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USING SELF-MANAGEMENT STRATEGIES TO INCREASE ON-TASK  
BEHAVIOR OF STUDENTS WITH ADD/ADHD

by  
Carolyn M. Porretta Grossi

A Thesis

Submitted in partial fulfillment of the requirements of the  
Master of Arts Degree  
of  
Special Education  
at  
Rowan University  
April 25, 2002

Approved by \_\_\_\_\_  
Professor

Date Approved 4/25/2002

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## ABSTRACT

Carolyn M. Porretta Grossi  
Using Self-Management Strategies to Increase On-Task Behavior of Students with  
ADD/ADHD  
2001-2002  
Dr. Joy Xin  
Master of Arts in Special Education

This report describes the results of a self-management program to increase on-task behaviors of students with ADD/ADHD in an inclusive setting in a suburban community in the northeastern United States. Three 8<sup>th</sup> grade students participated in the study. The students' appropriate responses, inappropriate actions and inappropriate vocalizations were observed prior to and after self-management skills were introduced. The types and frequencies of behavior occurrences that were observed and recorded in the study were appropriate phrases, comments on topic, appropriate voice, inappropriate vocalizations, noises, talking to neighbors, name calling, walking around the room, banging and touching a neighbor, fooling around and drawing during class when other directions had been given.

Baseline data was collected at 10-second intervals for 10 minutes during an uninterrupted period at the beginning of class each day for 2 weeks. Self-management strategies were taught for 3 days and the intervention lasted 15 days. The data showed that students' appropriate responses increased through the use of the self-management strategy. The data supports that self-management is a useful tool for students with ADD/ADHD in an inclusive classroom.

## MINI-ABSTRACT

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## ACKNOWLEDGMENTS

This is dedicated to my husband Gene, and my son Sammy for all the support you have shown for my studies and the unconditional love you display each and every day. I could not have done this without your love, support and patience. I thank God everyday for my family. Also, thank you to my unborn child for cooperating.

To my mother, father and sister, who instilled in me to work hard and play hard and that a hard days work does not go without a reward. You have supported me in all of my endeavors, however random or immeasurable, and loved me unconditionally. To my sister, thank you for the encouragement to go back and take classes when I did, telling me not to wait was the push I needed. Had I waited, I may never have gone back. You give me the strength to be the person I am today.

To Elaine and Gene Grossi, for being flexible and always putting your grandchildren first. Your dedication to this family is amazing and I am proud to be a part of your family.

To Jessica Lovinsky, for the love and the support you have shown to me and my family by rearranging your life to help us and take care of Sammy when I needed to write or to study. Also, thank you for helping me edit and revise. You are loved more than you know by our family and I do not know what we would do without you.

In addition, thank you to all those who helped me complete this paper including those who supported me in my project, helped me write my paper, aided me in my research, created my graphs, and comforted me in my stress.

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## Chapter I

### *Introduction*

#### *General Statement of Problem*

In middle school settings distracting behaviors lead to a decreased time on task, which compromises the quality of the class instruction (Brooks, 1999). It is found that emotions are the roots of distracting behaviors at this age and it is important for teachers to understand what students' words and actions represent (Brooks, 1999). Being aware of one's own feelings and behavior is critical in social skills development of adolescents (Elias, Zins, Weissberg, Frey, Greenberg, Haynes, Kessler, Schwab-Stone, & Shriver, 1997).

Poor concentration in class often leads to disruptive behaviors. Students with Attention Deficit Hyperactivity Disorder (ADHD) were reported by teachers to display disruptive behaviors such as inappropriate comments, inappropriate voice and daydreaming (Brooks, 1999). Inappropriate behaviors were regarded as the most disruptive and the most common form of distractions (Brooks, 1999). Peer relationships are increasingly influential during early adolescence thus the disruptive behavior of one student with ADD can be detrimental to a whole classroom because one student may influence another to goof-off (Elias et al., 1997).

Positive classroom behaviors positively affect student's learning (Brooks, 1999). The better the learning environment, the more a student pays attention, the less distractions and the more students will learn (Barkley, 1998). When students engage in

disruptive behavior, it is impossible to pay attention. A component to staying focused is to develop self-discipline (Brooks, 1999). A safe environment where there are rules and expectations that are predictable and fair, fosters thoughtful participation and discussion in class (Brooks, 1999).

With self-management, students have an opportunity to address their actions and emotions that may cause their behavior problem (Barkley, 1998). Barkley believes that students with ADD have difficulty with “wait time” and, therefore, they cannot place their emotions on the “back burner” to deal with them at a later time, which is something required in the classroom (Barkley, 1998). As a result, these students are viewed differently, reprimanded and punished with traditional methods of class management (Barkley, 1998).

According to Brooks (1999), self-management can help to change behaviors because it will “teach students how to react in schools just as they learn how to act in theaters and churches” (Wayson & Pinnell, p. 115). Good behaviors are the key to success and self-management and self-discipline will help improve the individual behavior and classroom climate (Grossnickle, 1989; Barkley, 1998). Learning to self-manage has been linked to increased self-discipline and motivation (Grossnickle, 1989; Barkley, 1998).

Research has shown that self-management can be taught to children with ADD and that on-task behaviors can be improved with implementation (Barkley, 1998). Studies have been conducted on self-management on small groups of children with disabilities in a resource placement (Brooks, 1999), a whole class approach with elementary students (Davies & Witte 2000), and clinical studies in day-treatment

facilities (Pelham et al., 1992, Runnheim et al., 1996). In all cases, self-management has proven to be a timesaving, effective approach for teachers and regarded as an acceptable way to improve class climate and behavior (Pelham et al., 1992; Mitchem, 2001). Few studies, however, have been done on self-management on children with ADD/ADHD in an inclusive environment.

In addition to positive classroom behaviors, classroom management is also a top rated concern of educators (Mitchem, 2001). Traditionally, students are required to pay attention and to stay on task. In addition, students must be willing to learn, cooperate and follow directions. Disruptive and off-task behaviors are most of the behaviors that teachers complain about regularly (Piffner & Barkley, 1990). Inappropriate behaviors, comments and actions in the classroom are characteristics of students with ADD (Barkley, 1998). It seems that being able to control behavior is a challenge for these students. Self-control and self-management skills may assist them to manage their own behavior and to increase on-task behavior in class (Brooks, 1999). If students with ADD can learn self-management skills, they can learn to deal with their own behavior problems (Elias et al., 1997). These skills seem more important for these students when they are placed into an inclusive setting with diverse peers in class.

#### *Significance of the Study*

It has been found that in the long-term, self-management has not only been shown to be effective, but it is time saving (Mitchem, 2001). Step-by-step problem solving can be taught to a child to deal with his/her conflict or emotional discomfort. In the past, research has focused on small groups of children with disabilities in a resource placement (Mathes & Bender, 1997), a whole class approach with elementary school students

(Davies & Witte, 2000), and clinical studies in day-treatment facilities (Pelham et al., 1992; Runnheim et al., 1996). So far, many studies are conducted in short-term with limited time periods. Moreover, there is limited research that has addressed the effectiveness of self-management in inclusive settings (Hoff & DuPaul, 1998). This present study created a new instrument with an attempt to teach children with ADD/ADHD self-management skills. It is hoped that the study would add to previous research in the area of self-management in an inclusive environment.

#### *Statement of the Purpose*

The goal of the study was to expand previous research studies in the area of self-management of behaviors and extend research on class-wide self-management programs. A step-by-step process was used to teach self-management techniques to students with ADD/ADHD. The study also attempted to increase on-task behaviors in an entire class and targeted specific individuals for the purpose of decreasing interruptive behaviors over a long period of time. Moreover, the goal of this study attempted to contribute to the education in a practical way to demonstrate an example for other teachers working with children with ADD/ADHD.

The purpose of this study was to evaluate the effectiveness of self-management strategies for students with ADD/ADHD, to increase on-task behaviors and to decrease disruptive behaviors. The goals of this study were to determine (a) whether or not disruptive behaviors decrease when self-management techniques were taught to students with ADD/ADHD in an inclusive setting and (b) whether or not conflicts decreased when self-management techniques were taught to students with ADD/ADHD in an inclusive setting.

### *Definition of Terms*

1. ADD- A term used to describe a set of negativistic behaviors that co-occur during childhood, which are referred to collectively in the Diagnostic and Statistical Manual of Mental Disorders fourth edition (1994) as: Attention-Deficit and Disruptive Behavior Disorders. There are three subgroups of externalizing behaviors: Oppositional Defiant disorder (ODD), Attention Deficit Hyperactivity Disorder (ADHD), and Conduct Disorder (CD) (American Psychiatric Association, 1994; Duff, 2000).

2. Self-Management- Self-management is a psychological term used to describe a strategy that helps students take responsibility for their own behavior in a classroom (Edelson, 2001). There are three components to self-management, which are self-monitoring, self-evaluation and self-reinforcement (Edelson, 2001). Self-monitoring requires the monitoring of a target behavior at short intervals to teach the person to become more aware of his/her own behavior (Edelson, 2001). Self-evaluation requires a person to determine whether or not he/she engaged in the target behavior in relation to the goals that have been set (Edelson, 2001). Self-reinforcement refers to self-delivery of rewards for reaching the goals that were set (Edelson, 2001).

3. On-task Behavior- On-task behaviors were defined in this study as appropriate responses in class. Examples given to students of appropriate on-task behavior included such behaviors as comments on the topic being taught, use of appropriate voice and use of appropriate phrases when asking or answering questions or making comments in class. Students would be considered on-task if they were sitting quietly and listening, working

on an assignment, being respectful, listening to the teachers, following directions of an assignment, being seated, raising hands to answer questions or keeping hands to themselves.

4. Off-task behavior- Off-task behavior was defined in this study as inappropriate actions in class. Examples given to students of inappropriate off-task behavior included such behaviors as inappropriate comments, calling out, students out of seat and fidgeting, not following directions, name calling, walking around without permission, talking to a neighbor, making noises, touching a neighbor or touching a neighbor's belongings.

5. Conflict- Conflict was defined in this study as inappropriate vocalizations toward classmates. Examples given to students of inappropriate vocalizations to students included such behaviors as name calling and negative verbal statements directed towards peers.

### *Research Questions*

1. Will students with ADD/ADHD increase on-task behaviors such as comments on the topic, appropriate voice and appropriate phrases when they are trained to use self-management strategies?

2. Will students with ADD/ADHD decrease off-task behaviors and inappropriate actions such as walking around without permission, touching a neighbor, fooling around and drawing during class, walking around without permission and banging when they are trained to use self-management strategies?

3. Are the incidents of conflict and inappropriate vocalizations among students such as name-calling, banging, talking to a neighbor and making noises decreased when students with ADD/ADHD are trained to use self-management strategies?

## Chapter 2

### *Literature review*

#### *Approaches to Behavior Management*

An effective behavior management plan could be life changing for families experiencing difficulties with a child with ADD in school (Barkley, 1998). A large amount of research has addressed different behavior management strategies for managing behavior for students with ADD/ADHD. There are three prevalent approaches to behavior management for students with ADD/ADHD. These are medication, behavioral modification and self-management. This chapter summarizes some approaches and their effectiveness.

*Medical approach.* Ritalin is the most frequently prescribed medication to treat ADD (Runnheim, Frankenberger & Hazelkorn, 1996) According to Runnheim et al.; Ritalin is used three times more in the United States than in the entire world. Runnheim and colleagues conducted research based on a survey of 396 teachers who provided information about their students receiving medication (Runnheim et al., 1996). They found that the teachers reported an increase in the use of medication for children in class throughout their teaching careers (Runnheim et al., 1996). Current statistics regarding usage rates show that 40% of elementary, 32% of middle school and 15 % of high school-aged children receive medication for ADD (Barkley, 1998). Runnheim et al. also found that the most commonly prescribed dosage of Ritalin is 30 mg a day (Runnheim et al., 1996). It is revealed that teachers believed that children taking medication responded

positively in the classroom and that the medication effectively reduced maladaptive behaviors. Meanwhile, 96% of the teachers found it necessary to employ a system of behavior management for students with ADHD (Runnheim et al., 1996).

However, there is a lack of research in the area of response to stimulant medication in the classroom (Forness, Swanson, Cantwell, Guthrie, & Sena, 1992). Consequently, Forness and colleagues conducted a study with 71 boys diagnosed with ADHD from 7-11 years old who had been self-referred to the UCI Development Center, which focuses on the treatment of ADD. The study attempted to measure how children respond to stimulant medication, such as Ritalin, cognitively, academically and socially (Forness et al., 1992). Two sites were used for research samples of participating boys. A double-blind placebo was used to analyze how children with ADD respond to stimulant medication. Three dosage levels and a placebo were determined with medication given 4 times a day. Preset dosages, high, medium, low and placebo were randomly administered throughout the day. The assessment took place across 6 measures as related to school performance throughout a 5-week study period. Participants were required to complete cognitive, academic and behavior tasks and required to master two consecutive tasks in each of the three areas before completing the study.

Results of the study revealed that the level of favorable response to medications was 50%, lower than the national average (Forness et al., 1992). Moreover, the acquisition of new material and basic skills was significantly lower, in the 30% range, and the behavioral response or elimination of undesirable behavior was higher, near 60%. Therefore, whether or not a child can be considered a responder to Ritalin depended on the type of outcome a study was measuring (Forness et al., 1992).



According to Pelham, Murphy, Milich, Vannatta, and Licht (1992), medications are a routine component in a treatment regimen and although positive responses have been found with regard to behavior, medication can have an adverse effect on cognitive and motivational factors. However, few studies have examined the relationship between medication and cognitive motivational factors (Pelham et al., 1992). Pelham and colleagues postulate that medications discourage self-regulation and may lead children to causal attributions for their behavior and motivational states.

Such concern over the adverse effects of medication on cognitive motivational factors led to research on the causal attributions of medications. That means that while Ritalin may have positive effects in the short term on behavior, it may have long lasting effects on the attitudes about the causation and the solution of problems (Pelham et al., 1992). An 8-week trial was conducted in a psychiatric clinic for 28 ADHD boys, ages 7-11 (Pelham et al., 1992). Each day, the boys were given medication and were required to self-record their reactions and emotions through a questionnaire at the end of the day. The results indicated that the boys attributed their successes to internal effort, but failures to the medication (Pelham et al., 1992). Although the boys' medication improved internal effort, participants were aware of self-monitoring. In addition, the participants' responses were positive to medication for behavior and dysfunctional attributions were not apparent (Pelham et al., 1992). Moreover, results showed that the learners had a healthy effort pattern and a more improved internal effort (Pelham et al., 1992).

According to Barkley (1997), individuals with ADD/ADHD do not have a true perception of their own behaviors and are unrealistic about their behaviors at times. Because individuals with ADD/ADHD have a problem regulating their inhibitions, they

are incapable of the mental shift in thinking to realize that their behavior is inappropriate. Therefore they have a very difficult time with ideas of past and present (Barkley, 1997). Based on Barkley's theory it is contested that a study, which relies solely on the self-recorded behaviors, would not be reliable and the question of whether such a study would have a negative effect on causal attributions cannot be truly answered.

Runnheim et al. (1996), Forness et al. (1992), Pelham et al. (1992), and Barkley (1997) conclude that the medication alone is not enough to help children with ADD/ADHD and some form of behavior modification is necessary. Although small doses of Ritalin have been found to be academically beneficial, small doses do not curtail undesirable behaviors in the classroom (Runnheim et al., 1996). Conversely, large doses of Ritalin work to control behavior but seem to have a negative effect on learning and achievement and actually seem to impede learning (Runnheim et al., 1996).

The study concluded that dosage level was one of the most important considerations when determining the efficacy enhancing achievement and behavior (Runnheim et al., 1996). Few studies have addressed the rate of medication in the classroom and the effects of the stimulant medication in the classroom (Runnheim et al., 1996). Of the few studies focusing on response to medication, the results are inconclusive. Forness and colleagues (1992) found a 50% response rate to medication only, while 70% of individuals with ADHD have a response to medication at the national average (Runnheim et al., 1996). Medications other than Ritalin prescribed for ADD were not studied, therefore, the results cannot be generalized. It seems that research on the response to medication needs to be a continuous and collaborative effort in the future (Forness et al., 1992).

*Behavioral approach.* Behavioral management is one approach suggested for managing behavior of children with ADD/ADHD, especially reinforcement strategies.

A token reward system was one strategy provided by teachers within the classroom whereby students receive tokens as a reward for their good behavior. Token economy programs can be individual or group based, and the behavior to be monitored is predetermined (Barkley, 1990; Pfiffner & Barkley, 1990).

In their study, DuPaul, Stoner, Tilly, and Putnam (1991) had a boy of 7 years old who was diagnosed with severe attention difficulties including careless completion of work and excessive motor restlessness. Before trying medications, a token reward system was implemented into the classroom to improve his behavior. Baseline data was collected during independent work, small and large group instruction for on-task behaviors. At the baseline, a task completion rate of 54% at 70% accuracy and on-task behavior was revealed. When using token economy an abrupt change in behavior to on-task levels of 80% and 90% completion rate for his assignments at 93% accuracy rate resulted (DuPaul et al., 1991). Implementation of a response cost increased his levels in all three areas. However, when the token system was withdrawn, all behaviors returned to previous rates (DuPaul et al., 1991). It was suggested that a number of behavioral interventions would be necessary to finally promote the maintenance of performance gains because the token economy was not enough to be a long-lasting behavior modification (DuPaul et al., 1991). Token economies rely heavily on teacher monitoring and rewarding appropriate behaviors. Being time consuming and ultimately unsuccessful

may result in a lack in student self-reliance. Also, its specificity and time constraints may be prohibitive for classroom use.

Another form of behavior management is alternative teaching instruction using games. This has been utilized to increase on-task behaviors of children with ADD (Ford, Poe & Cox, 1993). In the study, a checklist of nonattending behaviors was used in which games were provided to compare the effects on attending behavior. Four games were used to determine the effects of infusing software packages into the curriculum to increase attending behavior of individuals with ADD (Ford et al., 1993). It was indicated that employing instructional software as a vehicle would increase students' attention in learning and time on-task (Ford et al., 1993). The study tested 4 commercial software packages, 2 in math and 2 in reading, one at a time, one hour a week. Nonattending behaviors were recorded every 2 minutes through direct observation in 10-minute intervals for 21 students. Results showed that there were significant differences in the attending behaviors with each software package (Ford et al., 1993). Observation data revealed that when provided with a software package that contained drill and practice in a game format, attending behaviors were increased regardless of the subject focus. Moreover, it was found that a game format increased the student's attention and on-task behaviors in both subject areas as long as the visual stimulation in the game did not exceed a particular level (Ford et al., 1993). The student's attention increased and undesirable behaviors decreased when software packages including games containing animation were used (Ford et al., 1993).

Behavior modification without medication has been used to treat ADD in a school setting. Babyak, Luze and Kamps (2000) developed the Good Student Game, a game,

used as a behavior management tool, based on Barrish, Sanders and Wolf's Good Behavior game created in 1969 (Babyak et al., 2000). Babyak et al. modified the Good Behavior Game with the addition of a self-monitoring piece. The Good Student Game is a self-management strategy that has proven to be effective for a whole class of elementary students (Babyak et al., 2000). Babyak et al. noted that in the Good Behavior Game teachers monitored the students' behavior that could be demanding and time consuming (Babyak et al., 2000). With the addition of self-monitoring, the students became responsible for their own tracking of behavior therefore the game it becomes more usable tool for the classroom management (Babyak et al., 2000).

To play the game, the teacher initially identified target behavior for the class, set goals for the class, i.e. 80% of achievement, and decided whether group or individual monitoring would be used. Playing the game took about 20 minutes and it was suggested that it be played at least once a day to be effective. The game was used during quiet instruction for 20-30 minutes at a time during which students either individually or as a group, filled out a form entitled, "Are we acting like good students?" The results of the study showed that The Good Student Game increased attention in a general education setting across the whole class increasing the on-task behavior from 30-50% to 90% during the game activity (Babyak et al., 2000).

Although behavior management strategies have been proven effective with students in some settings, clearly there are numerous ways to treat ADD in a school environment, for example, providing choice of activities (Powell & Nelson, 1997). In the study by Powell and Nelson, one 7-year old boy who had been diagnosed as having ADHD participated. He was not in special education programs and was not receiving any

in class support. A majority of his behavior as indicated by his teacher was undesirable. Direct observations were used every ½ hour at the same time each day to collect data about his behavior revealing that the student would not complete assignments and pay attention during seatwork (Powell & Nelson, 1997). The student was given a choice of 3 assignments, similar to the assignment the remainder of the class would be completing (Powell & Nelson, 1997). There was no choice provided in the baseline and a choice provided as the intervention. Observation showed that the level of undesired behavior decreased during the intervention when a choice was given (Powell & Nelson, 1997). When a choice of assignments was provided, the undesirable behaviors were reduced from 80% to 20% (Powell & Nelson, 1997).

Another teaching strategy, peer tutoring, has been found successful to improve students' behavior and academic performance (DuPaul, Ervin, Hook & McGoey 1998). Peer tutoring seems to be an effective way to address academic difficulties in general education settings for students with ADD. DuPaul and colleagues found that on-task behavior was improved as a result of peer tutoring from 29% to 80%, and active, engaged time was increased too (DuPaul et al., 1998). This increase was similar to the results when medication was used to treat ADD. Without Class Wide Peer Tutoring (CWPT), active, engaged time went back to 21% indicating limited long-term effects. Most teachers who implemented CWPT enjoyed the strategy and continued to use it in their classrooms (DuPaul et al., 1998). It is assumed that as long as CWPT was being implemented, the student's behavior would remain at on-task levels. The students' responses were positive. They said that they enjoyed it and would recommend it to a

friend (DuPaul et al., 1998). It is emphasized that Peer contingencies are only as successful and reliable as the students engaged in the process (DuPaul et al., 1998).

Generally, literature on behavior management reveals an extraordinarily heavy burden on the teacher to manage behavior of children with ADD/ADHD. For instance, providing a choice of assignments is unrealistic in class and it could compromise the child's education in the future (Powell & Nelson, 1997). Moreover, the use of computer software in class requires a teacher to preview software, test its effectiveness, have the software approved for the classroom, design lessons with the software and then actually use it. It is found that this process is prohibitive to increase children's attention for a limited time, such as one hour per week (Ford et al., 1991).

There are very few options available to a teacher in an inclusive setting to improve on-task behaviors without a great deal of effort, planning and implementation. All behavior strategies indicated in this report require so much time and effort that the approaches or programs, although seemingly effective, would be impractical. A timesaving approach is necessary in an inclusive classroom because the average class size would be from 25 to 30. Without in-class support staff to help the teacher, it would be difficult. In order to overcome this difficulty, self-management strategies can be implemented in classrooms to help students learn to manage their own behaviors.

*Self-management.* A self-management strategy is one approach suggested for managing behavior for students with ADD/ADHD. This strategy has been successful to help students with ADD/ADHD become autonomous in the classroom, learn adequate classroom survival skills and can be implemented in an inclusive classroom without interrupting the classroom schedule.

Mathes and Bender (1997) studied the effects of self-monitoring on children with ADHD. A multiple baseline design was used to collect data of on-task behavior for children with ADHD who were taking medication. Three males were chosen because they continued to display behavioral problems even though they were being treated with medications. The results showed that a combination of both medications and self-monitoring strategy enhanced students' on-task behaviors (Mathes & Bender, 1997).

Davies and Witte (2000) combined peer monitoring and self-management to examine the efficacy of the combined program on uncontrolled verbalizations of four 3<sup>rd</sup> graders with ADD in a general education setting. Inappropriate verbalizations were observed in a class with 30 students. The combined program of intervention was found to positively influence the behavior of students with ADD. They were aware of how their behavior affected the class and, as a result, their behavioral interruptions reduced (Davies & Witte, 2000).

King-Sears (1999) attempted to teach one 7-year old girl to self-monitor and self-evaluate her behavior instead of assuming a continued reliance on external people. The goal was to have self-management lead to a decreased level of supervision for this second grade student with multiple disabilities. It is believed that the student was able to "recognize the occurrence of a behavior of interest and that the student was able to determine whether the level of performance meets the criterion to receive a reinforcer" (King-Sears, 1999, p.136). In this research project, the student inconsistently showed the ability to accomplish the task and to reach the mastery level. Baseline and intervention were in three settings. A changing-conditions multiple baseline design was used. An elaborate chart was constructed for the researchers to explicitly define on-task or



appropriate behaviors to the student as well as off-task or inappropriate behaviors. On-task behavior during travel time was measured. A teacher constructed, self-management chart was created for the child to self-evaluate her behavior. A self-management device and a cognitive thinking process device were used. The results of the study showed that with self-management, the student was able to become more autonomous in her travels in school because she exhibited more appropriate behaviors (King-Sears, 1999). The results of this study pointed to the success of self-management that helped the student accomplish a task. As a result, the student was able to self-monitor behavior in the hallway and to travel in the halls without supervision. Fading the adult support and instituting internal support in the form of self-management was successful for this student (King-Sears, 1999).

Mathes and Bender (1997), and Davies and Witte (2000) found that self-management was a success to take the student one more step. The most notable success of the King-Sears' study (1999) was that the student generalized the desirable behavior to other settings, thus, there was no need to provide further training.

Another study on self-monitoring conducted by Shimabukuro, Prater, Jenkins and Edelsen-Smith (1999) included 3 males with ADHD, one sixth grader and two seventh graders, in a self-contained classroom. The goal was to determine whether or not self-monitoring strategy improved academic performance and attentional behavior. A single-group, multiple base line was used across three academic areas. It was determined ahead of time that all students were capable of completing academic work presented during the study. All three students had problematic behaviors during academic periods throughout the day before they were trained and taught to self-monitor and self-graph

their performance in mathematics, reading comprehension, and written expression. They were given 15 minutes during each of the 3 academic periods to complete independent assignments and correct their own work. The teacher observed and recorded the students' behaviors. It was found that self-management and self-monitoring strategies improved academic accuracy, academic productivity and on-task behaviors (Shimabukuro et al., 1999).

Lazarus (1993) also conducted a study on the effect of general self-management skills on achievement of students with behavior disorders. The 18 students ages 11-13, 14 boys and 4 girls, exhibited a lack of motivation, a lack of independent work habits, frequent disruptive behaviors and an unwillingness to complete assignments (Lazarus, 1993). A multiple baseline design across subjects was used and a baseline condition was compared with a treatment condition (Lazarus, 1993). Students were taught general self-management skills. Self-monitoring was taught with practice, implementation and simulation of the self-management skills (Lazarus, 1993). Each student was responsible to chart his behavior and practice with "I" statements. Personal goals were set with regard to the completion of classwork and the percentage of accuracy (Lazarus, 1993). The instrument for charting results was not included in the study, therefore, it was difficult to replicate the study. Nonetheless, the results showed that student achievement was improved significantly and the problem behaviors were diminished under treatment conditions (Lazarus, 1993). One notable observance is that during the treatment phase, all participants of the study noted "silence and task persistence" (Lazarus, 1993, p.71). Two months later, data was collected again and all students maintained the improved performance levels that were similar to those in the treatment phase (Lazarus, 1993).

Hutchinson, Murdock, Williamson and Cronin, (2000) worked with a difficult student named George in a general education placement who exhibited numerous undesirable behaviors, therefore, was seen as terribly disruptive. Hutchinson and the team decided to teach George self-monitoring and self-recording strategies with verbal praise and encouragement. George used a self-recording form "I am a Great Kid" to record his behaviors in class. His grandmother received a copy of the form each day and the points he received were linked with predetermined rewards. Once self-monitoring and self-recording were taught George's goal was to achieve 50% above the baseline everyday. George's latency and disruptive behavior decreased from an average of 3 on-task behaviors a session to an average of 5 or more when self-management techniques were used (Hutchinson, et al., 2000). His behavior improved so dramatically that both family members, teachers as well as the student himself were satisfied with this useful tool. It has proven that self-management is a clear effective alternative to medication for students with ADHD.

Hoff and DuPaul (1998) used self-management strategies to reduce disruptive behavior of three elementary students diagnosed with ADD in a general education class with the use of self-management strategy. The researcher observed student aggressive behavior in and out of school. They found that the self-management strategy proved to be a successful means to decrease disruptive behavior (Hoff & DuPaul, 1998). Students with ADD maintained a decreased level of disruptive behavior in the general education setting without teacher's reminding (Hoff & DuPaul, 1998). In a similar study, students were trained to self-manage on a timed schedule (Piffner & Barkley, 1990). On-task

behavior was improved for each group in class. Students exhibited 50% on-task behaviors before implementation and 75-90% after the study (Piffner & Barkley, 1990).

Mitchem (2001) examined the feasibility of increasing on-task behavior class-wide through self-management strategy. The strategy was taught in three classes and on-task behavior increased from 25% to 80%. Teacher rating was used as measurement. Time constraints for implementation were minimal and the educators and administrators agreed that the program was effective, feasible, and acceptable for classrooms (Mitchem, 2001). In addition, a class-wide self-management approach was implemented. Students were instructed to use self-management techniques and were placed in teams of peer partners. They were required to rate their own behaviors. During intervention, data samples were recorded in 10-second intervals during a 40-minute period. Mitchem found that on-task behavior rose to above 90% in the classroom (Mitchem, 2001).

In addition, Davies and Witte (2000) studied thirty, 3<sup>rd</sup>-grade students to observe inappropriate verbalizations. During the baseline an average of 2 to 22 inappropriate verbalizations were recorded. A multiple baseline whole-class study was conducted to see the efficiency of self-management and peer-monitoring to change behaviors. All students were trained with the new strategy. The teacher modeled the procedure and students had a chance to practice and rehearse. Self-management and peer-monitoring strategies were found to be effective to change behaviors. A 5-week maintenance phase also found a long-term effect on the behavior change in the classroom (Davies & Witte, 2000). The results showed the combination of self-management and peer-tutoring to be highly effective (Davies & Witte, 2000).

Similar results were found in a self-contained setting in a private school. (Shimabukuro et al., 1999). It is difficult to generalize Shimabukuro and colleagues' finding to an inclusive classroom, although studies in self-management seem to have similar results across settings.

*Summary.* An intense literature review has summarized some approaches for behavior management of children with ADD/ADHD. Generally, they are medication, behavior modifications and self-management.

Medication alone cannot be proven to be effective (Runnheim et al., 1996). In addition, there are concerns and a lack of research studies on causal attributions about medication such as Ritalin and other stimulant substitutes (Pelham, 1992). Moreover, medication alone proved to be effective, but the effectiveness where academics or behaviors are concerned lacks thorough studies. When more medicines are provided to students with ADD more research is needed to determine whether medication can have long-lasting psychological and physical effects (Pelham, 1992).

Behavior modification has improved behaviors. Token economies, classroom games, computer-based programs and a choice of assignments were all found to be effective behavioral strategies. On-task behavior increased in all studies reviewed. However, behavior management strategies were also found to be super-specific and not transferable to all settings. Whether the techniques were for quiet individual work, or specific to Math or Reading requiring the use of a computer, or dependent on another willing student to tutor, the intricacies of such behavior modification programs were extremely demanding of the teacher's time for planning, training and implementation.

Self-management is a timesaving and effective solution to increase on-task behaviors in a class-wide setting. While self-management is a specific behavior modification requiring compliance on the part of the student to self-record data, some behavior modifications have been found as effective alone as when medication is prescribed. For example, behavior modifications are just as effective as medication when using CWPT, the increase of on-task behaviors were similar to the results when medication was used (DuPaul, Ervin, Hook & McGoey, 1998).

Barkley (1997) postulates that ADD/ADHD is a disability of inhibition, that individuals cannot inhibit emotional responses to feelings or to stimuli therefore, attention, concentration and focus are big problems for these students (Barkley, 1997). Individuals with ADD/ADHD cannot deal with what is actually happening, the facts of a situation, because they lack the ability to suppress the feelings and emotions to react to a situation (Barkley, 1997). If, through the use of self-management, an individual can get those feelings out onto paper and begin to see a pattern of behavior based on specific emotions, the learned response could be a learned self-control and self-inhibition that would decrease outbursts and emotional behavior. In the present study, by using a new tool, students learned how to self-manage their behaviors in an inclusive classroom and became more successful learners. Self-management requires no external agent, such as the teacher to monitor behavior and a student is expected to take control of his or her own behavior (Hoff & DuPaul, 1998). The advantages of this strategy are the probability of increasing chances of maintaining appropriate behaviors in the absence of an external entity and behavior changes have a greater potential for generalization to other settings. Cognitive interventions utilized with ADD/ADHD children such as self-control strategies

have been quite successful to improve on-task behaviors in classroom settings (Pfiffner & Barkley, 1990). It has been stated that self-management and self-reinforcement should be continually developed for the enhancement of children's long-term success (Barkley, 1990, Pfiffner & Barkley, 1990).

Many studies have been conducted to examine the effects of self-management strategy for students with ADD/ADHD. There is limited research, however, addressing the effectiveness of self-management in an inclusive setting especially in middle school settings. This present study has used self-management strategies in an inclusive classroom to attempt to change the behavior of students with ADD/ADHD. Using a self-management instrument, students self-recorded and self-monitored their own behavior attempting to increase on-task behavior in class.

## Chapter 3

### Method

#### *Samples*

*Students.* Two male and one female, 8<sup>th</sup> grade students who were enrolled in a middle school in a large suburban school district in the northeast area of the United States participated in the study. These students were diagnosed with ADD/ADHD together with learning disabilities and were eligible for special education services through Individualized Education Plans (IEPs) according to the state administrative code (2002). All students were placed in an inclusive class with a full-time special education teacher and a regular education teacher. Table 1 presents their general information.

Table 1  
Grade, Gender, Class Placement and Medication Status of Participants

Student	Placement	Gender	Medication
S1	Inclusion	Male	Yes
S2	Inclusion	Male	Yes
S3	Inclusion	Female	Yes

*Note.* Inclusion = A class with one regular education and one special education teacher.

Student 1-Student 1 was a 14-year-old male who had been eligible for special education for 3 years as a result of his diagnosis with ADD and learning disabilities. He took medication twice a day.



Student 2- Student 2 was a 13-year-old male who had been eligible for special education for 6 years. He had been diagnosed with ADHD and learning disabilities, taking medication 2 times a day and visiting a therapist on a weekly basis for his behavior problems.

Student 3- Student 3 was a 14-year-old female. She had been eligible for special education for 4 years. She had been diagnosed with ADD and learning disabilities and took medication twice a day.

*Settings.* A total of 23 students, 8 special education and 15 regular education, were in the inclusive class involved in the study. The class was held in the same classroom at different times of day because the school schedule was a rotating flexible schedule with teams as the main unit in the school. During history class, a total of five tables were in the classroom and all students sat at tables with 4-5 other students. In addition to five tables for the students, there were 12 computers in a lab area, one television and one VCR. All the observations were conducted in this setting.

*Teachers.* One regular education and one special education teacher took part in the study. Both teachers were teamed to teach the students at least one hour per day. The regular education teacher took the responsibility to provide the training of self-management strategy while the special education teacher assisted the students in the class as needed.

### *Research Design*

To measure the quantity of the occurrence of target behaviors, an interval recording was used to determine the occurrence of target behaviors within a specified 10-minute time segment each day (see Appendix A). A single subject design with AB

phases was used. The baseline observation lasted for 10 days and the intervention was 15 days.

### *Instructional Materials*

Students were taught to self-manage their own behaviors. A checklist for self-evaluation was developed for students to determine whether or not they performed appropriately in class each day (see Appendix B). If students had not performed appropriately according to the self-managing checklist, they were asked to do a reflection about what they could do differently in the future.

### *Procedures*

*Instructional Procedures.* Compilation of the data gathered from both teachers in the school and students on the team resulted in a list of target behaviors. This list of behaviors was compared to the extensive notes kept by the recorders during baseline collection for two weeks to determine the behaviors that were the most disruptive in the classroom and correlate them to the behaviors being exhibited by the students with ADD/ADHD in the classroom. The list of target behaviors was compiled into three classifications of appropriate responses, inappropriate actions and inappropriate vocalizations.

Selection of target behavior for self-management was done together by the regular education teacher and the special education teacher. Preparation to teach self-management was done during two training sessions and discussed at the team meetings. Instruction for students on self-management was conducted in the History class. Students received training for three days, two 45-minute sessions and one 45-minute practice session on a 3rd consecutive day. During training, students were introduced to the target

behaviors and the student self- recording instruments (see table 2). The target behaviors were introduced and a list of desirable behaviors was generated. It was agreed that students would self-manage their own behaviors to decrease the occurrence of off-task behaviors.

Table 2

*Target Behaviors*

Appropriate On-Task Behaviors	Inappropriate Off-Task
Sitting quietly and listening	Walking around without permission
Working on assignment	Name Calling
Being respectful	Inappropriate comments towards peers
Listening to the teacher	Talking to a neighbor
Following directions of an assignment	Not following directions
Raising hand to answer	Calling Out
Keeping hands to oneself	Touching a neighbor
Appropriate responses, phrases and voices	Making noises
Comments on the topic	Inappropriate responses

The first 45-minute training session included an explanation of self-management and its potential benefit to students (see Appendix C). The second 45-minute session, the students were taught how to self-monitor their behavior using the checklist. Specific examples of off-task behaviors and on-task behaviors were modeled through behavioral rehearsal and a list of these behaviors was provided as a visual aid to students. The last

day of training was determined as a trial where students practiced self-management during an uninterrupted History class while students worked on an assignment.

*Observation Procedures.* Two observers recorded behaviors in the classroom for 2 weeks, keeping extensive notes and focusing on target behaviors prior to the beginning of the research project. Two classroom teachers collected baseline data at 10-second intervals for 10 minutes during an uninterrupted period at the beginning of class each day for 3 weeks. During this time, students were completing a review of a previous day's lesson or an anticipatory activity for the current day's lesson.

#### *Dependent Measures*

Three target behaviors were recorded: appropriate responses, inappropriate vocalizations and inappropriate actions:

1. Appropriate Response- appropriate phrases, comments on topic, and appropriate voice used during class participation.
2. Inappropriate Vocalizations- making noises, talking to neighbors, and name calling during instruction
3. Inappropriate Actions- walking around without permission, banging and touching a neighbor, fooling around and drawing during class when other directions had been given.

### *Measurement Reliability*

Two teachers observed in the classroom during the interval-recording period.

Inter-rater observation was determined by calculating the following formula:

$$100 \times \frac{\textit{agreement}}{\textit{agreement} + \textit{disagreement} + \textit{omissions}} \text{ to reach at least 60\%. If there was a}$$

discrepancy, the observation data of both teachers were averaged.

## Chapter 4

### *Results*

This chapter presents observation data on student behaviors during baseline and intervention. Their inappropriate responses, appropriate actions and inappropriate vocalizations were observed for 25 days during the study.

#### *Appropriate Responses*

Figure 1 presents the students' appropriate responses during the class time. The appropriate responses included three behaviors that were appropriate phrases, comments on topic, and appropriate voice. During the baseline, data showed that most comments and phrases were not appropriate to the topic or the classroom atmosphere with a low frequency of appropriate occurrences.

Baseline data showed that appropriate voice was observed minimally 0 to 2 times. Students replied with relatively few appropriate responses in the classroom. During the intervention, when self-management strategy was implemented, appropriate responses increased to between 5-15 per class period.

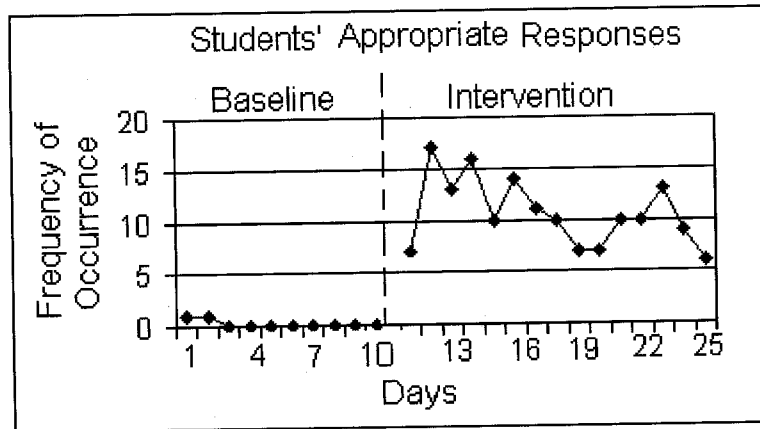


Figure 1

*Inappropriate Actions*

Figure 2 presents the students' inappropriate actions during class time. The category of inappropriate actions included walking around the room, banging and touching a neighbor, general fooling around and drawing. During the baseline students' inappropriate actions ranged from 9 to 15 times per class with a high frequency of inappropriate actions. During the intervention, when self-management strategy was implemented, inappropriate actions decreased to between 0 and 3 per class.

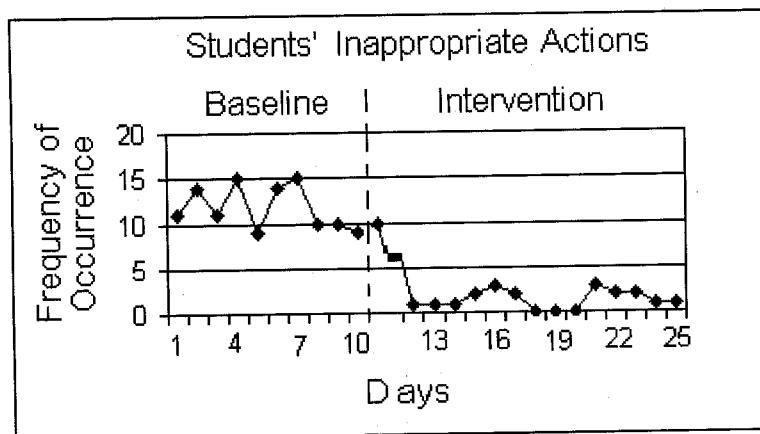


Figure 2

*Inappropriate Vocalizations*

Figure 3 presents inappropriate vocalizations in class that comprised of such behaviors as making noises, talking to neighbors and name-calling. During the baseline, students' inappropriate vocalizations were as high as 30 times during one class period. During the intervention, when self-management strategy was implemented, inappropriate vocalizations decreased to between 0 and 7 per class period.

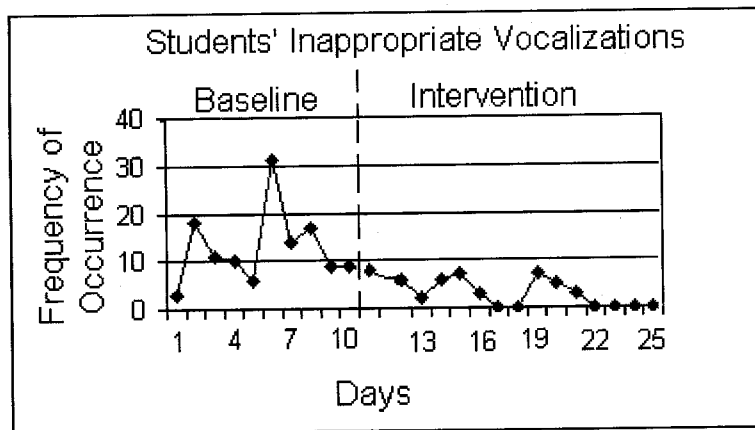


Figure 3



## Chapter 5

### *General discussion*

Self-management has been found as a timesaving and potential alternative to other behavior management plans and a useful behavior management tool for an inclusive classroom (Hoff & DuPaul, 1998; Mitchem, 2001). This study appears to contribute more information to existing research about the effects of self-management strategies in an inclusive environment for students with ADD/ADHD.

### *Appropriate Responses*

Appropriate student responses were changed from a range of 0 to 2 to a range of 5 to 15 times per class period when self-management strategy was introduced in an inclusive setting. It is evident from the data that students self-managed their behaviors and their appropriate responses in class were increased. Once students began self-managing their own behaviors, it seems that they became more aware of appropriate behavior and more conscious of their behaviors, therefore, their self-control increased and their appropriate behaviors increased. In addition, it may have been that students in an inclusive classroom did not want to be singled out for the study, therefore, it may have been easier to exhibit appropriate behavior for the peer acceptance.

One student required additional training as his attention waned during the training phase for self-management strategy, therefore, he had many questions during the intervention phase. After an additional training session during a scheduled lunch period following the 2<sup>nd</sup> day of the study, the student's questions were answered and he understood the procedure better, so that he was able to self-record and self-manage his own behavior.

### *Inappropriate Actions*

Students' inappropriate actions were changed during the intervention phase of self-management strategy from a range of 9 to 15 to a range of 0 to 3 times per class. The decreased inappropriate actions included were walking around without permission, touching a neighbor, banging, fooling around and drawing. Walking around without permission was completely extinguished when students self-managed their own behaviors after training.

Two students were almost able to completely control the behavior of drawing and fooling around during the intervention phase. One student, however, was able to self-manage most of his behavior but was not able to control his habit of touching other students. At least once a day throughout the intervention phase this particular student touched another student or his/her belongings. When self-managing his behavior, the student did not recognize that touching others was unacceptable, regardless of the amount of times the researcher defined this behavior as off-task. As noted in Barkley's study (1998), ADD is a disability of inhibition. The researcher believes that this student did not know how to control the impulse to touch someone else or their belongings. Although in this study the student was told many times to stop touching other's belongings, as found in Barkley's study, it is believed the wait time necessary for the student to control his impulses in this situation was absent.

### *Inappropriate Vocalizations*

Students' off-task behaviors were changed during the intervention phase of implementing the self-management strategy from a range of 1 to 30 times to a range of 0 to 7 times per class. The off-task behavior included making noises, talking to neighbors

or calling a neighbor by an inappropriate name. At the baseline, students' inappropriate actions ranged from one time to as high as 6 times during one class period.

When student used self-management strategy, inappropriate vocalizations decreased to an average of between 0 and 2 per class period. During intervention phase, two students were taught to redefine their behavior and these students understood and self-recorded their behaviors using self-management strategies. It seems that as soon as the behaviors were defined as undesirable and off-task, the students' inappropriate behaviors decreased. A third student, however, habitually made noises and this behavior habit never changed. This particular student, in addition to taking Ritalin for ADHD, was recently diagnosed with anxiety disorder and suffers panic attacks. Some days he just made noises, as he explained it, to get the energy or nervousness out. Therefore, the intervention data shows two times of inappropriate vocalizations when this particular student was having a bad day. This study found, as did Barkley (1998) that inappropriate behavior, comments and actions in the classroom are some characteristics of students with ADD/ADHD.

Self-management was found to be timesaving in this inclusive class to support Mitchem's findings (2001). Students were reminded at the beginning of class to self-manage their behavior and were diligent in filling out their self-management forms each day as well. For these particular students, the gentle reminder of taking out the form may have been enough to remind them to behave properly. Self-management was successful as a behavior management tool in this inclusive class. Although some inappropriate behaviors still existed, the students did self-manage their behaviors and improved tremendously.

Because of the limited research on self-management in inclusive classrooms in middle schools, this study may contribute to the area of behavior management, especially useful to inclusive settings. As Mathes & Bender (1997) found, a combination of medications and self-management proved to be successful to manage behavior in an inclusive classroom in a middle school. This study expanded the research for behavioral management in an inclusive classroom. Similar to King-Sears' study (1999), the children in the present study were able to accomplish a task and following directions, as result of using the self- management strategy.

One of the most unexpected findings was that students enjoyed the self-management of their own behavior. Two of the three participating students asked to continue to self-manage their behavior after the intervention phase was over. It seems that these students enjoy the success and want to continue self-managing their own behaviors.

#### *Limitations and Recommendations*

There are some limitations in this study. First, the number of participants was only three due to the lack of parental consent for students to participate in the study. Second, the duration of the study was 10 days for baseline and 15 days for intervention. The baseline observations took place after parental consent had been given so that the students knew they were participating in a research study, therefore, that knowledge may have impacted their behavior change. Third, the research was done in an inclusive class and further research could be done on students with ADD/ADHD in regular education settings or other environments. Fourth, a variety of racial groups could be studied in

future research, as all the participants of this study were white. Lastly, further research could be done on the psychological effects of self-management on adolescents in an inclusive setting because of peer pressure. Self-management required students in this study to fill out a sheet of paper at the end of each class. It would be interesting to see whether or not on-task behavior increased because of the self-management strategy or because students did not want to risk another student seeing them filling out the daily checklist of behaviors. In addition, further research could expand these findings to examine the emotional or psychological effect behind the behavior change, for instance, if a self-realization was actually taking place simultaneously with the self-management of behavior.

Moreover, students in this study were already taking medication and the researcher had no control over the medication doses. A study to monitor medications might be useful to compare the effects of self-management on both behavior change and academic progress.

A replication of this study is suggested to further evaluate the findings. Students with ADD/ADHD were included in the study but all other behavioral problems were excluded. Therefore, in a future study, other behavior problems may need to be examined. In addition, a replication of this study is suggested in an urban school district to expand the findings.

This study has proven that when students were taught self-management strategies their on-task behaviors increased and off-task behaviors decreased, thus, the incidence of conflict between students in the classroom was reduced. Self-management is useful to increase appropriate behavior of students with ADD/ADHD.

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## Appendix A

### Frequency of Occurrence Measurement Instrument

Directions: Document the following behaviors.																							
<b>Behaviors</b>	<b>M</b>	<b>T</b>	<b>W</b>	<b>T</b>	<b>F</b>	<b>M</b>	<b>T</b>	<b>W</b>	<b>T</b>	<b>F</b>	<b>Behaviors</b>	<b>M</b>	<b>T</b>	<b>W</b>	<b>T</b>	<b>F</b>							
WALKING AROUND											WALKING AROUND												
BANGING											BANGING												
TOUCHING											TOUCHING												
FOOLING AROUND											FOOLING AROUND												
DRAWING											DRAWING												
NOT FOLLOWING DIRECTIONS											NOT FOLLOWING DIRECTIONS												
COMMENT OFF TOPIC											COMMENT OFF TOPIC												
INAPPROPRIATE VOICE											INAPPROPRIATE VOICE												
INAPPROPRIATE WORDS											INAPPROPRIATE WORDS												
BLURTS OUT											BLURTS OUT												
MAKING NOISES											MAKING NOISES												
TALKING TO NEIGHBOR											TALKING TO NEIGHBOR												
NAME CALLING											NAME CALLING												
OTHER											OTHER												

## Appendix B

### Self-Management Checklist

Are you having a Great Day?	Monday	Tuesday	Wednesday	Thursday	Friday
SITTING QUIETLY AND LISTENING					
WORKING ON ASSIGNMENT					
BEING RESPECTFUL					
LISTENING TO MRS. GROSSI/MRS. LIND					
FOLLOWING DIRECTIONS					
SITTING IN SEAT					
RAISING HAND TO ANSWER					
RAISING HAND TO PARTICIPATE					
KEEPING HANDS TO ONESELF					
SITTING IN SEAT					
I AM HAVING A GREAT DAY!					

## Appendix C

### Self-Management Lesson Plan

**Objective:** To define self-management, introduce students to on-task and off-task behaviors and introduce the student self-recording instrument.

**Activities:** Teacher directed lecture defining self-management.  
Student role-play on-task and off-task behaviors  
Teacher directed explanation of self-recording instrument.

**Materials:**

Overhead Projector

Overhead of on-task and off-task behaviors

Handouts of self-recording instrument

On- Task	Off-Task
Sitting quietly and listening	Not following directions
Working on assignment	Name calling
Being respectful	Telling a neighbor to "shut up"
Listening to the teacher	Walking around the room
Following Directions of assignment	Talking to a neighbor
Sitting in seat	Inappropriate responses
Raising hand to answer	Making noises
Raising hand to participate	Touching a neighbor
Keeping hands to oneself	Touching a neighbor's belongings
	Calling out

**Discussion:** Why would a teacher want to use self-management strategy in class? How can it benefit students? Is it proven to benefit students? How can it be useful in our inclusion class?

**Reinforcement:** Exit pass: What is self-management?  
Name 1 on-task behavior and 1 off task behavior.

**Exit Pass:**

3 Things I learned today:

- 1.
- 2.
- 3.