THE EFFECTS OF THE MOTIVAIDER ON INCREASING THE ON-TASK
BEHAVIOR OF STUDENTS WHO HAVE BEEN DIAGNOSED WITH SEVERE
EMOTIONAL DISTURBANCES

Thesis

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ABSTRACT

Teaching students to self-monitor their behavior has proven to be an effective educational strategy for increasing the on-task behavior of students with and without disabilities. This study examined the effectiveness of a tactile prompt to increase the on-task behaviors among 3 high-school students diagnosed with severe emotional disorders, being served in a self-contained special education classroom. Students were taught to self-monitor their behavior by using the MotivAider, an electronic device that prompts the student to record their behavior by vibrating. An ABAB reversal design was used for each of the participants, and the results indicated that after the implementation of the self-monitoring intervention, the students’ on-task behavior increased from 33.6% of the intervals during initial baseline to 81.9% of the intervals during the intervention phase. Not only did the MotivAider increase the on-task behavior of the students, the students enjoyed using them, and after the study was completed continued to use the MotivAiders.
DEDICATION

This thesis is dedicated to increasing the knowledge of the countless individuals, inspired to work in the great field of special education. I would also like to dedicate my work to my family, especially my wife, for providing me with support and encouragement throughout the entire project.
VITA

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CHAPTER 1

INTRODUCTION AND LITERATURE REVIEW

Severe emotional disturbance (SED) is an emotional and behavior disorder that has been recognized for at least the last fifty years. Serious Emotional Disorders are a group of psychiatric disorders in children and adolescents that cause severe disturbances in behavior, thinking, and feeling. The terminology of the disorder has changed over the years but the behaviors associated with it have remained the same. Children with this diagnosis often portray signs of aggression, defiance, or resistance to discipline. Furthermore, these children can be extremely emotional or passionate, causing them to overreact to and misread the social context in which situations are occurring (Edwards, Salant, Howard, Brougher, & McLaughlin 1995). Students who have been diagnosed with SED often have increased onsets of off-task behavior, which can be extremely detrimental to their educational learning. IDEA defines severe emotional disturbance as a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree, which adversely affects performance: an inability to learn which cannot be explained by intellectual, sensory, or health factors, an inability to build or maintain satisfactory interpersonal relationships with peers and teachers, inappropriate
types of behavior or feelings under normal circumstances, a general pervasive mood of unhappiness or depression, or a tendency to develop physical symptoms or fears associated with personal or school problems."

The federal definition includes children who are diagnosed as schizophrenic, but excludes socially maladjusted children unless it is determined that they are severely emotionally disturbed.

It is a teacher’s natural instinct to intervene when students exhibit off-task behaviors. Therefore, these off-task behaviors can eventually become an important source of conflict between pupils and teachers. These conflicts can even lead to more defiance from the student (Bru, 2006). It is crucial for a teacher to be prepared and schooled in classroom management strategies to deal with these conflicts as they arise. No matter how effective or educated a teacher might be there is always going to be some form of conflict in the classroom. Simonsen, Fairbanks, Briesch, Myers, & Sugai (2008) concluded that “there are five empirically-supported, critical features of classroom management: (a) maximize structure; (b) post, teach, review, monitor, and reinforce expectations; (c) actively engage students in observable ways; (d) use a continuum of strategies for responding to appropriate behaviors; and (e) use a continuum of strategies to respond to inappropriate behaviors” (p. 353). By implementing effective classroom management strategies into the classroom, educators will be able to reduce many of these conflicts and increase the amount of learning time available to their students.
This is even more crucial for educators working in urban settings. In the urban school educators are also taxed with issues such as low income, minority, non-English speaking, and special needs students. Urban schools are also distinguished from non-urban schools by “higher rates of student mobility, difficulty hiring teachers, and a greater percentage or students evidencing classroom discipline problems” (Lannie & McCurdy, 2007, p. 86). Urban school districts place these students at even a greater risk when they hire educators with little or no experience. Often these educators lack classroom management strategies and use reactive and aversive strategies to deal with classroom management (Van Acker, Grant, & Henry, 1996). It is essential that such teachers are provided with easy to implement strategies that will decrease adverse behaviors.

Classroom management is not the only factor that affects students’ behavior during the course of the academic day. Sometimes students display off-task behavior because it will increase their social admirations with their peers. Bru conducted a study in which almost 20% of the students believed that going against the schools norms would increase their peer status. This shows that even if teachers are properly equipped to deal with behavior issues in the classroom and their classrooms are designed to facilitate learning to the maximum extent, there is still going to be resistance to learning and the presence of off-task behavior.

These same characteristics are evident in students with SED as well. During any educational activity there are really two choices that all students have to make. When the
students are assigned an educational task designed to increase their learning, they can either engage in the activity and increase their academic skills, or their can partake in avoidance behaviors such as disruptive behaviors. More often then not, students with SED partake in the second choice, disruptive behavior, leading to an increase in academic skill deficits causing them to fall further and further behind (Skinner, Hurst, Teeple, & Meadows, 2002).

It has been shown that students often partake in these avoidance behaviors to deflect the real issue at hand: to take the attention away from their low ability. Teachers often try to blame the students by suggesting that the students are just being lazy, devalue education, or there is little parental support. It is the teacher’s responsibility to adjust the learning environment to set the students up for success (Turner et al., 2002). A student’s self-acceptance, and even peer-acceptance, is crucial for a student to function in the educational setting. Covington (1992) writes, “in schools, self-acceptance comes to depend on one’s ability to achieve competitively” (p. 84). In order to save face when students feel like they are unable to compete they will use avoidance behaviors to shadow their educational deficiencies. These behaviors are a “struggle to escape being labeled as stupid” (Covington, p. 85). This struggle for social acceptance causes them to avoid seeking help, resisting simple approaches to academic success, and withdrawing effort. Continually when students perpetrate significant effort and still fail to compete this only increases the belief that they really are incompetent. It is crucial for teachers to create an academic atmosphere where there is an emphasis on learning, understanding, and
intellectual development. When the classroom is structured to promote individual development, students feel less threatened and therefore are more likely to resist using avoidance behaviors (Turner et al, 2002).

Another way to increase academic performance and resist using avoidance behaviors is the use of reinforcement to shape an aversive behavior into something more function or to teach a new behavior all together. Neef, Mace, and Shade (1993) concluded that students were more likely to engage in academic assignments that yield higher rates of reinforcement. Types of reinforcement that have been found to increase the students’ likelihood of choosing to be engaged in academic and not adverse behaviors are token economy systems, edibles, and praise. A key factor to the effectiveness of the reinforcement is the rate at which the reinforcement is delivered. Increasing the rate at which the reinforcement is delivered has been shown to increase the probability that the students will choose to engage in the academic activity and avoid partaking in off-task or avoidance behaviors (Skinner et al, 2002).

One treatment to help increase on-task behavior and reduce the likelihood of withdraw or avoidance behavior is functional communication training. Functional communication training (FCT) is an approach to teach students socially significant methods for escaping from an activity. Lalli, Casey, and Kates (1995) used this approach to decrease the rates at which student’s elicited aberrant behavior in a medical facility for students with severe behavioral challenges. Initially the students were granted the right to escape the task as long as they used the learned technique. As the study progressed the
students had to wait longer and longer before they were able to use the learned behavior, and by the end of the study the student’s time on task has increased from an average of 21% to an average of 86%. However, because in order for the students to learn the behavior they would lose valuable educational time, which caused significant distractions to the regular flow of the classroom, a more practical method should be considered before hand (Lalli, Casey, & Kates, 1995).

Another treatment or strategy for increasing a student’s on-task behavior is to teach self-recording or self-monitoring of one’s behavior. Self-management techniques are critical education tools that will permit segregated children to learn approaches that will permit them to be included in the regular classroom. Susan Abbott (1990) has identified six benefits of self-recording: (a) it leads to increase in attentional behavior; (b) although cues are needed initially, they can be faded while still maintaining the results; (c) recording responses can also be faded; (d) it works without backup reinforcers; (e) attentional behaviors are maintained when recording is withdrawn; and (f) self-monitoring of on-task behavior during academic work leads to increased academic productivity. There have been many studies that have shown that self-monitoring is an effective strategy for increasing on-task behavior and decreasing maladaptive behaviors (Willis, Whalen, Sweeney, & McLaughlin, 1995).

One study found that self-monitoring was found to be an effective strategy for dealing with students in a self-contained classroom who were diagnosed with serious emotional disturbances. These students were in the 8th grade and their off-task behavior
averaged around 87% during baseline. After five weeks of teaching self-monitoring, these same students were off-task about 4% of the time (Ninnes, Fuerst, Rutherford, & Glenn, 1991). Another study with four children with autism concluded: “Self-management procedures resulted in immediate and dramatic reductions in stereotypic behavior” (Koegel & Koegel, 1990 p. 125). Willis et al, (1995), found that self-recording, when combined with a reward of extra computer time, was beneficial to reducing the occurrence of off-task behaviors in a 14 year old student having emotional disturbances and severe behavior disorders. Lam, Cole, Shapiro, and Bambara (1994) concluded that teaching self-monitoring to students with severe behavior disorders, “self-monitoring . . . not only resulted in increased academic accuracy, but also impacted positively on on-task and reduced disruptive behaviors” (52). Thus, they concluded that not only does self-monitoring of behavior impact social behavior it also impacts academic performance.

Another self-management study conducted with three males in an urban elementary school with ADHD found that teaching student self-management strategies increased on-task behavior from an average of 35% to 75% during intervention. This time on task also proved beneficial to the students because by the end of the study their reading comprehension had improved by an average of 43% (Edwards et al., 1995). Self-management approaches are also beneficial to students who do not have disabilities. A study done with five elementary school students in a suburban setting, who had no identified disabilities and received all of their instruction in the regular education
classroom, benefited from self-management (McDougall, & Brady, 1998). Another study with students without disabilities was done with two eighth grade males who were identified by their teachers as the most disruptive students in the classroom. During the baseline the boys were off-task 88% of the time but after they were taught self-management strategies their off-task behavior decreased to an average of 15% of the time (Dalton, Martella, & Merchand-Martella, 1999).

Self-management has also been used to teach high school students with mental retardation. Students with mental retardation were taught social skills using self-monitoring and the individual target behaviors for these students increased from a baseline average of 5% to an average of 82% after they had been taught to self-monitor their behavior (Hughes, Copeland, Agran, Wehmeyer, Rodi, & Presley, 2002). All of these studies suggest that self-monitoring improves academic, social, and on-task behaviors of students who have been diagnosed with disabilities and also those who have not been classified with a disability. Self-management is critical for children, “who can be quite disruptive and whose numbers are increasing so dramatically in regular classrooms . . . Finally, self-management techniques are a powerful tool which might allow otherwise segregated children to be included in the regular classroom” (Edwards et al, 1995, 16).

Even though there is a significant amount of research to contribute to the notion that self-management strategies increase the on-task and academic performance of students from all academic levels and populations, it does have some characteristics that
can be impractical or disruptive in certain classroom settings. Most of the self-management studies have relied on an audio cue to signal to the students that it is time for them to self-record. Although these audible cues are effective in getting the student to self-manage behavior they can be stigmatizing or aversive to the student during the intervention. Also, these audible cues can be stationary therefore making generalization into other educational settings extremely difficult, and these cues can interrupt the lesson and distract students in the classroom that are not recording their behaviors (Reid, 1996).

A less intrusive self-monitoring technique is using a MotivAider. A MotivAider is an electronic device that can attach to the individual student’s clothing, and vibrate when the student is to self-monitor. This device eliminates many of the disruptive side effects of the audible cues and it can also be transported from setting to setting.

One study conducted with the MotivAider was with three fifth graders, who were diagnosed as emotionally disturbed and were receiving their education in a self-contained classroom. The MotivAider was found to be successful in increasing on-task behaviors from 55% to an average of 85% of the time during intervention (Amato-Zech, Hoff, & Doepke, 2006).

Because there is limited research done with this new device and none has been done with high school students, more research needs to be collected to determine how effective the MotivAider, a self-monitoring tool, actually can be. Therefore, the purpose of this study is to determine if the MotivAider would be an effective self-management
tool for high school students in a self-contained classroom, who have been identified as emotionally disturbed.

The study addressed the following research question:

Will the MotivAiders increase the time on task of high school students in a self-contained classroom?
CHAPTER 2

METHOD

Participants and setting

The participants in the study were three males in the ninth grade in an urban self-contained, high school classroom. All of the students in the study have (a) an IEP, (b) been diagnosed as emotionally disturbed, and (c) served in a self-contained special education classroom for students with SED. The study was conducted during the student’s fourth period, world history class. This class was selected for implementation because it had the smallest class size and the fewest number of students who were not participating in the study. Currently, the students are being mainstreamed for physical education and health, but one of the students in the study is unable to leave the special education classroom at any point during the day. The students were selected for the study because they participated in significant amounts of disruptive behavior that was affecting their academic performance.

All three of the students in the study participated in the normal routine of the classroom. For the majority of the time they worked independently at their own workstation, a two-foot by three-foot table. The makeup of the classroom forced the educator to keep the students separated due to the significant amount of aversive behavior.
that was displayed by the students. Occasionally throughout the study the lessons would require some cooperative learning, and the students’ tables would be moved together to permit them to work in a small group setting.

*Cory*

Cory was a 16-year-old African American male in the ninth grade. Cory’s behavior needed continuous monitoring and therefore at the time of this study, he was not permitted to leave the classroom at any time during the day. Cory was on a half-day of instruction, which means that after he had completed his four core subjects (math, english, social-studies, and science), his mother picked him up at 12:24pm everyday. Cory missed more than half of his 8th grade year due to suspensions from school and used escape behaviors causing him to be removed from school.

*James*

James was a 14-year-old African American male in the ninth grade. James was a student that had significant behavior and social deficits, which have caused him to be in his fourth foster home at the time of this study. James was currently reading at the third grade level, lacked basic math skills (multiplying and dividing), and along with being diagnosed with severe emotional disturbances had also been diagnosed with a cognitive disorder. James has also been diagnosed with a cognitive disorder, because he has a short-term memory loss, causing him to need constant review of the material. This becomes frustrating for James, when he sees other classmates moving on to new material and he continues to have to repeat material that he has already been taught.
Marquee

Marquee was a 15-year-old African American male in the ninth grade. Marquee was reading below the first grade level and was unable to write or spell anything other than his name. The majority of Marquee’s disciplinary actions had occurred due to his inattentive attitude with school, and then becoming verbally aggressive when redirected to complete his work.

Dependent Variables

The dependent variable in the study was the amount of on-task behavior of the students in the study. If, during the one-minute time interval, the students were on-task for the entire duration of the interval, they would mark themselves as on-task. Their score sheets were then compared to the observer’s score sheet for accuracy. Reinforcement was delivered if they scored themselves accurately or if they reached the allocated percentage of intervals on task. On-task behavior for this study was defined as working on the assigned task without exhibiting off-task behavior. Off-task behaviors could occur in three ways:

1. Any movement that occurs that is not associated with the academic task at hand (getting out of their seat, inappropriate gestures, etc.).
2. Any audible verbalizations that are not relevant to the assigned task or not permitted during the assigned task (cursing, yelling out answers, name calling, etc.).

3. Off-task passive behaviors were defined as passive disengagement for a period of at least three consecutive seconds (sleeping, putting head down, daydreaming, etc.).

When the students were able to resist these off-task behaviors during the timed interval they would mark themselves as being on-task during that interval and if they exhibited any of these off-task behaviors during the interval they would check “no” on the on-task scoring sheet.

Procedures

Research Design

An ABAB reversal design was used for each participant in the study. During this format the researcher first records data of the target behavior during a baseline phase in which the independent variable is absent (A1), then there is an intervention phase in which the target behavior is introduced to and remains in contact with the independent variable (B1). If there is an increase or decrease in behavior in the desired direction then the independent variable is removed and the conditions are returned to baseline again (A2), and as soon as the behavior starts to retreat back to the original baseline levels the independent variable is reapplied (B2). This reversal design is the preferred and most
straightforward approach to demonstrate a relationship between an independent variable and a behavior (Cooper, Heron, & Heward, 2007).

Initial Baseline

Initial baseline was collected for the students for three sessions to get the percentage of intervals that the students were on-task during the class period. During the baseline, there were no self-managing protocols in place and no additional incentives were added. The regular classroom management techniques such as rules, consequences, and rewards were in place for the duration of the study and not tied to the study in any way. During this baseline period, the students were not aware that their behavior was being recorded. Two observers, the classroom aide and another teacher in the building, were trained on the SLANT strategy to ensure that treatment integrity and interobserver agreement would be able to be maintained. The SLANT acronym stands for Sit up, Look at the person talking, Activate thinking, Note key information, and Track the talker (Amato-Zech et al, 2006). While sitting at a table in the back of the classroom, the classroom aide recorded on a data sheet the students’ behavior at one-minute intervals for a total of three, 30-minute sessions (see appendix B). Before the classroom aide and the second observer, another classroom teacher in the building, started collecting data, they were explicitly taught the criteria for being on-task, ensuring that all of the students were held to the same standards.
**Student Training**

After baseline had been collected, the students were taught the criteria measured in the study. The students needed to be able to distinguish between on-task and off-task behavior by using the SLANT strategy. (Amato-Zech et al, 2006). The students were taught specifically that “sit up” means that they must have their heads up. “Activate thinking” means to only ask questions that are relevant to the current subject and the current classroom discussion. “Noting key information” means taking notes and completing the assigned classroom work. “Tracking the teacher” means paying attention to the current discussion.

Once the students had learned the criterions for on-task behavior, they were given an on-task/off-task scoring sheet (see Appendix B). Next, they were given the MotivAider, which was used as a cueing device, to remind them to mark their scoring sheet. During the training sessions it was reinforced that the purpose of the practice session was to accurately assess their own behavior, not to merely check the on-task box. After each training session, the students’ scoring sheet was compared to the classroom observer’s sheet to check student-scoring accuracy. The training sessions lasted for at least three, 30-minute sessions for each participant but did not end until every participant was able to score the sheet with 80% accuracy. Once all of the participants were able to assess themselves with 80% accuracy, the study was implemented. To increase the likelihood of students meeting those goals for on-task behavior, 10 minutes of computer
time was awarded to a student when he met his criteria (evaluating himself correctly and being on task).

**Self-Monitoring Intervention**

All participants in the study scored their classroom behavior on a provided scoring sheet. Students wore a MotivAider on their hips. The MotivAider is a device that can be set to vibrate at a fixed interval or at a random interval. For this study the MotivAider was set to vibrate at fixed, one-minute intervals during each 30-minute session. All of the MotivAiders were programmed to vibrate with the same pattern to permit the observer to know when to assess the student’s behavior. To prevent the students from just checking every box as on-task, and to ensure that they would meet their goal, a die was used to keep the assessments random. When they rolled the dice at the end of the thirty-minute assessment period and it was an even number, they were assessed based on the accuracy of their sheet compared to the classroom observer’s sheet. If they rolled on odd number they were assessed based on the percentage of the intervals that were scored on-task. If the students met the chosen criteria at the end of the 30 minutes, they were permitted to participate in 10 minutes of free time on the computer. If they didn’t meet their goal, they were assigned a 10 minute activity that reinforced classroom behavior and appropriate classroom behavior, such as a lesson from the Big Kids Social Skill book intended for grades 7 through 12. These were simply short social skill lessons based on what would you do in the given situation. The lessons focused on
various genres of social skills and included peer-to-peer, teacher-to-student, and parent-to-child relationships and interactions.
CHAPTER 3

RESULTS

On-task Behavior

Figures 3.1, 3.2, and 3.3 display the percentage of time the three participants were on-task. Similar results were obtained for all three participants. During the initial baseline, Marqueese, James and Cory displayed very low on-task behavior. The range of the behavior during the initial baseline (A1) consisted of a low of zero intervals on-task to a high of an average of 52% of the intervals on task. During the initial intervention phase (B1), all of the participant’s on-task behavior increased. The lowest average of the three participants for all of the sessions during (B1) was 70% of the intervals on-task and the highest was an average of 90% of the intervals on-task. When the intervention was discontinued (baseline #2, A2) for a week (four sessions), there was a decline in the percentage of intervals that were on-task. Although the behavior fluctuated without the intervention, it is still evident that removing the intervention was directly proportional to the amount of time the students were on-task. Upon reinstatement of the intervention (B2), the on-task behavior for all three students immediately increased.
Marqueese

During the initial baseline phase (A1), Marqueese’s on-task behavior occurred during an average of 52% of the intervals (range = 10% to 96%). Although his overall mean of on-task behavior for the third observation of the first baseline period was 96%, there was wide variation between observations. The overall mean for the first baseline period was 52 percent, with the range between 10 and 96 percent. However, once the self-management intervention was implemented (B1) his on-task behavior quickly regulated with an average of 90.8% (range = 43.3% to 100%). On the other hand, when the intervention was discontinued (A2), his on-task behavior significantly decreased and became irregular once again, with on average of 67.5% (range = 53.3% to 80%). When the intervention was re-reintroduced (B2), Marqueese’s on-task behavior maintained an average over 95% (range = 93.3% to 100%).
James was not on-task during all the initial baseline (A1) one-minute intervals. Even though his behavior was extremely variable overall during the initial intervention stage (B1), his on-task behavior increased immediately to an average of 76% (range = 13% to 100%). As soon as the intervention was discontinued (A2), his on-task behavior decreased to an average of 14.1% (range = 6.6% to 23.3%). When the intervention was
re-reapplied (B2), his on-task behavior once again increased to an average of 75.5% (range = 63.3% to 86.6%). It is clear from the data that James’s behavior was under experimental control for this study. Before using the MotivAider his on-task behavior was 0% of the intervals and as soon as he was introduced to the MotivAider his on-task behavior increased. While using the MotivAider, he was on-task 76% of the time during (B1) and 75.5% during (B2), and when compared to when he was not using the MotivAider his on-task behavior was 0% during (A1) and 14.1% during (A2). This direct correlation between the MotivAider and the increase in James’s on-task behavior produced experimental control for James.

Figure 3.2 James’s on-task behavior.
Cory

Cory was on-task an average of 48.6% of the one-minute intervals during the initial baseline phase (A1) (range = 20% to 83%). Once the intervention was introduced (B1), Cory’s on-task behavior increased substantially. During this initial intervention phase, Cory was on-task for 80.8% of the intervals, even though he had one session in which he was on-task for 0% of the intervals (range = 0% to 100%). Once the intervention was stopped and baseline was reintroduced (A2), his behavior returned to what it was during the initial baseline with an average of 40.8% of the intervals on-task (range = 0% to 73.3%). Upon the reintroduction of the intervention (B2), Cory’s on-task behavior increased to an average of 91.1% of the intervals on-task (range = 86.6% to 93.3%).
Response measurement and interobserver agreement

Interobserver agreement (IOA) data was collected during six (27%) of the sessions in this study. Interobserver agreement was determined by taking the total number of intervals scored (30) and counting all the intervals that were scored the same. This was done by taking the observation sheets from both observers and counting the intervals that they had scored exactly the same. Taking the total number in agreement (ones scored the same) and then dividing that number by the 30 intervals for each session, calculated the percentage of intervals scored the same. Agreement between the two
observers was when they scored an interval for each student the same, and agreement ranged from 88.9% to 95.6% with a mean agreement of 91.67%.
CHAPTER 4

DISCUSSION

Discussion of Research Question

The research question this study sought to answer was, *Will the MotivAiders increase the time on-task of high school students in a self-contained special-education classroom?* From the results of this study, it appears that there is a positive relationship between the use of the MotivAider and the amount of time that high-school students spend on-task. When using the MotivAider, students increased the amount of time they were on-task by more than 49%. During the initial baseline phase (A1), the three students in this study were on-task for an average of 33.5% of the class time, but when using the MotivAider during the initial intervention phase (B1) they were on-task an average of 81.9% of the class time. Continually when the intervention was removed (A2) the group’s on-task behavior dropped to an average of 40.8% of the intervals on-task across the four sessions. Upon reinstatement of the intervention (B2), the group’s on-task behavior increased to an average of 87.7% of the intervals during the three sessions. Although other studies have observed even higher gains in percentage of time on-task, this study suggests that the MotivAider is nevertheless an effective tool for teaching self-monitoring behaviors and increasing the percentage of time students with disabilities in a self-contained classroom can be on-task.
Figure 4.1 Group’s on-task behavior

*Marqueese*

Marqueese is the student who maintained the highest levels of on-task behavior while using the MotivAider. It is beneficial to find that even students who have been identified with very low IQ scores (< 60) are capable of learning to self-monitor. This supports the findings by Hughes et. al., (2002) who determined that teaching self-monitoring skills to students with mental retardation (IQ < 50) can increase their on-task behavior by over 75% (5% to 82%). However, there were some limitations to the data collected for Marqueese due to the fact that there was no “trend” in the initial baseline. On the last day of collecting data for the initial baseline, the principal was in the room.
observing the teacher, and the principal’s presence may have contributed to Marqueese exhibiting more on-task behavior. If the study had had the luxury of more time to complete the study, a “trend” would have been collected before the intervention had been introduced. However, since the study only had a time frame of six weeks to be completed it was decided to introduce the intervention to ensure all phases of the study could be collected.

Another limitation or uncontrollable situation to the data collected for Marqueese is data point eleven. On this day there was no heat in the classroom causing the temperature to be around 50 degrees. During the entire class-period, Marqueese was complaining about it being cold; therefore, he was scored by the classroom observer as being on-task only 46% of the time. If we had been able to eliminate this data point for Marqueese, his on-task behavior during the initial intervention phase would have been above 85% for all of the data points. Marqueese enjoyed using the MotivAider, and he was able to increase his on-task behavior; therefore, adding the MotivAider as a learning strategy for Marqueese would be beneficial.

James

James is a student who needed some intensive intervention. James is currently being housed in a foster home (currently in his 4th this school-year due to discipline problems) and comes from a dysfunctional family. His father and brother are currently serving time in the state penitentiary, and his mother and sister are serving time in a local prison. Continually these situations affect his classroom behavior and ideology. For example, when meeting with him to discuss his IEP and future plans he is adamant about
planning his goals to permit him to be the OG, original gangster, in his gang without
getting himself killed first (personal communication, November 2008). This ideology is
evident throughout his classroom behavior during the initial baseline (A1) because he
was on-task for 0% of the intervals, including session three when the principal was in the
room. Both of the other students in the study had an elevated on-task percentage for
session three, because the principal was in the room; however, it is evident that not even
the principal in the room was reason enough for James to be on-task.

However after James had been introduced to the MotivAider (B1), it was
encouraging to see that he was able to increase his on-task behavior. James is the student
who benefited the most from using the MotivAider and the only subject in the study who
came under experiment control. While using the MotivAider during the first three
sessions, his on-task behavior increased and maintained to 85% for all three sessions.
Although James’s on-task behavior was not maintained above 75% for all sessions, (like
Edwards et. al. (1995) was able to do with students with ADHD); the MotivAider is still a
beneficial device that improved his on-task behavior. Therefore, the MotivAider alone
might not be sufficient enough to teach James to monitor his own behavior, but if it were
combined with other strategies and coupled with positive reinforcement better results
might be expected.

Cory

Cory is a student who, in his 8th grade year, was removed from school for more
than 80 days relating to disciplinary actions stemming from gang-related activities.
Cory’s behavior has been much better this year, and he has attended school more
regularly. Cory’s initial baseline (A1) data unfortunately did not form a “trend” in the three data points collected and his behavior was skewed during session three, because of the presence of the principal in the classroom during that session. Since this study was implemented under a restricted time frame, it was determined that the intervention should be implemented even without a trend or decline in on-task behavior during initial baseline. Despite low percentage of on-task behavior during sessions 5 and 11 of the initial intervention (B1), the data demonstrated a functional relationship between the independent and dependent variables. During session five (2nd session of B1) Cory was on-task for 0% of the intervals, and when the class was over the classroom teacher discussed his behavior privately. He revealed to the teacher that his father was undergoing a medical procedure and that was all that he could think about (the entire class Cory had his head down on his desk and refused to do anything). This behavior is consistent with a setting confound, because the MotivAider helped Cory monitor his on-task behavior before and after this session. This behavior suggests that even though the intervention might control the behavior in some situations and settings, there are times that uncontrollable events are going to override the practices implemented by professionals.

In addition, session number eleven (8th session of B1) contained an uncontrollable environmental variable - no heat in the room. Cory complained about it being too cold in the classroom to complete his work, therefore, he was being scored as off-task. When these two sessions are removed, his average time on-task increases from 82% to 92%. Even with the outlier included in his data, the MotivAider would still be an effective tool
for increasing his on-task behavior. Given the dramatic improvement of the on-task behavior, or all three students while using the MotivAiders, it would likely be an effective tool for increasing the on-task behavior of other students who have similar problems with on-task behavior.

Practical Implications

From the results of this study, several practical implications for the use of the MotivAider in schools can be identified. The MotivAider is easy to use and requires little time or effort on the part of the teacher or the student. Because students are responsible for recording their own behaviors, once they have been trained to record their data accurately, there is no demand on the teacher. Low demand on an already busy teacher is an important consideration when implementing behavior modification strategies into the classroom. Interventions that require less of the teacher’s time are more likely to be implemented and implemented correctly, than interventions that are time-intensive and take away from classroom instruction (Amato-Zech et al., 2006).

Second, the use of the MotivAider makes it possible to target a specific student without the student’s peers knowing. As mentioned in the research by Bru (2006), students will deviate from the accepted behavior because they increase their peer status by being defiant. By using a MotivAider, which can be isolated an unobtrusive, students that typically engage in taboo behaviors, will be more open-minded to using the MotivAider. Because the MotivAider fits in a student’s pocket, the only persons who have to know the student is using a self-monitoring stimulus are the teacher and the
student, which increases the social acceptability, and prevents the students from rejecting
the use of the device.

Continually the MotivAider received high verbal consumer satisfaction from the
both the students and the teacher in the classroom. After the study was completed the
students wanted to continue to use the MotivAiders, because they wanted to continue to
get the reinforcement associated with the increased production of on-task behavior. Even
though I was the teacher of the students in the study and the person conducting the study
with the MotivAiders, it was a huge relief to be able to use the devise to help control the
behavior of the students and see an increase in their on-task behavior.

Another implication is that these devices can be taken into almost any
environment that requires the student to monitor behavior. Unfortunately, this study did
not assess generalization to other environment, but because these devices are small and
portable, taking MotivAiders into other settings may not be a problem. This device has
the potential to cue the student to monitor behavior in any setting, without anyone
knowing. These implications, coupled with students wanting to wear the device, provide
evidence that the MotivAider could be an effective classroom tool for increasing the on-
task behavior of students.

Limitations

The first limitation to this study is the interobserver agreement data (IOA) that
was collected for this study. Although the data for IOA is very strong (> 91%), there is
some speculation that has to be done to assume that each observer was actually recording
the same interval when they were observing the students. This study only had access to
four MotivAiders, so when it came time to collect IOA a stopwatch had to be used in place of a fifth MotivAider. This complication makes it possible that each of the observers might not have been synchronized; therefore, scoring at different intervals. If this study were to be re-implemented it would be beneficial to only have each of the observers watch and record the behavior of one student at a time and not all three of the students for each one-minute intervals during each 30 minute session. By limiting the amount of behavior that each observer has to monitor, the accuracy of the IOA would not be able to subjected to subjectivity.

Another limitation to this study is that it did not probe or test for generalization. Future research needs to attempt to measure if the MotivAider is successful in increasing the on-task behavior of students in various settings and classrooms or without the presence of the device. By not only supporting the use of this device in a controlled environment, but in any setting that the student takes the MotivAider, educators would have to be more open to implementing the MotivAider as a self-monitoring technique in their classroom.

A third limitation is the fact that the study did not obtain the desired trend line in the initial baseline. Although there was a trend for James (0%), the other two subjects, Marqueese and Cory, did not have the desired trend when the intervention was introduced. This was because the intervention was implemented the day after the principal came into the room to observe the classroom teacher (i.e., the third day). The principal’s presence likely affected the behavior of the two students in a positive manner. Unfortunately, this study had to be completed within six weeks, therefore, it was
determined that the intervention needed to be introduced to Marqueese and Cory without a “trend” during their initial baseline. With stable data or a downward trend during baseline, a functional relationship between using the MotivAider and improved on-task behavior would have been more clear.

Continually, research needs to be done to determine if the MotivAider is a device that can be faded over time. In this study, when the MotivAider was taken away, the behavior immediately started to retreat to the initial baseline. Hopefully if the MotivAider was faded out gradually it would be able to be removed and the students would still exhibit appropriate levels of on-task behavior. This is important because if the students become dependent on the MotivAider to self-monitor their behavior, problematic behavior will arise in situations when the MotivAider is unavailable.

The final limitation of this study is that it did not provide any evidence as to whether or not the MotivAider helped increase the academic performance of the participants. The overall goal of any educator is the increase the academic capability of the students. Getting the students on-task is a critical aspect of learning, but paying attention and participation alone are not going to improve the academics of the student. Future studies need to explore the relationship between on-task behavior and academic improvement.

Summary of Research Study

The purpose of this study was to determine if the MotivAider was an effective tool for increasing the on-task behavior of students who exhibit distracting and disruptive behaviors. All three of the students in the study increased their on-task behavior while
using the MotivAider as a cueing device. In conclusion, the MotivAider appears to be a valuable tool that can be incorporated into the classroom to increase the on-task behavior of students such as those in this study.
REFERENCES


APPENDIX A
CONSENT FORM
Consent For Participating in Research

I consent to participating in (or my child’s participation in) research entitled:

The Effects of the MotivAider on Increasing the On-task Behavior of Student who have been diagnosed with Severe Emotional Disturbances.

Joe Wheaton, principal investigator, or his/her authorized representative, Michael Jellison, has explained the purpose of the study, the procedures to be followed, and the expected duration of my (my child’s) participation. Possible applicable and available.

I acknowledge that I have had the opportunity to obtain information regarding the study and that any questions I have raised have been answered to my full satisfaction. Furthermore, I understand that I am (my child is) free to withdraw consent at any time and to discontinue participation in the study without prejudice to me (my child).

Finally, I acknowledge that I have read and fully understand the consent form. I sign in freely and voluntarily. A copy has been given to me.

Date: _________________________ Signed: ____________________________

(Participant)

Signed: _______________________ Signed: ____________________________

(Principal Investigator or his/her authorized representative) (Person authorized to consent for participation, if required)

Witness: ______________________
APPENDIX B
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