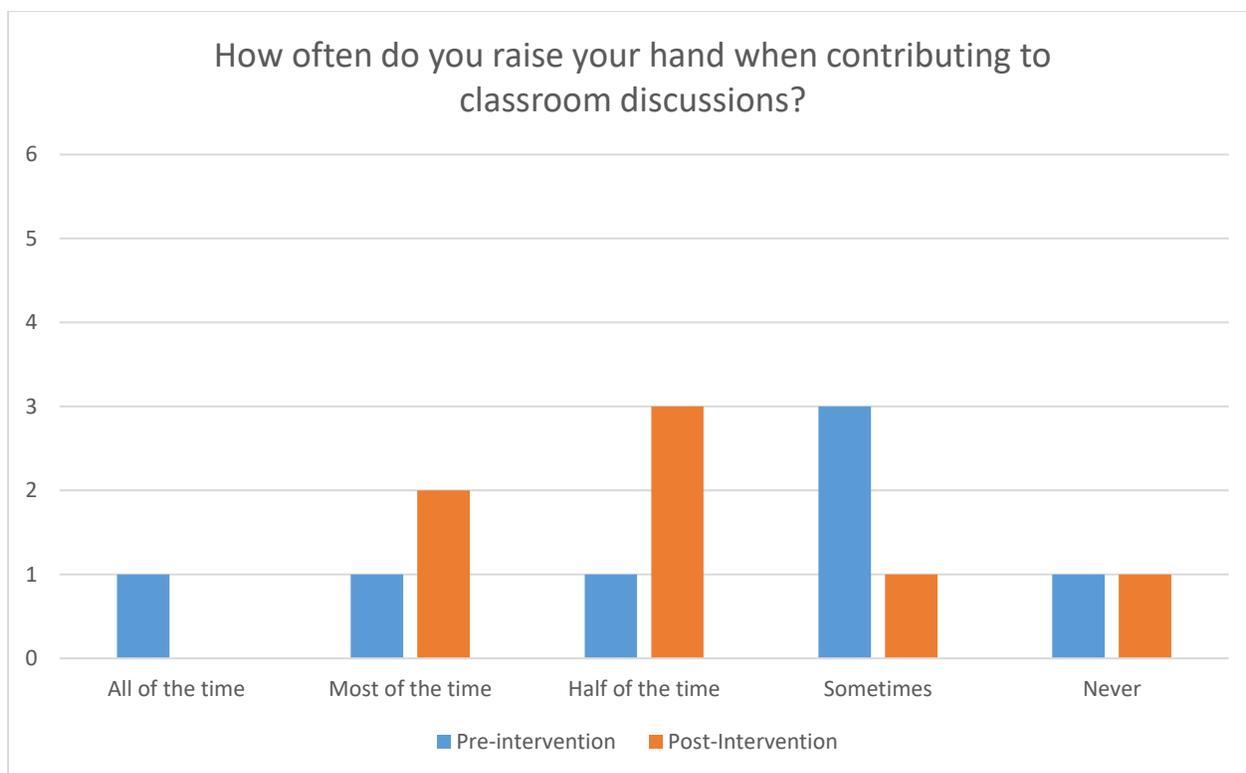


Figure 10 Survey Results Raising Hands

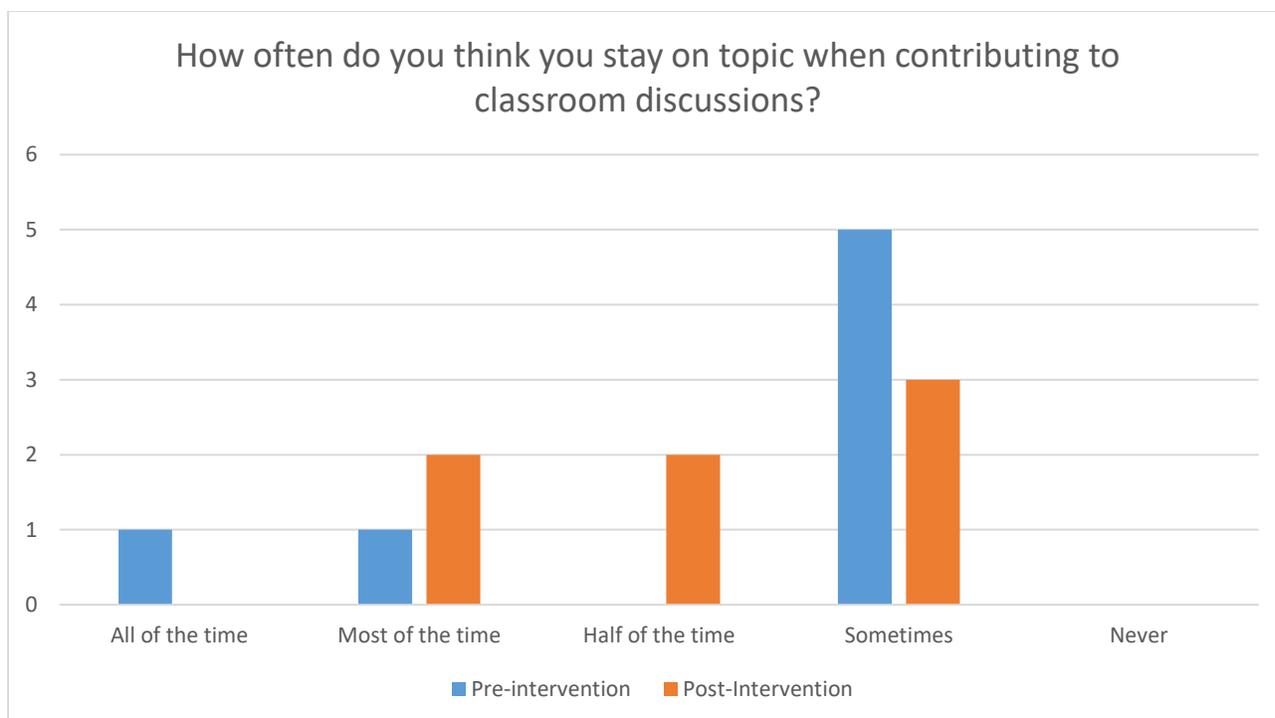


Figure 11 Survey Results On Topic

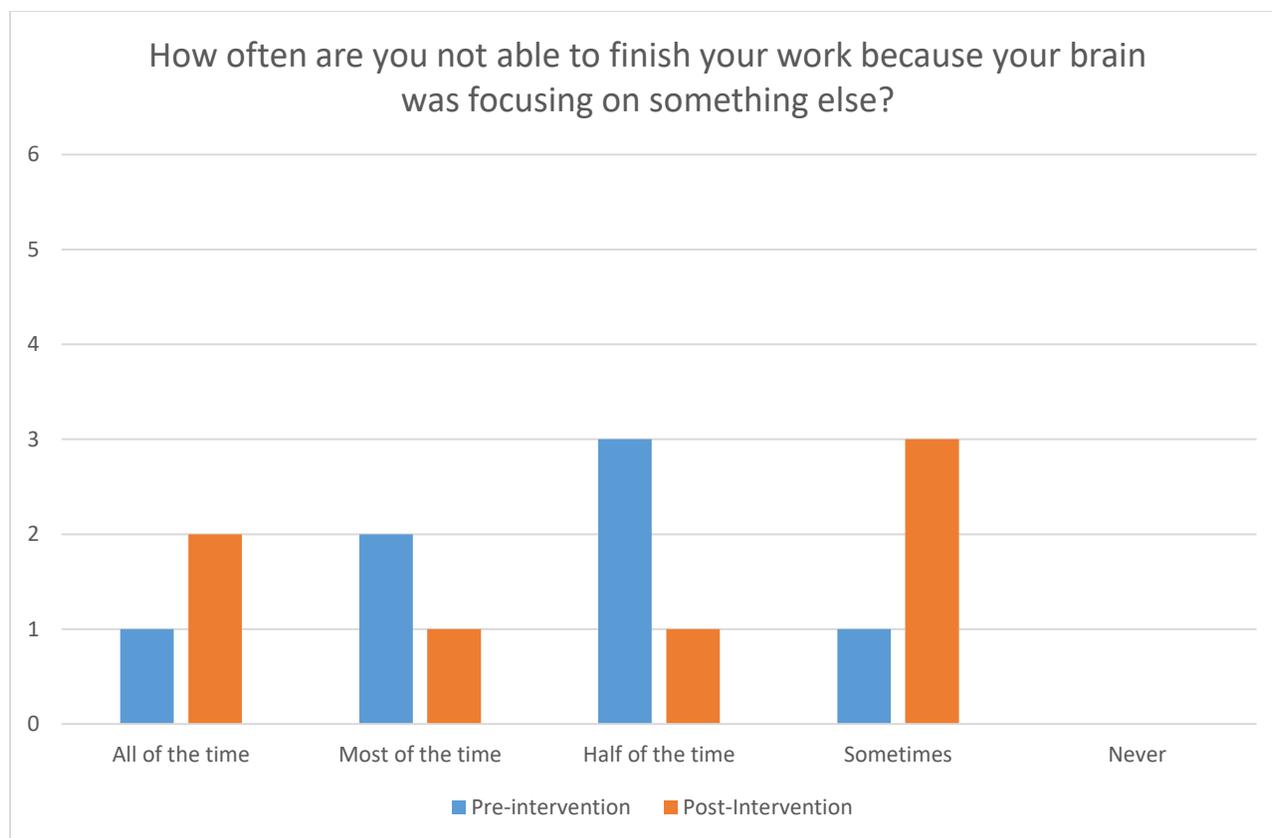


Figure 12 Survey Results Finishing Work

### Target Student's Results

While all students were given the opportunity to complete the survey, I do want to call particular attention to the target students and their perspectives. Reasons for why they responded the way they did will be discussed in chapter 5, but our target students answered the questions as follows.

Questions; How often do you:	Margaret		Alexander	
	Pre-intervention	Post-intervention	Pre-intervention	Post-intervention
Feel you ignore distractions?	Sometimes	All of the time	Sometimes	Half of the time
Feel you cause distractions	Most of the time	All of the time	Most of the time	Most of the time

<b>How often do you feel you follow directions when asked?</b>	Most of the time	Sometimes	Half of the time	Most of the time
<b>How often do you raise your hand when contributing to classroom discussions?</b>	Sometimes	Most of the time	Most of the time	Sometimes
<b>How often do you stay on topic when contributing to classroom discussions?</b>	Sometimes	Most of the time	Most of the time	Half of the time
<b>How often are you not able to finish work because your brain was focusing on something else?</b>	Half of the time	All of the time	Most of the time	Half of the time

Table 1

## Discussion

Since this intervention was implemented with the entire class, I had the opportunity to see how other students besides the target students felt they performed before and after this intervention. One student in particular seemed to improve in all areas except following directions, in which he indicated a higher score of “most of the time” on both surveys. In his comments for following directions he stated that he spaces out a lot of the time, but in his post-survey he said he had a method for the teacher to write down what to do. Another student shared they felt they improved a little and displayed more positive perceptions of skills. The rest of the student did not demonstrate externalizing behaviors in the classroom before the intervention, and contributed similar answers in their pre and post intervention surveys.

However, one of these students identified they “space out” during directions, but in their post-survey they stated they repeated the directions to themselves during directions, which was a strategy outlined in the Following Directions skill. For most of the students in the class, with or without externalizing behaviors, zoning or spacing out was a recorded problem at the beginning of the intervention. Some students shared that they improved on it during the post-intervention survey. Others simply did not bring up the problem again. This result indicates that this intervention does address executive functioning issues for all students in the class.

Some results showed a class-wide change in behavior. In the first question: “How often do you feel you ignore distractions when they happen in your classroom” the initial rating of the students was largely skewed toward the negative. Most of the students surveyed indicated that they ignored distractions only sometimes, and one student indicated they never ignored distractions. Only one student stated they ignored distractions most of the time, thus showing this to be an ongoing issue in the classroom. However, after the intervention, the data shows a more positive trend, with most of the students moving from sometimes ignoring distractions, to stating they ignored distractions half the time, one student stating they ignored distractions some of the time, and another stating they ignored distractions all of the time. This demonstrates a significant improvement in student’s perceptions of how they view they are able to ignore distractions after this intervention.

Individually, the target student responses yielded interesting results as well. For instance, as seen in Table 1 and Table 2, there were some cases in which Margaret felt she improved, while in other areas she indicated more negatively skewed results. The higher ratings in the areas of ignoring distractions and staying on topic during classroom discussions indicate a perception of improved behavior in these areas. However, she scored herself lower on following directions,

and saw herself more of a distraction to others. This is particularly interesting, because of her additional notes in the survey. In her first survey, she stated: “I wish I couldn’t [wouldn’t] be a distraction to the class”, yet in her post survey on the same question regarding distractions she wrote, “They don’t really bother me.” In the other area in which she rated herself lower, following directions, she initially wrote, “Sometimes I don’t want to work on it, but I don’t want to in trouble so I just do it.” In her next survey, she simply indicated that she preferred to have instructions written down.

Alexander’s surveys also provided interesting results. There were more positive answers in regards to ignoring distractions, following directions, and finishing work. There were more negative answers in his post-survey in the area of raising his hand and staying on topic during classroom discussions. What is most noteworthy is that in his initial survey, Alexander seemed to indicate a desire to change his behavior. He wrote in the area of distractions, “I wish I could be less of a distraction.” While in the area of method or listening to directions he wrote, “I space out half of the time. I don’t want to space out. I look on other’s papers.” Yet, in the area of causing distractions, he felt he had not made any gains or decreases, but he did feel he made gain in listening to instructions, and in the post-survey stated his method for following directions was: “Just listen [to] what the teacher said.” Below, their results are organized according to their perceived strengths and weaknesses.

	Pre: Strengths	Post: Strengths	Pre: Weaknesses	Post: Weaknesses	No Change
Margaret	1. Ignoring distractions 2. Staying on topic	1. Following directions	1. Causing distractions 2. Following directions	1. Ignoring distractions	

			3.Raising hand 4.Finishing work	2.Causing distractions (slightly better) 3.Raising hand (seen more of an issue) 4.Staying on topic 5.Finishing work (better result)	
Alexander	1.Raising hand 2.Staying on topic	1.Following directions	1.Ignoring distractions 2.Causing distractions 3.Following directions 4.Finishing work	1.Ignoring distractions (slightly better) 2.Raising hand 3.Staying on topic 4.Finishing work (slightly better)	1.Causing distractions

Table 2

### **Behavior Contracts: Question 3: Did *Skillstreaming* Improve Overall Behavior For Target Students?**

**Behavior contracts.** As stated in Chapter 3, behavior contracts are the already existing behavior management system in the classroom. While students earn dollars and points when engaging in positive behavior, when engaging in negative behaviors they receive marks as part of their daily contract system. Their performance is recorded daily and sent home to parents. Additionally, student ability to participate in preferred activities is affected by whether or not they made contract. Automatic losses are not based on number of marks, but on more aggressive

behavior that would result in a referral or removal from the classroom. Each student engaged in behavior that fell in this criteria 1-2 times in the duration of this data collection. These dates of these events were not recorded due to the fact it would be difficult to compare this data in a qualitative manner.

**Margaret.** Unfortunately, while Margaret made gains in the target behaviors recorded above, *Skillstreaming* did not appear to positively affect her overall classroom behavior. As recorded by the data below, Margaret was beginning to show more externalizing behaviors leading up to the intervention. In fact, on the first day of the program (April 6<sup>th</sup>) Margaret had a record number of marks, 6 in total.

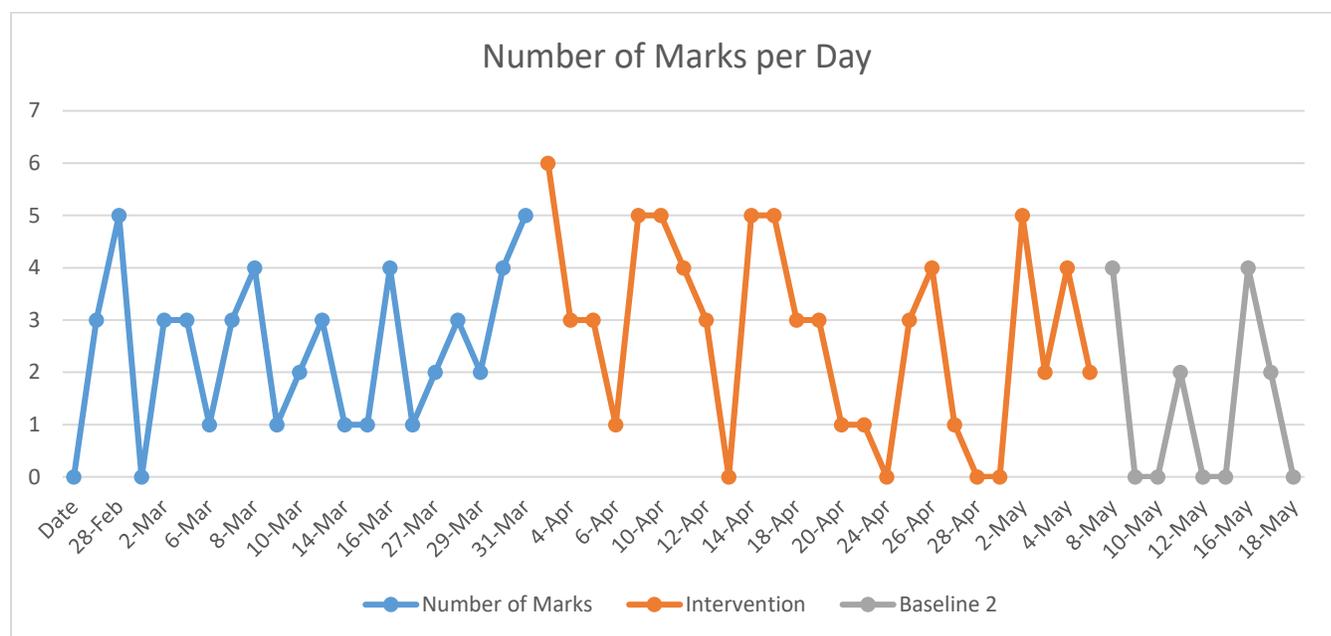


Figure 13 Number of Marks Margaret

**Alexander.** On the other hand, while showing less improvement with his target behaviors, Alexander's overall classroom behaviors did show significant improvement. While

there was a spike in behavior on April 25<sup>th</sup>, after this spike the number of negative behaviors recorded by the contract system did show a decreasing pattern.

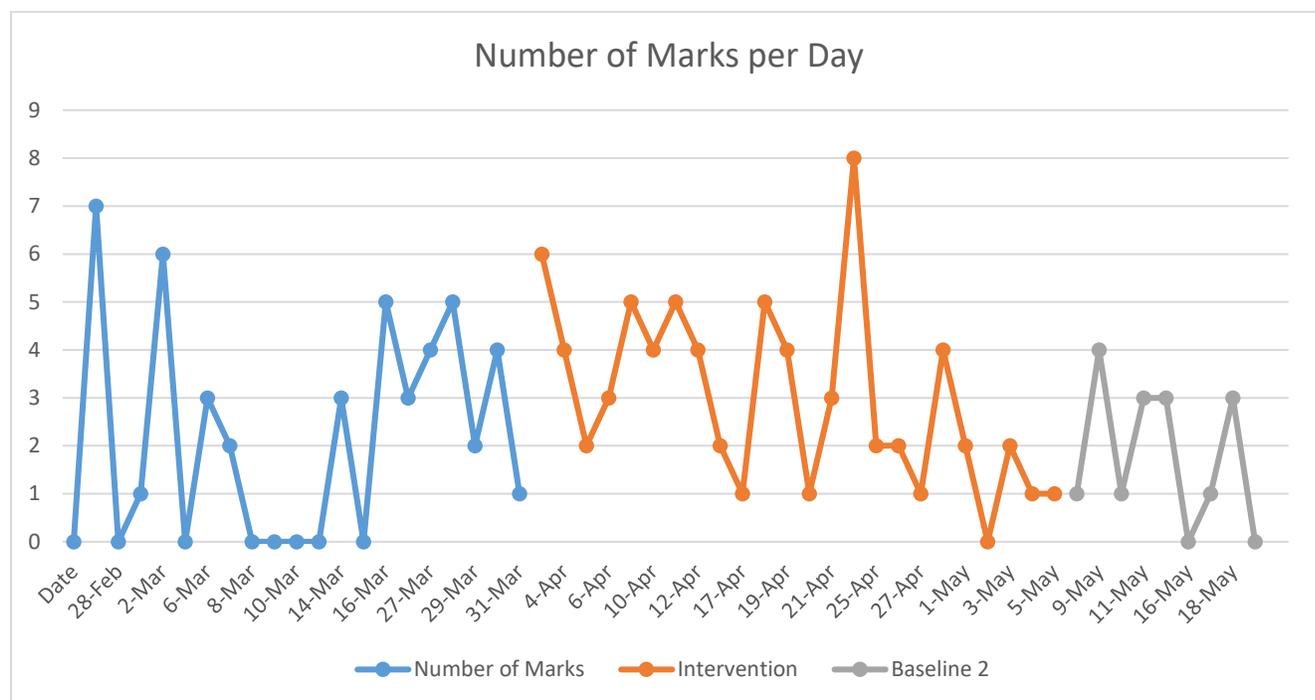


Figure 14 Number of Marks Alexander

## Summary

As stated above, in a reversal design, professionals collect data on a student before and during, and after an intervention. If the intervention is effective, then we should see an improvement in behavior during the intervention, but once the intervention has been eliminated, then the behavior should return to baseline, as students are no longer being supported by the dependent variable. (Cooper, Heron, & Heward, 2007). The behavior targeted should be specific in order to have clear and accurate data (Horner et al., 2005). In this case, this design had a clear behavior of off-topic conversations and the behavior was measured before, during and after the

introduction of *Skillstreaming*. As expected, the data was similar before and after the intervention, but during the intervention there was an improvement in this target behavior.

In addition to the data on the target behavior, the summaries provided excellent insight on how students reacted to the intervention. The surveys showed that as a whole, the class developed more strategies for dealing with navigating a classroom. For the target student, these surveys were important as the target students began to recognize their externalizing behaviors. For example, Margaret often struggled with following directions throughout the school year. However, in her first survey, she did not see this as an issue, yet she recognized this as an issue during her second survey. Alexander had similar results. In class, he often “blurted out” and would rarely raise his hand, and talking as if he was having a one-on-one conversation with the teacher. Yet, on his initial survey he did not think this was a problem, but recognized the problem during his second survey. This in itself indicates growth, as students will make more progress on a problem if they recognize it as an area of weakness.

Finally, overall behavior was recorded from the general classroom system. This was slightly less clear than the rest of the data. While we saw Alexander’s overall behavior improve, Margaret’s behavior did not. Part of this was Margaret’s behavior was already escalating due to factors not related to this project. However, it should be worth mentioning that even during this more problematic time in Margaret’s education, she still was motivated to work on her target behavior.

Based on both the measurement of student behavior, as well as survey results, it can be determined that the *Skillstreaming* program produced positive results in the students with ADHD, as well as for the other students in a special education class. Students improved in their

behavior, were motivated to engage in the program, and gained insight into their behavior.

Analysis and theories for why these results occurred will be discussed in the next chapter.

## Chapter 5: Discussion

According to the findings of Imeraj, Sonuga-Barke, Deschepper, & Roeyers, 2013, students with ADHD have significantly lower levels of on-task behavior, particularly during independent work time, but higher rates of teacher attention increases on-task behavior for all students. The overall goal of this project was to explicitly teach students with ADHD executive functioning skills that would support increases in their on-task behavior. Based on what I experienced in the classroom, student feedback, and the data collected, this project was a success. Students were engaging less in negative behaviors, as well as using strategies that were more productive to the classroom environment. Although the target students of this project will continue to need support from the teacher in their classroom to remain on task, they have begun to develop the executive functioning skills necessary to decrease reliance on adult direction.

Before this intervention while student behavior was addressed with the systems created in the classroom, outside these classroom systems, students were not engaging in appropriate behaviors. While I am a proponent for teacher created class structure that supports pro-social behaviors, my concern for these students was that as they progress to middle school and high school, teachers would provide less and less support. My goal for this project was to ascertain whether or not this program can be used as a long-term tool in a special education classroom as a means for students to progress in their ability to navigate a classroom. The six-week pilot of the program and rigorous data collection provided preliminary me answers to these three questions: 1.) To what extent can *Skillstreaming* be used to improve targeted behavior? 2.) How will the student perceive their progress? 3.) How will the program affect the ongoing behavior in the classroom based on existing classroom structures?

### **Efficacy of *Skillstreaming* to Improve Classroom Behavior**

Our target students, Margaret and Alexander, were able to improve their prosocial behavior in the classroom as a result of the *Skillstreaming* instruction. During the intervention, both students engaged less of the off-task behavior of talking to others. Margaret made an effort to finish her math work during independent time, while Alexander had fewer opportunities to distract his classmates, as they were not engaging with his attention-seeking behavior.

Both students also improved on their ability to not distract the class during whole group instruction as well, which was addressed during this intervention. While they benefited from prompting, they learned that during a class discussion they should not change the topic. After this intervention if they began to change the topic, with a quick reminder of the lesson, both students would apologize and defer to their classmates.

While the change in behavior was very evident to the adults working in the classroom, in just looking at the numbers, the occurrence of the target students' behavior of off-task conversations was not exceedingly high to begin with. This an area worth exploring. I defined off-task behavior narrowly, as simply talking to another students about non-academic topics during a time they were asked to work independently. The reason for this was in keeping with single-case design. During the creation of a single-case design, it is important to be specific in order to hone in on a behavior and determine if it has been changed (Horner et al., 2005). If the behavior is too vague (disruption, aggression), then it is difficult to track. Other off-task behavior was also present, such as staring into space, passing notes, and taking an unusually large amount of time to collect materials needed for the task. I chose the most pervasive behavior in the class. I would have had more instances of off-task behavior if I had been broader on the subject of off-

task behavior. However, if I had been broader, it would have been difficult to determine if the intervention was working. With this specificity, I was able to see a clear change.

Off-task behavior continued to occur in each observation during the pre-intervention and post-intervention phase of the project. Which means that even with academic tasks that a designed at their instructional level, reinforcements of a token system, consequences of a contract system, access to technology, and a short time of expected work, students still engaged in off-topic conversations during independent work time. This indicates the pervasiveness of the issue of these students, and the necessity that it was addressed. While the six-week intervention did not eliminate off-task behavior all together, the fact it dramatically decreased this ongoing problem is very encouraging, especially given all the supports in place to address it initially, which had not yielded as much success until the *Skillstreaming* curriculum was introduced.

**Margaret.** Margaret's progress was more evident than Alexander's in the targeted skills. Both the paraprofessional and I observed her willingness to complete her work, and an interest in improving the targeted behaviors. In fact, most of the negative marks in the data as Margaret progressed came from Margaret telling Alexander to be quiet. Since she was taught that telling other students to be quiet as opposed to ignoring does begin a dialogue, this counted as an off-task behavior. Later, she was the student to advocate that the role-playing should include a "what not to do" so students would be able to compare.

In regards to the behaviors that were targeted, Margaret's attitude indicated a desire to change some of the behaviors that have caused problems for her in the classroom, and the data shows that those particular targeted behaviors did improve. She produced more work during math time, and even told other students to stop bothering her while working. Additionally, what

cannot be found in the data, was Margaret's willingness to work on the given behaviors. When redirected on a behavior that was related to the curriculum, she quickly apologized and redirected herself. She was beginning to catch herself, which was a vast improvement. During the initial observation of Margaret, she relied heavily on teacher redirection to stay on task. Yet, by the end of the intervention, there were incidences in which Margaret was self-motivated and was able to work longer periods of time independently without avoiding work. One of the greatest outcomes of this intervention is when Margaret starting asking if she could write the directions on the board for the class. This type of behavior is in-line with Margaret's wanting to do something different (such as being able to write on the board), but it was a productive activity that not only helped the other students in the class, but reinforced that directions she needed to be following.

On the other hand, Margaret was also beginning the transition to middle school at this time in addition to dealing with outside factors, and new inappropriate behaviors manifested as a result. There were times Margaret yelled at staff and peers over minor issues, and her continued social problems at recess resulted in the loss of friends and bouts of isolation. However, this particular intervention was not designed to address some of the oppositional behaviors Margaret displayed, especially during one-on-one times with teachers or full group instruction. If given more time, I would have begun a second intervention of the program to address these arising issues. Based on her willingness to apply the *Skillstreaming* tools, I believe Margaret would benefit from other *Skillstreaming units*, such as *Dealing with Anger*.

**Alexander.** Unlike Margaret, Alexander did not appear to exhibit the same attitude for change. While Alexander did willingly participate in the program, he did not attempt to apply the steps of skills outside the lessons. This was especially true of ignoring distractions, in which

Alexander continued to attempt to engage in off-topic conversations during independent and computer time. He liked to work on the skits, but outside the skits he did not verbalize his interest in work on these skills.

Yet, his behaviors did decrease, despite his lack of generalizing of the skill. The reason for this appeared to be because of the other students taking on the lessons of this program. When the baseline data were taken for Alexander, the students were actually ignoring his attention seeking behavior at the surprisingly high ratio of 4:1. After the intervention, students were being regularly reinforced for ignoring distractions, leaving Alexander with fewer opportunities to engage in off-task behavior of talking to other students. However, unlike Margaret, Alexander's decrease of off-task behavior or off-task conversations did not appear to increase his on-task work progress, like it did for Margaret, who completed more work.

Yet, it would be hasty to say he did make gains in regards to working on his own behavior. While the improvement in students ignoring his attention-seeking did dramatically impact the results, there were positive shifts in Alexander as a result of this intervention. For example, Alexander indicated on his second survey that he did see that he needed to work on raising his hand and contributing to classroom discussions appropriately. Before this intervention, in spite of this being a focus for Alexander, he did not think this was an issue for him. In addition, as Alexander had fewer redirections, he had more successes, resulting in better results on his overall contract system, meaning less consequences. At this point, Alexander continues to engage in less externalizing behaviors in the classroom. He has returned to school this school year with a more mature attitude, and has expressed in interest in wanting to do well. It should be noted that not only has he stated he wants to do well, he is actually engaging in more appropriate classroom behavior as compared to last year.

Alexander's result also points out the importance of including all students when teaching and supporting behavior. The *Skillstreaming* program positively affected Alexander. His overall behavior did improve, he began to show more realistic perceptions of his behavior, and he did more clearly understand the classroom expectations as a result. However, if this intervention was implemented just with Alexander, I do not believe it would have had the same impact on his behavior. It is because of how much the rest of the class bought into the program that it was able to be successful for him.

### **Summary**

In the reversal form of single-case designed studies, baseline data are collected to establish student performance levels before the intervention phase is begun. The reversal is when the intervention is withdrawn and data are collected to monitor ongoing performance. Theoretically, if performance levels at reversal are similar to those at the baseline phase, researchers can conclude that the changed behavior during intervention was caused by that intervention. (Cooper et al., 2007). After the *Skillstreaming* intervention was introduced in my classroom, the targeted behaviors improved, and once the intervention was taken away, the behaviors returned, showing that the students were changing their behavior due to the lessons. It also means they may continually benefit from interventions that address these particular behaviors, and should continue the *Skillstreaming* program.

While this intervention did not completely eliminate the off-task behaviors, it gave students the opportunity to practice the expected behavior and significantly reduced the problem behavior during the time in which the intervention was ongoing. It should also be noted that this was a somewhat brief intervention, lasting six weeks as opposed to the entire school year. Since

students benefitted so much from the program, it appears that these students may benefit from a longer intervention. However, the behaviors that were associated with the skills taught did improve, even at the independent work stations, in which teacher observation was not available for increased attention. This means targeting was a crucial element to this program. Based on the results, it is supported that continuous, ongoing, targeted instruction of “Classroom Survival Skills” for students with ADHD will decrease negative targeted behaviors, and this treatment should be continued.

### **Students’ Perceptions of Their Progress**

According to survey results, there were behaviors students exhibited that they did not realize were an issue until this intervention. As stated in the previous chapter, Alexander wrote in his initial survey that he raised his hand and stayed on topic during classroom discussions most of the time. This behavior was actually such a problem for Alexander that it was the target behavior in his behavior plan written by the district behaviorist. When the behavior became a focus for the class, he acknowledged in his post survey that he only sometimes raised his hand and stays on topic half the time. This is similar to the findings discussed in the literature review of this project. Miller et al., 1993 found that after using the *Skillstreaming* checklist to target behaviors with students with emotional disturbances that teachers saw improvement, but students did not, as they did not report behavior deficits in the first place, calling into question their ability to self-report. This was a factor during this intervention and lower scores of behavior on some of the post-survey questions may actually indicate growth. Students cannot work on a behavior if they do not know the behavior is an issue.

Another theme that emerged from the survey was the idea of “spacing out.” In the open-ended question, “What is your method of listening to directions?” in which students had to supply a written response, many wrote comments such as, “I space out lots of time...” or “I mit (might) space out sometimes.” This was a common answer for this question, and is important to recognize. This is less of an externalizing behavior that might attract attention of a teacher, such as the target behavior of this project, off-task conversations. However, based on the surveys, this was a more widespread problem across the classroom. It also was the question with the highest positive results. All students who wrote they spaced out in the initial survey wrote a new strategy they use in the post survey. This implies that these students do want strategies to help them be successful students after recognizing a problem.

What I appreciated most about the survey is it really gave credence to how the students took this intervention seriously. I asked students to be honest about their perspectives, and students were. They did not simply give the answer they thought I wanted to hear; they were thoughtful in their answers. Students indicated there were areas in which they thought they made progress, and had an investment in “being ready for middle school.”

### **Changes in Overall Behavior**

The simple answer to whether student behavior improved is this: it depends on the student. According to the behavior contracts that were already part of the classroom system, Alexander’s negative marks per day decreased during and after the intervention. As stated before, this could have been because students learned to the skills of ignoring Alexander, and he had fewer opportunities to engage with others. Alexander also was a student who responded well

to structure, and as I will discuss below, this program greatly added to clarifying expectations in the classroom.

Margaret on the other hand, did not demonstrate overall positive results from the program according to her classroom contract system. Yet, the times that she showed the most progress in her behavior were the times of day targeted during the implementation of the *Skillstreaming* program, such as independent work time and classroom discussions. She began to work more independently, raise her hand during classroom discussions, and started to recognize when she was beginning to get the class off-topic. However, as stated above, her oppositional behavior and relationships with peers were becoming more of an apparent problem, which impacted her performance on the contract system. Unfortunately, Margaret was already demonstrating more negative behaviors in the classroom leading up to this intervention as there were many mitigating factors including significant life changes that were contributing to her increased behavior.

This result does not deter me from the positives found in this program. I feel that based on the issues Margaret was facing at this time that it would be expected that her behaviors would have increased. Again, as stated above, Margaret probably at this point in the school year would have benefitted from utilizing skills from the section, Dealing with Anger. This particular results demonstrates why it is important to have different methods of collecting data. If we had collected data just according to the contract system, we might have missed the nuances of Margaret's growth.

For the rest of the students, negative behavior decreased, and positive behavior increased. Students began asking for directions to be repeated or written down so they could be more responsible, and recognized when they were not staying on topic during classroom discussions.

Even bickering seemed to decrease, as students learned the skill of ignoring others. In the end, it became easier to redirect students for minor issues, because they knew what was expected of them.

### **Significance of Results**

The results of this study indicate that explicit direct instruction in basic “Classroom Survival Skills” can decrease negative classroom behaviors in students with ADHD. The program itself was a system that teachers could easily follow that provided a clear framework for professionals. *Skillstreaming* is recommended based on the results of this study, as well as others cited in the literature review. Some reasons for why this might have been effective are as follows.

One theory is that the program actually gave the teacher a chance to clarify the expectations of the classroom, and in this way, build their prosocial development. According to the literature, navigating the classroom is impacted in a variety of ways for students with ADHD. Students need classroom preparedness skills (Gureasko-Moore et al., 2006), such as being able to self-regulate to wake up on time for class or follow the appropriate steps to complete an assignment. In this case, students were taught the skills necessary to be successful in a classroom.

According to the cited findings of Lane et al., 2005, teachers highly value student skills associated with self-control, such as following directions, controlling their temper, and having appropriate responses. When students are able to execute these skills, there are more opportunities for the class to learn. During my time in the credential program, the idea that was repeatedly reinforced was that the best behavior training comes from the teacher stating what

they want to see the child do, as opposed to what they should not do. We often tell students what we don't want them to do (i.e. "don't run down the hallway") but this does not give them the mental image of how something should be done. We expect students to know how to follow rules and classroom expectations, but the findings of this study leads me to believe that students need lessons on how to actually utilize and grow their executive functioning skills. Each one of these lessons explicitly stated what the child was expected to do while in the classroom. Once the lesson was taught, the students were more successful in meeting these classroom expectations.

In addition to the students learning the skills, focusing on these lessons forced me as the classroom teacher to be more aware of how I was handling behavior. These lessons made me painfully aware of the ways I was not setting students up for success. For example, one of the lessons was how to follow directions. According to the survey, most students stated that spacing out was an issue for them, but I also had students in the class with significant auditory processing deficits, which may or may not have been contributing to the "spacing out". I realized that I should be pairing the auditory directions with written information so they could actually complete the task by having something to refer to. While realizing this oversight was painful, I was happy that students began to advocate themselves on this matter. I did want to continue to promote the student's prosocial behavior, so instead of writing directions on the board before a lesson, I waited until students specifically asked. First this had to be done with prompting, but then students began to do this on their own, particularly Margaret.

In addition, I found I was much more patient in regards to behavior. Instead of looking at negative behavior as "what students shouldn't do," this program helped me to understand that behaviors were simply the result of lacking a skill. If someone does not have a mental picture of what the behavior should look like, then they do not know how to appropriately act. Using

*Skillstreaming* was my opportunity to teach the skills I wanted. This was the same method I would teach a math or reading lesson; and like these topics, children with disabilities need praise, repetition, and redirection to master these topics. It was just a matter of patiently teaching toward and waiting for mastery.

### **Limitations**

Like all projects, we learn as we go along. In this case, I was able to pinpoint a negative target behavior that I wanted to decrease. While this behavior did decrease, there were times students simply engaged in other behaviors such as passing notes or work avoidance. When collecting the data, we had to pick a behavior that was easy to record and obvious, as we were recording while engaging in other tasks. If we had the luxury to only observe, it would have been beneficial to also record a prosocial behavior, such as engaging in the assigned task to ascertain if positive behavior increased as a result of this project and compare this to the negative behavior.

Additionally, not all survey results were able to be included in the project. Most parents did consent to their child's involvement in this project, but not all. Furthermore, absences and other classroom factors contributed to missing survey results, even though these students fully participated in the program. Additionally, the behavior did continue in other settings, such as the computer lab, where the use of prosocial skills was not specifically reinforced. While staff noted improvement in classroom behavior overall over the year, there was not enough time to practice these skills in all settings, which would have been beneficial, as the point of *Skillstreaming* is for students to use these skills in different contexts.

The strength of single-case design is it focuses on the individual (Horner, Carr, Halle, McGee, Odom, & Wolery, 2005; Vannest et al., 2013) which is conducive to special education practices in which student needs are individualized. On the other hand, since single-case designs are so individualized, we cannot make sweeping generalizations. In this project, I found that these two particular students with ADHD had an issue with the behavior of engaging in off-task conversations during independent work time, and that implementing a Social Skills Training program helped reduce this behavior.

The internal validity was strong for this project, as we were clearly able to compare the students to themselves. In a single-case design, each student is their own control group (Horner et al., 2005). On the other hand, the external validity is not as strong, because I can only speak to how the intervention was successful in this setting with these students. As stated in the literature review, ADHD is a very individualized disorder (Wender, 2000) that manifests in different ways for different people. I cannot compare the results of this study with other studies, and there really is not a control group besides the students themselves. In order for this to be generalized, this would have to be repeated in other settings with other students. That being said, with the improvement of both students as a result of this intervention. I can ascertain that *Skillstreaming* was successful in improving the behavior of students with ADHD.

### **Implications for Practice**

After introducing Social Skills Training as a supplement to the ongoing behavior supports in this classroom, I do recommend this practice to other teachers. Before trying *Skillstreaming*, I had piloted another highly recommended program, but did not like the way it was implemented,

and it addressed highly specific problems that happen less frequently, such as bullying. With *Skillstreaming*, I appreciated that the lessons were simple and didn't use too many words so my students could more easily take away the big idea, and there a myriad of different skills that students face on a daily basis. Some lessons were geared for more intensive behaviors such as aggression, while other lessons were geared for students who just need more help becoming more self-sufficient learners. While I feel that *Skillstreaming* was particularly successful in my classroom, I think the bigger take-away is that if teachers with students with ADHD want students to meet their expectations, they need to explicitly teach how students can meet those expectations by use of evidence-based practices.

Whichever program is chosen for a classroom, based on the outcomes of this class, I would suggest a program that has the role-playing component that was present in *Skillstreaming*. Even the older students in the class (sixth graders) were engaged in this practice and it was also what made the lessons the most concrete for students. It is one thing to recommend behavior for students, but it goes much further to actually practice those behavior and create a context for them.

### **Further Research**

What is interesting is the ripple effect this program had on the other students. Daily, two students would engage in small arguments during independent time. One student was a male student on the Autism Spectrum, while the other student was a boy with ADHD as well as other comorbid disabilities that made him ineligible as a target student. They needed 1-2 redirections per independent period to separate from each other. After the introduction of *Skillstreaming*, this behavior significantly decreased. Since these two students were not target students, this

particular behavior was not measured to an extent that could be applied to this study. However, the student diagnosed with ASD did state that they were “ignoring the distraction.” Previous studies with *Skillstreaming* have shown this to be an effective tool for students with autism (Lerner & Mikami, 2012), and based on the observations in the classroom, this might be an area worth continued exploration.

One of the themes found in the literature review was students with ADHD inattentive type are most at risk for school failure due to their inability to learn basic skills needed to navigate a classroom (Langberg et al., 2011). This is very similar to what I saw in my students who are classified as learning disabled. Most of the class has very few externalizing behaviors, but many stated that spacing out and missing directions was something they struggled with. I do think that these types of executive functioning skills need to be addressed for all students, even if their behaviors do not negatively impact the class. Students with disabilities need to be continually taught skills that will help them in middle and high school.

### **Summation**

As most teachers, I initially struggled with the idea of adding one more curriculum to the classroom. There are so many areas to cover with academics, and in the world of special education, there are functional skills to address as well. What I can unequivocally say though, is the time was worth it, because it resulted in enhanced engagement during the academics. During my time in the master’s program I learned that the goal of special education students is self-determination. By decreasing the prompt-dependence on the teacher, students were building their independence and becoming more self-determined learners. The extra time dedicated to attending to behavior actually increased the effectiveness of the academics.

In addition, because the students loved the role-playing element of the program, they had buy-in in the curriculum and looked forward to working on the skills. The practice of repeatedly creating skits also allowed students to work together and problem solve in a way they felt comfortable and familiar with, which in turn positively affected classroom culture.

In summation, this program did not only decrease the negative behavior that was disrupting the classroom, it enhanced the student's learning in a variety of ways. Students began to learn strategies to deal with issues that interfered with their learning, such as "spacing out." The participants also learned tools for how to deal with their peers, especially peers that may be distracting to their work. Finally, students began to show more insight into their own behaviors. I highly recommend those who teach special education to consider adding this prosocial element to the classroom.

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## Appendix A: IRB Consent

### **Informed Consent Form: Skillstreaming: Teaching Classroom Survival Skills**

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Dear Sir or Madam:

Your child is invited to participate in a research project with Sonoma State University (SSU). As part of this project, your child will continue receiving full day Special Education services. In addition to their academic curriculum, students will also receive instruction in “Classroom Survival Skills,” otherwise known as executive functioning skills. These are the social and academic troubleshooting skills necessary for upper elementary and beginning middle school students. Skills include contributing to classroom discussions, beginning a task, and ignoring distractions. The reason for this study is as students approach middle school, organizing, planning and navigating a classroom becomes simultaneously more complicated and more essential to success. The results of this study will not only shed light on how to support students with learning disabilities in this area, but will also help your child’s teacher gather information on how to best prepare upper elementary school students to become independent learners. Your child was chosen because of their qualification for Special Education services and their enrollment in an upper elementary SDC placement. Your consent means that your child will:

- Be a case study subject, where their progress during the study period will be used to demonstrate the effectiveness of the program *Skillstreaming* with supplemental activities and materials. While the identity of your child will be protected, observational information, data, and quotations may be used in research publications to demonstrate the evolution of their Classroom Survival Skills during the study.
- They will be told they are participating in a program that is intended to increase their ability to be successful as they move up grade levels and graduate to middle school.
- Continue to receive the same specialized academic instruction they currently receive, thus ensuring your son/daughter’s continued progress toward his/her IEP goals.
- Work collaborative with the class on developing skits, group activities and sharing of progress.
- Complete two brief surveys at the beginning and one at the end of the study. These surveys are designed to determine if students internalized the lessons of this program.

It is important to note that **the identity of your child will remain completely anonymous. Your child’s name or pictures of your child working WILL NOT be used or published in this research.** The potential benefit for participating in the study is that your child

will continue to receive the same high quality individualized instruction while also contributing to a growing body of educational research. You will not receive any remuneration for your participation

If you choose to take part in the study, only the research project staff will have access to survey information and results. Your child's name will never be used in any published reports. Your decision to take part in this research study is entirely voluntary. If you decide to participate, you are free to withdraw your consent and to discontinue participation at any time without prejudice.

You may wish to discuss this with others before you agree to take part in this study. If you have any questions about the research now or during the study, please contact the project director(s), Carolyn Samples-Alarie (707) 524-2960 or Dr. Jennifer Mahdavi, (707) 664-3311.

Sincerely yours,

Carolyn Samples-Alarie  
Special Day Class Teacher  
Master's of Education Candidate  
Sonoma State University

Dr. Jennifer N. Mahdavi  
Associate Professor  
Department of Special Education  
Sonoma State University

Finally, questions about SSU policies regarding human subjects in research may be directed to:  
The Institutional Review Board/Human Subject Committee

Email: irb@sonoma.edu

Phone: 707.664.3972

**Statement of Consent:**

I have read the above description of this research study. I have been informed of the risks and benefits involved, and all my questions have been answered to my satisfaction. Furthermore, I have been assured that any future questions, I may have will also be answered by the researchers. I understand I will receive a copy of this consent form.

Print Participant Name: \_\_\_\_\_

Print Parent or Legal Guardian's Name:

\_\_\_\_\_

Signature of Parent or Legal Guardian:

\_\_\_\_\_

Signature of Principal Investigator \_\_\_\_\_

Date consent signed: \_\_\_\_\_

May 9, 2017

RE: IRB #2811, "Skillstreaming: Teaching Classroom Survival Skills"

Dear Ms. Samples-Alarie,

I am pleased to inform you that your application to the Sonoma State Institutional Review Board has been reviewed and approved as Category A-1 Exempt. This approval is effective from May 9, 2017 and has no expiration date.

Please contact the IRB at [irb@sonoma.edu](mailto:irb@sonoma.edu) immediately if you encounter unforeseen difficulties or make significant changes to your planned procedures. We would also like to be notified when your project has been completed.

We wish you the best in your research endeavors.

Sincerely,

Patrick Jackson

IRB Chair

Sonoma State University

[707.664.2126](tel:707.664.2126)

Appendix B: Behavior Contract and Daily Report Card

Behavior Contract

NAME \_\_\_\_\_ WEEK OF \_\_\_\_\_ % \_\_\_\_\_

Target Behavior(s)	1		2			3		
Behavior	Monday	Tuesday	Wednesday	Thursday	Friday			
<b>Responsible: Making Good Choices</b>								
I will have class materials, contact Sheet, & HW completed.								
I will follow directions promptly								
I will stay on task and ignore distractions.								
I will seek positive attention								
I will accept consequences & take appropriate time away.								
I will work on improving my target Behaviors (3 marks in one area).								
<b>Respectful: Being Polite and Cooperative</b>								
I will use respectful language & gestures.								
I will use prosocial skills to get along with others.								
<b>Safe: Staying Healthy and Injury Free</b>								
I will respect the personal space of others.								
I will have safe, appropriate transitions @ school & on the bus.								

Name:

Date:

Daily Contact Sheet

School Behavior

Made Contract

Did Not Make Contract

---

Homework \*Read 20 minutes a night

Reading:

Math:

---

Comments

Parent Initials \_\_\_\_\_

---

Name:

Date:

Daily Contact Sheet

School Behavior

Made Contract

Did Not Make Contract

---

Homework \*Read 20 minutes a night

Reading:

Math:

---

Comments

Parent Initials \_\_\_\_\_

---

## Appendix C: Example of a daily schedule. (Monday)

8:30	Daily Oral Language Roll
8:45	Reading Lesson
9:45	Earned Break
10:00	Reading Lesson
10:35	Recess/Laps
11:00	Math Groups
12:30	Lunch/Laps
1:15	Project
1:45	Game
2:00	Ignoring Distractions
2:30	Earned Break
2:45	Pack-up
2:54	Bye

## Appendix D: Rules:

Rules were created by the students themselves on the first day of school. These rules included:

Walk in the classroom

Be nice and helpful to others

Listen to the teacher

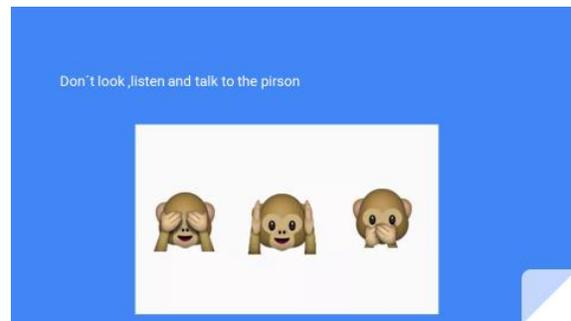
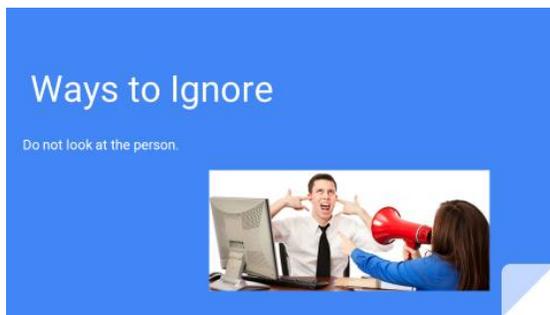
Do your best work.

## Appendix E: ABA Form:

Antecedent	Behavior	Consequence
------------	----------	-------------

Student comes in late	Hands Paraprofessional Excusal form	Paraprofessional says, “thank you for coming in quietly.”

Appendix F: Student Work: PowerPoints, class brainstorming, and desk notecards (Ignoring Distractions)



Keep working



Count to five



Walk away



You can move to different desk



# HOW TO IGNORE

## Do not look at the person



## Walk away somewhere else



## Ignore them



## Tell the teacher



## Build a wall



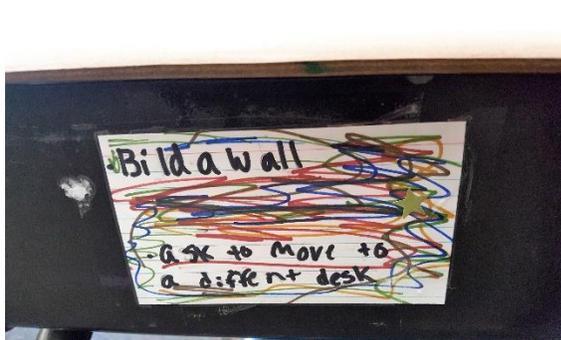
WAYS TO IGNORE DISTRACTIONS

① get a pen  
 ② Pick two strategies  
 ③ Write them on your paper  
 ④ Decarte your card  
 ⑤ When done keep at your desk and try to keep it neat

Ignoring Distractions

- 1) Count to five.
- 2) Say to yourself, "I won't look. I'll keep on working."
- 3) Continue to work.
- 4) Say to yourself, "Good for me. I did it!"

9:30 Roll Roll  
 9:45 Sackets Monies  
 10:00 EB  
 10:15 IXL  
 11:00 Ignoring Distractions  
 11:30 Computers  
 12:30 Lunch  
 5 Essay  
 00 Game Science  
 30 EB  
 40 Pack  
 2:04 Check in Bye



Appendix G: Student Work: Following a recipe (Following Directions)

