Evaluating the Effects of "On-Task in a Box" as a Class-wide Intervention for Increasing On-Task Behavior and Academic Performance

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EVALUATING THE EFFECTS OF “ON-TASK IN A BOX” AS A CLASS-WIDE INTERVENTION FOR INCREASING ON-TASK BEHAVIOR AND ACADEMIC PERFORMANCE

by

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A Dissertation
Submitted to the Graduate School and the Department of Psychology at The University of Southern Mississippi in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

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ABSTRACT

EVALUATING THE EFFECTS OF “ON-TASK IN A BOX” AS A CLASS-WIDE INTERVENTION FOR INCREASING ON-TASK BEHAVIOR AND ACADEMIC PERFORMANCE

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The present study was designed to replicate and extend the literature on the intervention package, On-Task in a Box, as a class-wide intervention to increase on-task behavior and decrease disruptive behavior. A second purpose of the study was to evaluate the effects of the intervention on students’ academic performance. The On-Task in a Box intervention utilized video modeling to train students on how to engage in on-task behavior, as well as how to self-monitor their behavior. Additionally, the intervention included students self-monitoring their on-task behavior using self-recording forms. Depending on select students’ percentage of on-task behavior on the self-recording forms, reinforcement was provided through a group contingency. The effects of the intervention were determined through a multiple baseline design across three elementary school classrooms (1st and 2nd grade). Target students were identified to determine the effects of the class-wide intervention on individual students. Data were collected on class-wide and target students’ on-task and disruptive behavior and class-wide and target students’ academic productivity and accuracy. Results indicated the On-Task in a Box intervention was effective at increasing on-task behavior and decreasing disruptive behavior. However, no differences in academic performance were found.
Furthermore, teachers and target students found the intervention to be acceptable and effective for improving behavior.
ACKNOWLEDGMENTS

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DEDICATION

I would like to dedicate this research and degree to my parents, my nanny, my grandmother, and my sister. Without their love and support, I would not be where I am today.
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CHAPTER I - INTRODUCTION

Students engaging in off-task behavior are among the most commonly referred to school support personnel for services (Roberts, 2003). According to Rhode, Jenson, and Reavis (2010), typical students are on-task an average of 85% of the time and students with behavior problems are on-task an average of only 60% of the time. Weisz, Chaiyasit, Weiss, Eastman, and Jackson (1995) conducted a study to determine rates of off-task behavior in classrooms and found that the average American class spends approximately 77% of instruction time on-task. Engaging in disruptive behaviors often results in higher risk of truancy, school dropout, and academic problems (Hoff & Ervin, 2013).

When students engage in disruptive behaviors, they are considered off-task, which impacts their learning experience. Academic instruction is often lost as a result of teachers spending time addressing disruptive classroom behaviors. These disruptive behaviors potentially decrease learning opportunities of the students engaging in the behaviors, as well as other students in the class (Greenwood, Horton, & Utley, 2002). The American Federation of Teachers conducted a poll that found approximately 17% of teachers reporting a loss of four or more hours per week of teaching due to disruptive behaviors. Another 19% of teachers reported losing two or three hours per week of teaching to disruptive behaviors (Walker, Ramsey, & Gresham, 2004).

On-task behavior is considered a keystone behavior, or a behavior that is pivotal for changes in other behaviors in the same response class. Changes in a keystone behavior can result in changes in other behavior without specifically programming for those changes. Engaging in on-task behaviors during academic instruction is a
prerequisite skill to academic productivity and accuracy (Ducharme & Shecter, 2011). Research has shown that a link exists between academic engagement and academic achievement (Walker et al., 2004). Additionally, research has linked increasing on-task behavior with lower rates of aggression and peer rejection (Leflot, van Lier, Onghena, & Colpin, 2013). It is believed that students’ time spent engaged in academic tasks directly impacts the amount of learning that can occur (Greenwood, 1991). Researchers suggested that academic engagement mediates the relationship between school instruction and outcome. Research has shown that improvements in on-task behavior have lead to improvements in academic performance (Greenwood et al., 2002).

Currently, the problem of off-task behavior may be addressed through the use of a variety of interventions, including self-monitoring, video peer modeling, and video self-modeling (Baker, Lang, & O’Reilly, 2009; Briesch & Chafouleas, 2009). The current study evaluates the effectiveness of a practice ready intervention package called On-Task in a Box (Jenson & Sprick, 2014). On-Task in a Box utilizes self-monitoring procedures and video peer modeling to increase levels of on-task behavior and improve academic performance.

Self-Monitoring

Self-monitoring involves using self-observation and self-recording techniques to improve behavior. Self-observation consists of students observing their own behavior to determine if they engaged a target behavior. Then, the students record whether they engaged in the target behavior on a self-recording form (Amato-Zech, Hoff, & Doepke, 2006). A timer, verbal prompt, or tactile prompt may be used to signal the students to observe and record their behavior. Since students primarily conduct the intervention,
self-monitoring allows teachers to hold them responsible for their behavior, which reduces the teacher’s resources required to implement the intervention (Wood, Murdock, Cronin, Dawson, & Kirby, 1998). Self-monitoring is based on the principle of reactivity, suggesting that changes in behavior can occur as a result of improved awareness of behavior (McDougall, Morrison, & Awana, 2012). Self-monitoring meets Stokes and Osnes (1989) criteria for being a functional mediator of behavior for generalization by utilizing salient self-mediated physical stimuli. In the case of self-monitoring, the physical stimulus is the self-recording behavior that occurs during the intervention. Self-monitoring for on-task behavior has been shown to be effective across a variety of ages, disabilities (e.g., ADHD, learning disabilities, behavioral disabilities), and settings (e.g., general education and special education classrooms) (Briesch & Chafouleas, 2009). Briesch and Chafouleas (2009) found a mean Cohen’s $d$ effect size of 4.11 during their meta-analytic review of self-monitoring interventions. The intervention can be used to improve on-task behavior, academic productivity, and academic accuracy of all types resulting in increases in on-task behavior and academic performance (Maag, Reid, & DiGangi, 1993).

One study (Harris, Friedlander, Saddler, Frizzelle, & Graham, 2005) evaluated differential effects of self-monitoring strategies on on-task behavior and academic performance. Students with attention-deficit/hyperactivity disorder were trained to use both self-monitoring of attention and self-monitoring of performance strategies during independent spelling practice. No reinforcement was connected to the use of the self-monitoring interventions. Results demonstrated increases in on-task behavior and academic performance for both self-monitoring strategies. Additionally, researchers
found no differences in improvements of on-task behavior when comparing self-monitoring strategies; however, self-monitoring of attention resulted in higher levels of improvements in academic performance (Harris et al., 2005).

Amato-Zech et al. (2006) conducted a study in which three elementary-aged students receiving special education services were trained to use a self-monitoring intervention in the classroom. The students were signaled to self-monitor using a tactile prompt every three minutes. At this time, the students were required to ask themselves whether they were paying attention and record their answer on the self-monitoring form. Students were not rewarded for using the intervention or for increased on-task behavior. Researchers also probed for generalization in another classroom throughout the study. The researchers found that using a self-monitoring intervention in the classroom resulted in increased levels of on-task behavior in students with learning and behavioral difficulties without the presence of a reward system. Results also demonstrated that the intervention effects generalized to another class for all three participants. Finally, teachers and students reported the self-monitoring intervention to be highly acceptable (Amato-Zech et al., 2006).

Moore, Anderson, Glassenbury, Lang, and Didden (2013) conducted a replication study with three typically developing high school students in general education classrooms. Researchers trained students to use the MotivAider®, a tactile prompt, to self-monitor their on-task behavior. In addition, researchers trained students to graph their progress following each self-monitoring session; however, no reinforcement was utilized during the intervention. Results demonstrated that self-monitoring was effective at increasing on-task behaviors in all three typically developing students and the effects
were maintained at a three and four week follow-up. Furthermore, teachers reported that the intervention was effective and acceptable for use in the classroom (Moore et al., 2013).

Wood and colleagues (1998) found that self-monitoring led to increases in on-task behavior, which was indirectly linked to improvements in academic performance for students at-risk of academic failure. Briesch and Daniels (2013) also demonstrated that a self-monitoring intervention is effective for increasing on-task behavior for at-risk students. Teachers in this study also reported that the intervention was feasible to implement with middle-school students (Briesch & Daniels, 2013). Additionally, research has demonstrated that self-monitoring in the home setting is effective at increasing homework completion (Axelrod, Zhe, Haugen, & Klein, 2009).

Meta-analytic reviews of the literature have shown greater decreases in off-task and disruptive behaviors using self-monitoring interventions compared to teacher monitoring interventions. These studies have shown positive and moderate to large effect sizes (PND = 76.3%; $d = 4.11$) for decreasing off-task behaviors using self-monitoring interventions (Briesch & Chafouleas, 2009). Other research has found large effect sizes (.73) for self-monitoring procedures increasing on-task behavior (Reid, 1996). Some research has found that results can generalize to other settings and can be maintained over time (Dalton, Martella, & Marchand-Martella, 1999; Prater, Joy, Chilman, Temple, & Miller, 1991; Prater, Hogan, & Miller, 1992; Reid, 1996).

Self-monitoring packages have also demonstrated effectiveness in the classroom. Rooney, Hallahan, and Lloyd (1984) evaluated the effects of a class-wide self-monitoring intervention on the attention of four students with learning disabilities. Students in the
classroom were instructed to record whether they were paying attention when a tone sounded in the room. Results showed overall improvements in attention of the four target students. Moreover, the researchers added a reinforcement component for correct use of the self-recording system. They found that the addition of a reinforcement component resulted in greater improvements in the students’ attention than the self-monitoring intervention alone (Rooney et al., 1984). Chafouleas and colleagues also conducted a study that implemented a class-wide intervention package with self-management and interdependent group contingency components in three classrooms. The goal of the study was to increase academic engagement and to decrease off-task behavior. Results provided evidence that implementation of the class-wide intervention increased overall classroom on-task behavior and decreased overall classroom off-task behavior. Specifically, percent of non-overlapping data ranged from 50% to 100% for the classrooms in the study (Chafouleas, Sanetti, Jaffery, & Fallon, 2012).

Moore, Prebble, Robertson, Waetford, and Anderson (2001) utilized a self-monitoring intervention with a goal setting component with three 8-year-old male students. In addition to typical self-monitoring intervention procedures, researchers assisted students in selecting a goal for each intervention session based on their performance during the previous session. No reinforcement was connected to the use of the self-monitoring intervention. They found that a self-monitoring intervention with goal setting increased on-task behavior and the effects were maintained when the intervention was faded (Moore et al, 2001). Also, the addition of a self-graphing component has been shown to increase on-task and academic performance because it provides a visual representation of behavior and may reinforce desired behavior
Previous research has shown that teachers find self-monitoring to be an acceptable and easy to implement intervention. Self-monitoring allows teachers to focus on instruction rather than correcting off-task and disruptive behaviors (Amato-Zech et al., 2006; Dalton et al., 1999; Wood et al., 1998). Hoff and Ervin (2013) found that class-wide self-management strategies are effective at decreasing disruptive behaviors for target students and overall classrooms. They also found that class-wide self-management strategies are acceptable to teachers because they are less time intensive than individual interventions (Hoff & Ervin, 2013).

**Video Modeling**

According to Bandura (1977), children can learn through the observation of others’ behaviors. It is through this process of observational learning that children can acquire new skills and behaviors. Schunk (1987, p. 149) defined modeling as “behavioral change that derives from observing others.” Video modeling is an intervention strategy that involves watching a video of the target behavior being performed appropriately by models. Then, the target behavior is to be imitated by the child participating in the intervention. In order for observational learning to occur students must attend to the models and be motivated to imitate the behaviors of the models (Bellini & Akullian, 2007). Students are more likely to attend to and relate to models that are similar to them in age and physical characteristics. Research has shown that effective models tend to be one’s peers, one’s siblings, or one’s self (Bellini & Akullian, 2007; Schunk, 1987). Research has also found that the effects of video modeling can be immediate, and effects can be observed when implemented in conjunction with reward systems and other reinforcement opportunities.
Video modeling is an instructive form of intervention, which has more advantages compared to other interventions (Baker et al., 2009). One advantage to video modeling is the ability to pick out specific behaviors to target when editing the videos (Dowrick, 1999). Another advantage is that it can be less intrusive in the classroom than other interventions (Baker et al., 2009). Charlop-Christy, Le, and Freeman (2000) conducted a study to compare the effectiveness of video modeling and in vivo modeling. Results showed that video modeling led to participants developing skills at a faster rate than participants in the in vivo modeling condition. They also found that video modeling was more likely to generalize to other persons, settings, and stimuli compared to in vivo modeling (Charlop-Christy et al., 2000).

Video modeling is also considered cost effective and less time consuming compared to other interventions used in the classroom (Hitchcock, Dowrick, & Prater, 2003). Measures of time and cost efficiency have demonstrated that the time necessary for training, videoing, and implementation of video modeling interventions is less than the time necessary for training and implementation of in vivo modeling. Also, video modeling has been shown to be more cost effective compared to in vivo modeling (Charlop-Christy et al., 2000). Research has shown that video modeling interventions are acceptable and feasible in a classroom setting (Baker et al., 2009). Some studies in the Hitchcock and colleagues (2003) review provide evidence that supports video modeling interventions as having positive social validity.

In the Baker et al. (2009) review of video modeling interventions, students were found to experience increases in on-task behaviors, increases in peer interactions, increases in appropriate classroom behaviors, and decreases in inappropriate classroom
behaviors. Multiple reviews of video modeling have shown moderate to strong intervention, maintenance, and generalization effects on a variety of skills and behaviors, including social skills, communication skills, functional skills, and behavioral functioning (Bellini & Akullian, 2007; Delano, 2007; Hitchcock et al., 2003). The effects can be seen for typically developing students and students with a variety of disabilities, including autism spectrum disorders and emotional and behavioral disorders (Baker et al., 2009; Bellini & Akullian, 2007; Delano, 2007). Baker and colleagues (2009) found that video modeling was highly effective for increasing on-task behavior and moderately effective for decreasing inappropriate behavior.

In the Richards, Heathfield, and Jenson (2010) study, a class-wide peer modeling intervention was conducted for three classrooms. During intervention, students watched videos of peers modeling appropriate on-task behaviors while the researcher described the behaviors. After watching the video, on-task behaviors were specifically discussed with the students. The students were then asked to make a commitment to imitate the peers in the videos and engage in on-task behaviors. When the students made the commitment either verbally or by raising their hands, they were provided with reinforcement. Researchers observed overall classroom on-task behavior, as well as probed for academic performance by examining math assignments. Results showed that one classroom’s mean on-task behavior increased from 68% at baseline to 75% during intervention. Another classroom’s mean on-task behavior increased from 69% at baseline to 86% during intervention. The last classroom’s mean on-task behavior increased from 73% at baseline to 85% during intervention. These results are helpful because they demonstrate that class-wide video modeling interventions are effective in
increasing on-task behavior. Changes in on-task behavior were associated with large
effect sizes for two classrooms and a moderate effect size for one classroom. Results
showed a 5% improvement in academic performance for two classrooms and a 7%
 improvement in academic performance for one classroom (Richards et al., 2010). This
research provides evidence for using video peer modeling as a class-wide intervention for
promoting academic performance.

Combined Self-Monitoring and Video Modeling Interventions

Previously mentioned evidence-based interventions have been researched by
evaluating their effectiveness when combined into an intervention package. Blood,
Johnson, Ridenour, Simmons, and Crouch (2011) compared the efficacy of a video
modeling intervention delivered via iPod touch® to the efficacy of a video modeling
intervention combined with a self-monitoring intervention. In the video modeling phase,
the participant would watch a video of peer models before class. Prior to the combined
intervention phase, the participant was trained to self-monitor his on-task behavior.
During this phase, the participant watched the same peer modeling videos as in the
previous phase and self-monitored his behavior by marking on a self-recording form
when signaled by a timer. Results showed an increase in on-task behavior during the
video modeling alone phase; however, the results demonstrated variability. Further
increases were shown in the combined intervention phase, and variability was reduced
with the addition of a self-monitoring component. The study provides support for the use
of a combined video modeling and self-monitoring intervention package because it
provides larger and more stable increases of on-task behavior compared to video
modeling alone (Blood et al., 2011).
Another study was conducted to evaluate the effects of a combined self-monitoring and video self-modeling intervention package on the off-task behaviors of students with autism spectrum disorder (Coyle & Cole, 2004). Videotapes of each student behaving appropriately were created during baseline observations, and the students watched their respective videos before being trained on the self-monitoring procedures. The self-monitoring procedure consisted of marking a box with a picture of “working” when they were on-task or a box with a picture of “not working” when they were off-task. Researchers found that a combined intervention of video self-modeling and self-monitoring was effective for decreasing the off-task behavior of three children with autism and stabilizing their behavior (Coyle & Cole, 2004).

A pilot study by King, Radley, Jenson, Clark, and O’Neill (2014) was conducted on the combination of self-monitoring, video modeling, and reinforcement contingencies to determine if they were effective in a treatment package. Visual analysis of a multiple probe, multiple baseline design was used in this study to evaluate effects of the intervention (King et al., 2014). Four target students were referred for inclusion in the study and were trained on the definitions of on-task and off-task behaviors and how to self-monitor their own behaviors. They also watched self-modeling videos and videos of peers engaging in appropriate on-task behaviors. The participants would watch the peer modeling videos before every session and practice recording on-task and off-task behaviors. Researchers observed the students’ on-task and off-task behaviors while the students self-monitored their own behaviors. When students participated in each session, they were able to use a spinner to determine which reward they would receive at the end of the session.
Results of the study found that the mean on-task behavior for all participants increased from 47% at baseline to 81% during the intervention (King et al., 2014). A separate effect size was calculated for each participant using the Busk and Serlin (1992) approach. In this approach, the mean of the baseline phase is subtracted from the intervention phase and divided by the standard deviation of the baseline (Busk & Serlin, 1992). Effect sizes for participants ranged from 5.19 to 6.00, which are considered large effect sizes. The percentage of nonoverlapping data (PND) score for each participant was 100%, which is considered highly effective. These results demonstrate that video modeling, self-monitoring, and reinforcement components are effective at increasing on-task behavior in the classroom when combined in a single intervention package. Results also found that mean on-task behavior for all participants increased to 84% during the follow-up phase where the intervention was terminated, which suggest positive maintenance effects. Additionally, teachers found the intervention to be highly acceptable based on their ratings on a measure of social validity (King et al., 2014).

On-Task in a Box

On-Task in a Box is a practice-ready intervention (Jenson & Sprick, 2014), which means all materials used during implementation of the intervention are commercially available for interventionist use. The main goal of the intervention package is to increase the on-task behaviors of students in the classroom. On-Task in a Box combines peer video modeling and self-monitoring to change behaviors in the classroom. The intervention can be used with individual students, a small group of students, or a classroom. In the On-Task in a Box program, students view animated videos via DVD that teach them about on-task and off-task behavior, as well as how to self-monitor their
behavior. Additionally, students watch peer-modeling videos that demonstrate appropriate ways to engage in on-task behavior. Students are responsible for observing and monitoring their own behavior, which requires less effort on the part of the teacher. The students are signaled using a MotivAider® to self-monitor their behavior on a self-recording form. The teacher then collects the forms and evaluates the scores. Students then plot their behavior on a self-plotting graph to track their progress over time. Based on a predetermined goal, the students are then provided reinforcement if the goal is met. The On-Task in a Box intervention could be more time effective compared to other interventions because all materials are provided within the package. Other interventions often require time to develop any materials used in the intervention.

In an unpublished dissertation, King (2013) evaluated the On-Task in a Box program when used with individual students. Six participants watched videos that provided definitions of on-task and off-task behaviors, how to self-monitor their behavior using a MotivAider®, and how to graph their behavior using a self-graphing form. Then the participants watched videos of peers modeling the appropriate behaviors twice a week and were reinforced for their participation. Participants subsequently used the self-monitoring component during independent seatwork. As previous evaluations have found on-task behavior to be a keystone behavior, King (2013) evaluated the impact the intervention package had on academic performance, including academic productivity and accuracy. Academic performance was assessed through the completion of math curriculum-based measures.

Similar to King et al. (2014), King (2013) found that on-task behavior increased from baseline phase to intervention phase for all participants. On average, participants
engaged in on-task behavior only 21% of intervals observed during baseline. On-task behavior increased to a mean of 68% during the intervention phase, determined to be a large effect. The study also demonstrated an increase in mean problem completion from 26 problems in the baseline phase to 33 problems per observational period in the intervention phase. Academic accuracy increased from 55% of problems correct in the baseline phase to 79% of problems correct in the intervention phase. Results were shown to be maintained during a 3-week follow-up. Teachers and participants indicated that they found the intervention to be highly acceptable (King, 2013). One limitation of the study was that the intervention was only used with individual students; therefore, there was no evidence that the intervention package was effective as a class-wide intervention.

Another study was conducted that utilized the On-Task in a Box program as a class-wide intervention (Battaglia, Radley, & Ness, 2015). Researchers wanted to determine if the intervention program could increase on-task behavior for an entire classroom. In the class-wide intervention, participant classes watched the videos to learn how to use the intervention components (e.g., how to use the self-recording form), followed by peer modeling videos once during a training period to demonstrate appropriate behavior. During the intervention, the teacher used a MotivAider® or a timer as a signal to tell the students to record their behavior on a 2-minute schedule. Once the intervention session was completed, the teacher collected the self-recording forms and randomly selected five forms to plot class behavior. The whole class was rewarded if the selected students’ behavior exceeded a predetermined goal.

Results showed that all classrooms had increases in on-task behavior from baseline to intervention phases. Classroom A increased from a mean of 53.6% to a mean
of 81.6% in on-task behavior; Classroom B increased from a mean of 43.2% to a mean of 76.4% in on-task behavior; and Classroom C increased from a mean of 66.4% to a mean of 78.2% in on-task behavior. These data produced large effect sizes with NAP scores ranging from 0.94 to 1.00. Teachers in this study found the intervention to be moderately to highly acceptable (Battaglia et al., 2015). The study contained some limitations that should be addressed. First, there was low treatment integrity for one teacher, therefore limiting the internal validity of the study. The threat to internal validity could be addressed by improving training strategies. Another important limitation of the study was the lack of data on how the intervention affects academic performance and the relationship to the social validity of the intervention, which was addressed in the current study.

Purpose of Study

Evidence-based behavioral interventions are not often implemented in school settings because school personnel do not access available information and resources on these interventions (Walker, 2004). As a result, the research-to-practice gap is approximately twenty years in education (Walker, 2004). A variety of factors exist that are barriers to implementation in schools, such as limited financial resources. Walker (2004) speculated that interventions that are cost effective and can change the behavior of many students are more likely to be implemented by teachers in the classroom (Walker, 2004). Interventions are more likely to be implemented in the community if they contain materials and procedural guidelines for implementation of the intervention (Dingfelder & Mandell, 2011).
The primary purpose of the present study was to evaluate the effects of the On-Task in a Box program used as a class-wide intervention for increasing class-wide and target students’ on-task behavior and decreasing disruptive behaviors. A secondary purpose of the study was to evaluate the program’s effect on academic performance. Specifically, the study evaluated if utilization of the program would lead to increases in academic productivity and academic accuracy. The study extends the literature on the On-Task in a Box program by determining the extent of the effects of the program when utilized as a class-wide intervention.

Research Questions

The following research questions were assessed in the present study:

1. Would implementation of the class-wide On-Task in a Box intervention package result in increased on-task behavior and decreased disruptive behaviors in elementary school classrooms?

2. Would implementation of the class-wide On-Task in a Box intervention package result in increased on-task behavior and decreased disruptive behaviors in target elementary school students?

3. Would implementation of the class-wide On-Task in a Box intervention package result in increased academic productivity and/or accuracy for elementary school classrooms?

4. Would implementation of the class-wide On-Task in a Box intervention package result in increased academic productivity and/or accuracy for target elementary school students?
5. Would the class-wide On-Task in a Box intervention package be socially valid to teachers and/or target students in elementary school classrooms?
CHAPTER II– METHOD

Participants and Setting

Participants included three elementary school general education classrooms that
were referred for participation based on teacher/administrative referral for low levels of
classroom on-task behavior. Classes were recruited from small urban areas in a
southeastern state. All classes participating in the study were in one school, which
comprised of 94% African American students, 3% Hispanic students, 2% Mixed Race
students, and 1% Caucasian students. Ninety-seven percent of students in the school
received free or reduced-price lunch.

The Institutional Review Board reviewed and approved all aspects of the study
before the study began (Appendix A). The school’s behavioral interventionist was asked
to refer target classrooms for inclusion in the study due to reports of students engaging in
high levels of disruptive behavior. Informed consent (Appendix B) was obtained from
teachers of identified classes. Additionally, teachers were asked to nominate one student
that they perceived to be the most disruptive, and data were collected for these target
students. For inclusion in the study, each class met a criterion in which the students were
engaging in on-task during no more than 70% of intervals. Permission was obtained
from proper school authorities, including the school superintendent and principal.
Informed consent (Appendix C) was obtained from the parents/guardians of the target
students. Data gathered for non-target students were collapsed across the classroom and
presented for the whole class. Therefore, identifying information was not collected for
individual students, with the exception of the target students. Informed consent was not
obtained from non-target students in the classroom because the intervention fell under the scope of general classroom management conducted by the schools.

Class A was a first grade class with 19 students, including 18 African American students and 1 Hispanic student. The class included 9 female students and 10 male students. The teacher was a Caucasian female in her first year of teaching, and she was working towards earning a Master’s degree in Dyslexia Therapy. The target student, Monroe, was a 7-year-old African American male. He did not receive special education services at the time of the intervention.

Class B was a first grade class with 20 students, and all students were African American. The class included 12 female students and 8 male students. The teacher was an African American female in her first year of teaching, and she had a Bachelor’s degree in Education. The target student, Crystal, was a 7-year-old African American female. She did not receive special education services at the time of the intervention.

Class C was a second grade class with 24 students, and all students were African American. The class included 12 female students and 12 male students. The teacher was an African American female in her sixth year of teaching, and she had a Bachelor’s degree in Education. The target student, Amber, was a 9-year-old African American female. She did not receive special education services at the time of the intervention.

Materials

The On-Task in a Box intervention package (Jenson & Sprick, 2014) included an instructional manual, printable self-recording forms and self-plotting graphs, Fasthands Animation DVD, peer modeling videos, and a MotivAider®. The instructional manual included scripts and protocols of the intervention for use by the intervention agent. The
Fasthands Animation DVD used animated cartoon drawings to teach the viewer the definition and provide examples for on-task and off-task behavior. The DVD also taught the viewer how to self-monitor, record, and graph their behavior. The peer modeling videos were approximately five minutes in length, and they showed peers appropriately engaging in on-task behaviors. The peers depicted in the videos ranged from first through sixth grade, included both males and females and a variety of ethnicities. Videos were viewed using the teachers’ laptop and the smart board located in each classroom.

The MotivAider® (MotivAider, 2000) was a device that provided tactile prompts at fixed intervals to signal when to record behavior during self-monitoring interventions. All students in the classrooms used a self-recording form during the self-monitoring component of the intervention package. The teachers used the self-graphing form to provide a visual representation of the classes’ behavior.

Furthermore, math worksheets were developed based on the current curriculum identified by each teacher and were generated from Intervention Central (Wright, 2015). Math worksheets for Class A consisted of 45 two-digit addition and subtraction problems without regrouping. Class A received fewer items on the math worksheets compared to the other classes because the teacher indicated that the students in the class were on a lower instructional level compared to the other students. Class B’s math worksheets consisted of 75 two-digit addition problems with regrouping. Math worksheets for Class C were comprised of 75 three-digit addition and subtraction problems with and without regrouping. There was no technical adequacy data for the math worksheets utilized in the study. Finally, procedural integrity checklists (Appendix D and E) and treatment integrity checklist (Appendix F) were used to ensure consistent implementation across each class.
Dependent Measures

The primary dependent variable was the occurrence of on-task behavior and disruptive behaviors. This was assessed in two ways. First, the study evaluated the on-task and disruptive behaviors of the class as a whole. Secondly, the study evaluated the on-task and disruptive behaviors of target students. On-task behavior was defined as “eyes on the teacher or seatwork being done, engaged in reading, making appropriate comments, or writing down answers as appropriate for the specific task” (Richards et al., 2010, p. 55). Disruptive behaviors were defined as playing with objects, being out of seat, being noncompliant, and talking out. Playing with objects was defined as manipulating objects without teacher permission. Out of seat was defined as student fully or partially out of assigned seat without teacher permission. Noncompliance was defined as breaking a classroom rule or not following teacher directions within 15 seconds. Talking out was defined as inappropriate verbalizations or making sounds with object, mouth, or body. These definitions of disruptive behaviors were adopted from The Tough Kid Tool Box (Jenson, Rhode, & Reavis, 2009). Additionally, teachers were interviewed to determine any additional disruptive behaviors to be coded; however, no additional disruptive behaviors were identified.

On-task and disruptive behaviors were measured using a 10-second momentary time-sampling method. This method required the observer to record the occurrence of on-task or disruptive behaviors when signaled at a particular moment during the interval. The target students and the non-target students were observed using an alternating observation method. Therefore, the observer looked at the target student during every other interval and rotated looking at non-target students during the other intervals, coding
only one student per interval. Data for the non-target students were collapsed across students to obtain an estimate of the overall classroom behavior. Observations were conducted during 20-minutes of independent math seatwork.

**Academic Performance**

The second dependent variable was academic performance (i.e., academic productivity and academic accuracy). Both class-wide and target students’ academic performance was assessed via curriculum-base math worksheets. The worksheets consisted of curriculum-based math problems generated from Intervention Central (Wright, 2015). The worksheets consisted of different problems during each session; however, the same type of problems were included (e.g., three-digit subtraction with regrouping). Academic productivity was defined as the percentage of items completed on a curriculum-based math worksheet, which was calculated by dividing the number of items completed by the total number of items and multiplied by 100. Academic accuracy was defined as the percentage of items scored correct on a curriculum-based math worksheet, which was calculated by dividing the number of items scored correct by the total number of items attempted and multiplied by 100.

**Social Validity**

Once the intervention phase was complete, the teachers were asked to complete a modified version of the Behavioral Intervention Rating Scale (BIRS; Elliot & Treuting, 1991) (Appendix G). The BIRS was developed to assess teacher’s perceptions the acceptability and effectiveness of a behavioral intervention. The questionnaire contains 24 items that are rated on a Likert scale where “1 = strongly disagree” and “6 = strongly agree” (Elliot & Treuting, 1991). A factor analysis was conducted on the BIRS and
resulted in three factors that accounted for 73.6% of the variance: Acceptability, Effectiveness, and Time. Internal consistency was measured by obtaining coefficient alpha values for the total BIRS and the factors. The total BIRS resulted in an alpha level of .97, and Acceptability, Effectiveness, Time factors resulted in alpha levels of .97, .92, and .87, respectively (Elliot & Treuting, 1991). The BIRS was modified to relate the questions to a class-wide intervention rather than an intervention for target students and was worded in the past tense. Research has shown that modifications to the IRP-15, which includes 15 of the 24 items on the BIRS, have not significantly impacted the psychometrics of the measure (Freer & Watson, 1999).

A modified version of the Children’s Intervention Rating Profile (CIRP; Witt & Elliot, 1985) (Appendix H) was used to assess the target students’ acceptability of the intervention. Students rated items using a Likert scale ranging from 1 to 6. Higher scores on the CIRP indicate higher acceptability. The modified CIRP contains seven items that load onto one factor of acceptability with an average coefficient alpha of .86 (Turco & Elliot, 1986).

Design

A multiple baseline design across three classrooms (Kratochwill et al., 2010) was used to determine the effectiveness of the class-wide intervention for increasing on-task behaviors and decreasing disruptive behaviors for the class and target students. A minimum of five observations per phase was collected. Visual analysis of level, trend, and variability of the class-wide on-task behavior was used to determine when phase changes should occur. Academic performance (i.e., academic productivity and academic accuracy) was graphed separately using a multiple baseline design.
Procedures

Baseline

A screening procedure using one direct observation was utilized to determine if classes met the inclusion criteria of on-task behavior occurring during no more than 70% of intervals. Once classes met the screening criteria, the data point operated as the first baseline data point. Baseline data were collected to determine the classes’ current level of on-task behavior and disruptive behaviors and to determine the on-task goal for use during the intervention. During baseline data collection, teachers were instructed to continue to use their typical classroom management strategies. Students worked on curriculum based math worksheets during the baseline phase, and the primary investigator calculated baseline percentages of academic productivity and accuracy for the class and target students.

Teacher Training

During the teacher training, the primary investigator met with the teachers to discuss the goals and components of the program. The teachers were introduced to the materials, including the self-recording forms, the MotivAider, and the self-plotting graph. A script (see Appendix I) was provided to the teachers that included instructions for conducting the classroom orientation. The script was reviewed with the teachers and any questions about it were answered. Finally, the primary investigator and teachers developed a list of possible rewards that the class could earn.

Classroom Orientation

During the classroom orientation, the teachers introduced the students to the intervention and the potential rewards they could earn. The students then watched the
Fasthands video that taught the definition of on-task and off-task behaviors. Students were then asked to define and provide examples of on-task and off-task behavior in order to measure their understanding of the terms. The video continued through teaching the students how to self-record their own on-task behaviors using the self-recording forms. They also learned that the teacher would graph their progress throughout the intervention. Next, the students watched the peer modeling video as a demonstration of behaviors in which they should engage in. All procedures for the orientation session followed the protocol provided in the On-Task in a Box manual (Jenson & Sprick, 2014).

**Intervention**

Once students had been properly trained on self-recording procedures, the intervention began. During the intervention, the teacher reminded the students that they were to self-record their own on-task behavior during independent seatwork. Then, the teacher distributed the self-recording forms and math worksheets to the students. The students had twenty minutes to work on the assigned worksheets, while self-monitoring their behavior. The teacher used a MotivAider® to tell the students to “record” when it vibrated, which was every 2 minutes. At that time, students were to record an “x” if they are on-task or a “—” if they are off-task.

At the end of the session, the teacher collected the self-recording forms and the math worksheets. Then, the teacher randomly and anonymously selected 5 students’ self-recording forms and averaged the percentage of on-task marks on the form. If the average percentage of on-task behavior was above the predetermined goal, one of the rewards from the list of approved rewards was given to the class. The goal was set at an approximate 10% increase from the class’ average percentage of on-task behavior during
baseline. The teacher then marked the Self-Plotting graph with the average score of the selected students. This allowed the students to see if they were making progress as a class. All procedures for the intervention phase are present in the On-Task in a Box manual (Jenson & Sprick, 2014).

During the intervention phase, researchers observed the on-task behavior and disruptive behaviors of the students in the class to determine the effect of the intervention on on-task and disruptive behaviors. Also, the math worksheets were scored for academic productivity and academic accuracy following each session of the intervention.

*Interobserver Agreement*

Interobserver agreement (IOA) between the primary researcher and trained graduate students was collected for baseline and intervention phases. Observers were trained on the operational definitions of on-task behavior and disruptive behaviors and the observation procedures. Observers engaged in practice classroom observations until a minimum of 90% reliability with the primary investigator was obtained. Observers maintained at least 85% agreement during all observations. IOA for on-task behaviors and disruptive behaviors were calculated as agreement of occurrences and nonoccurrences. The percentage of agreements was calculated by dividing the number of agreements by number of agreements and disagreements and multiplying by 100.

IOA was obtained during 40% of baseline and intervention observations in Class A; the average percentage of agreement was 95.3% (range = 94.1% - 96.6%) for baseline and 93.1% (range = 90.4% - 95.8%). In Class B, IOA was obtained during 57% of baseline observations and 60% of intervention observations. The average percentage of agreement was 91.3% (range = 88.7% - 94.5%) for baseline and 94.4% (range = 91.6% -
95.8%) for intervention. IOA was obtained during 44% of baseline observations and 33% of intervention observations in Class C. The average percentage of agreement was 95.4% (range = 92.9% - 98.7%) during baseline and 96% (range = 94.5% - 97.5%) during intervention.

Furthermore, kappa values were calculated to account for chance agreements between observers. Kappa is a more conservative estimate of agreement as it accounts for both occurrences and nonoccurrences of behaviors. Kappa values were calculated for on-task behavior and disruptive behaviors using the formula provided by Uebersax (1982). Kappa values could range from -1.00 to +1.00 with values of less than 0.40 considered poor agreement, values of 0.40 to 0.60 considered fair agreement, values of 0.60 to 0.75 considered good agreement, and values greater than 0.75 considered excellent agreement (Watkins & Pacheco, 2000). Overall, excellent agreement was displayed for each class. The kappa values were 0.839, 0.786, and 0.853 for Class A, Class B, and Class C, respectively.

Interscorer Agreement

Interscorer agreement between the primary researcher and a trained graduate student was collected for the math worksheets for academic productivity and academic accuracy during baseline and intervention phases. Interscorer agreement for academic productivity was calculated as the agreement of the number of items completed. Interscorer agreement for academic accuracy was calculated as the agreement of the number of items correct. Both interscorer agreements were determined by dividing the number of agreements by the number of agreements and disagreements and multiplying by 100.
Interscorer agreement for Class A was obtained for 20% of probes during each the baseline and intervention phases. The average percentage of agreement for academic accuracy was 99.7% (range = 96.2-100%) for the baseline phase and 99.5% (range = 92.6-100%) for the intervention phase. Interscorer agreement was 100% for academic productivity across baseline and intervention phases. For Class B, interscorer agreement was calculated for 28.5% of baseline probes with a mean of 99.7% (range = 97.3-100%) for academic accuracy and was 100% for academic productivity. Agreement was obtained for 20% of probes during the intervention phase with a mean of 99.9% (range = 98.6-100%) for academic productivity and was 100% for academic accuracy. Interscorer agreement was obtained for 22.2% of probes for the baseline phase and 33.3% of sessions for the intervention phase. The average percentage of agreement for academic productivity was 99.3% (range = 80-100%) during baseline and 99.9% (range = 98.6-100%) during intervention. Interscorer agreement for academic accuracy was a mean of 99.3% (range = 93.3-100%) during the baseline phase and 99.8% (range = 94.5-100%) during the intervention phase.

Procedural Integrity

The primary investigator and other trained doctoral students assessed procedural integrity during all of the teacher training and classroom orientation sessions. Checklists were used to ensure that training sessions were conducted in the same manner across teachers and classes. The teacher training checklist (see Appendix C) included steps for training the teacher on the intervention and classroom orientation components. The classroom orientation checklist (see Appendix D) included steps for training the students on the components of the intervention. Procedural integrity was calculated by dividing
the number of steps completed by the total number of steps. Procedural integrity was 100% for all training sessions. IOA for procedural integrity was collected for at 66% of teacher training sessions and 100% of classroom orientation sessions and was calculated by dividing the number of agreements of steps completed by the total number of steps. IOA for procedural integrity was 100% for teacher training and classroom orientation sessions.

*Treatment Integrity*

Similar to procedural integrity, treatment integrity was assessed to ensure that the intervention was being completed with fidelity. Treatment integrity data were collected in 100% intervention sessions via a checklist (see Appendix E). Treatment integrity was calculated by dividing the number of completed steps by the number of total steps. The average percentage of treatment integrity for Class A was 95.5% (range = 88.8% - 100%). In Class B, the average percentage of treatment integrity was 100%. The average percentage of treatment integrity for Class C was 94.4% (range = 88.8% - 100%). IOA of treatment integrity was collected during 40%, 57%, and 33% of intervention sessions for Class A, Class B, and Class C, respectively. IOA was calculated by dividing the number of agreements of steps completed by the total number of steps. IOA for treatment integrity was 100% for all observations across all classes.

*Data Analysis*

Visual analysis of the level, trend, variability, immediacy, nonoverlap, and consistency of data across phases of class-wide on-task behavior and disruptive behaviors was used as the primary form of data analysis, and class-wide on-task behavior was used to determine phase changes (Horner, Swaminathan, Sugai & Smolkowski, 2012). Phase
changes occurred when class-wide on-task behavior was stable or having a decreasing trend, as well as when the previous panel exhibited an intervention effect. Visual analysis of the on-task behavior and disruptive behaviors of the target students were also evaluated. Additionally, visual analysis of class-wide academic performance and the academic performance of the target students were evaluated.

Furthermore, effect sizes for on-task behavior, disruptive behavior, and academic productivity and accuracy were calculated by evaluating the nonoverlap of all pairs (NAP). NAP compares the overlap between each baseline data point and each intervention data point. NAP scores were calculated using the Parker and Vannest (2009) procedures. These scores could demonstrate weak effects (0.00-0.65), medium effects (0.66-0.92), or strong effects (0.93-1.00). NAP scores were found to be closely related to the $R^2$ effect size (Rho = .92) and visual judgments (Rho = .84) (Parker & Vannest, 2009). Tau-U effect sizes were also calculated for on-task behavior, disruptive behaviors, and academic productivity and accuracy. Tau-U combines nonoverlap data between phases with the trend in the data, and it allows for the control of trend, yielding a more conservative estimate of intervention effect (Parker, Vannest, Davis & Sauber, 2011).

Pearson’s correlation coefficients were calculated to determine the relationship between the average student reports of on-task behavior, as reported on the self-recording forms, and direct observations of on-task behavior. The average student reports of on-task behavior were calculated by adding the percentage of on-task behavior recorded on each student’s self-recording form per day and dividing by the total number of student participating in the intervention. Correlation coefficients could range from -1.00 to 1.00.
with 0 representing no relationship between the variables. Coefficients of +/- 0.5 or greater are considered large effects with coefficients of +/- 0.3 or greater being considered medium effects and +/- 0.1 or greater being considered small effects (Field, 2009). Finally, descriptive analysis was used to evaluate social validity measures.
CHAPTER III - RESULTS

On-Task and Disruptive Behavior

Class-wide Behavior

The percentages of intervals in which on-task and disruptive behavior occurred for each class are displayed in Figure 1. The NAP and Tau-U effect sizes for each class are presented in Table 1. In Class A, the baseline level of on-task behavior was low with slight variability with a mean of 57.62%, and the baseline level of disruptive behavior was elevated and stable ($M = 26.92\%$). Following implementation of the On-Task in a Box intervention package, on-task behavior demonstrated immediate increases in level ($M = 84.68\%$) and immediate decreases were exhibited for disruptive behavior ($M = 8.64\%$). Visually, there is no overlap between data points in the baseline phase and data points in the intervention phase for on-task and disruptive behaviors. NAP and Tau-U scores indicated large effects for increasing on-task behavior and decreasing disruptive behavior. Pearson’s correlation coefficient ($r = 0.018$) indicates that there is no relationship between the percentage of on-task behavior in direct observations and percentage of on-task behavior in student reports for Class A.

In Class B, baseline data were characterized by low levels of on-task behavior with a decreasing trend ($M = 57.02\%$) and elevated levels of disruptive behavior with an increasing trend ($M = 22.77\%$). Implementation of the intervention resulted in immediate increases in level and trend of on-task behavior ($M = 75.4\%$). Disruptive behavior resulted in decreases in level with a decreasing trend immediately following implementation of the intervention ($M = 10.62\%$). No data points in the baseline
Figure 1. Class-wide On-Task and Disruptive Behavior phase overlap with data points in the intervention phase for both on-task and disruptive behaviors. Additionally, NAP and Tau-U calculations indicated large effects for on-task behaviors.
behavior and medium effects for disruptive behavior. Pearson’s correlation coefficient ($r = -0.79$) indicates a large, negative relationship, meaning as percentage of on-task behavior in direct observations increases, the percentage of on-task behavior as reported by students decreases and vice versa.

**Table 2**

*Class-wide On-Task and Disruptive Behavior NAP and Tau-U Effect Sizes*

<table>
<thead>
<tr>
<th>Class</th>
<th>On-Task Behavior</th>
<th>Disruptive Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NAP</td>
<td>Tau-U</td>
</tr>
<tr>
<td>A</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>B</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>C</td>
<td>0.99</td>
<td>0.98</td>
</tr>
</tbody>
</table>

NAP scores between 0 and 0.65 are considered weak effects, scores between 0.66 and 0.92 are considered moderate, and scores from 0.93 to 1.00 are considered strong (Parker & Vannest, 2009).

During baseline, Class C displayed a low, stable level of on-task behavior ($M = 52.95\%$) and an elevated and relatively stable level of disruptive behavior with a spike occurring at datum 9 ($M = 24.96\%$). Following implementation of the intervention package, the level on-task behavior immediately increased and was stable with the exception of datum 13 ($M = 79.4\%$). Disruptive behavior experienced immediate decreases in level and remained stable following intervention implementation ($M = 7.76\%$). There is a slight overlap between the baseline and interventions conditions for Class C due to the overlap of one data point in the intervention phase with a data point in baseline phase. NAP and Tau-U scores indicated strong effects for on-task behavior. Effects on disruptive behavior were considered moderate to strong based on NAP scores; however, Tau-U scores indicated only medium effects for disruptive behavior.
Additionally, Pearson’s correlation coefficient \( r = 0.77 \) resulted in a large, positive relationship between direct observation of on-task behavior and student reports of on-task behavior. Therefore, the correlation indicates that as direct observation of on-task behavior increased, student reports of on-task behavior increased.

During the implementation of the intervention in Class A, there were no changes in on-task and disruptive behaviors in Class B and Class C while they remained in the baseline phase. Furthermore, when the intervention was introduced to Class B, there were no changes in behaviors in Class C while it remained in the baseline phase.

**Target Student Behavior**

The percentages of intervals in which each target student’s on-task and disruptive behavior occurred are presented in Figure 2. The NAP and Tau-U scores for each target student are presented in Table 2. During baseline, Monroe exhibited low and variable levels of on-task behavior \( (M = 51.06\%) \) and elevated and variable levels of disruptive behavior \( (M = 35.5\%) \). After implementation of the On-Task in a Box intervention package, on-task behavior resulted in an initial increase in level followed by a decreasing trend \( (M = 52.98\%) \). Disruptive behavior exhibited an initial decrease followed by an increasing trend \( (M = 33.98\%) \). There is high overlap between data in the baseline and intervention phases for on-task and disruptive behaviors. Furthermore, NAP and Tau-U scores indicated weak effects for both Monroe’s on-task and disruptive behaviors.

Crystal’s behavior during baseline was characterized by low, stable levels of on-task behavior \( (M = 53.25\%) \). During baseline, Crystal’s level disruptive behavior was elevated with an increasing trend \( (M = 35.71\%) \). On-task behavior increased \( (M = 78.86\%) \) and disruptive behavior decreased \( (M = 18.3\%) \) following the second day of
Figure 2. Target Student On-Task and Disruptive Behavior intervention implementation and maintained stability. One data point for on-task and disruptive behaviors in the intervention phase overlaps with multiple data points in the
baseline phase. Improvements in on-task behavior and disruptive behavior are considered medium based on NAP scores; however, they are considered weak based on Tau-U scores.

During baseline, Amber exhibited low, stable rates on-task behavior ($M = 47.68\%$) and elevated, stable levels of disruptive behavior ($M = 39.97\%$). Following implementation of the intervention package, Amber’s on-task behavior demonstrated immediate increases in level ($M = 66.1\%$); however, it also demonstrated a slight increase in variability. Her disruptive behavior immediately decreased and remained stable following implementation of the intervention ($M = 6.1\%$). There is no overlap between Amber’s baseline data and intervention data for on-task and disruptive behaviors. NAP and Tau-U scores indicate the intervention resulted in strong effects for increasing on-task behavior and decreasing disruptive behavior.

Table 3

<table>
<thead>
<tr>
<th>Target Student</th>
<th>On-Task Behavior</th>
<th>Disruptive Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NAP</td>
<td>Tau-U</td>
</tr>
<tr>
<td>Monroe</td>
<td>0.53</td>
<td>0.06</td>
</tr>
<tr>
<td>Crystal</td>
<td>0.77</td>
<td>0.55</td>
</tr>
<tr>
<td>Amber</td>
<td>1.00</td>
<td>1.00</td>
</tr>
</tbody>
</table>

NAP scores between 0 and 0.65 are considered weak effects, scores between 0.66 and 0.92 are considered moderate, and scores from 0.93 to 1.00 are considered strong (Parker & Vannest, 2009).

Furthermore, there were no changes in Crystal and Amber’s on-task or disruptive behaviors during baseline when the intervention was implemented in Monroe’s
classroom. Amber’s behavior remained consistent with her previous data during baseline when the intervention was introduced to Crystal’s classroom.

Academic Performance

Class-wide Performance

Percentages of class-wide academic productivity and academic accuracy on curriculum-based math probes are presented in Figure 3. Effect sizes for academic performance using NAP and Tau-U scores for each class are presented in Table 3. During baseline, Class A exhibited moderate levels of academic productivity with an increasing trend ($M = 68.48\%$). Class A demonstrated high levels of academic accuracy with a slight increasing trend ($M = 78.74\%$). Following implementation of the On-Task in a Box intervention package, academic productivity increased slightly ($M = 82.24\%$); however, it experienced a slight decreasing trend towards the end of the intervention and there was overlap between two data points in the intervention phase and data points in the baseline phase. Academic accuracy remained high and stable during intervention implementation ($M = 84.06\%$); however, there was a moderate amount of overlap of data between baseline and interventions. Improvements in academic productivity and academic accuracy are considered medium based on NAP scores. Improvements for academic accuracy are considered medium based on Tau-U scores; however, Tau-U scores for academic productivity are considered weak effects.

In Class B, baseline data were characterized by low levels of productivity with a slight decreasing trend ($M = 63.5\%$) and low levels of accuracy with a decreasing trend ($M = 67.97\%$). Implementation of the intervention resulted in similar levels of academic productivity with a slight increasing trend ($M = 60.98\%$). Academic accuracy exhibited
Figure 3. Class-wide Academic Performance and Academic Accuracy

similar levels with a slight increasing trend ($M = 67.2\%$) following implementation of the intervention. Both academic productivity and accuracy displayed large amounts of
overlapping data between baseline and intervention phases for Class B. NAP and Tau-U scores indicated the intervention resulted in weak effects for increasing academic productivity and academic accuracy.

Table 4

Class-wide Academic Performance NAP and Tau-U Effect Sizes

<table>
<thead>
<tr>
<th>Class</th>
<th>Academic Productivity</th>
<th>Academic Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NAP</td>
<td>Tau-U</td>
</tr>
<tr>
<td>A</td>
<td>0.88</td>
<td>0.52*</td>
</tr>
<tr>
<td>B</td>
<td>0.48</td>
<td>-0.02</td>
</tr>
<tr>
<td>C</td>
<td>0.57</td>
<td>0.14</td>
</tr>
</tbody>
</table>

NAP scores between 0 and 0.65 are considered weak effects, scores between 0.66 and 0.92 are considered moderate, and scores from 0.93 to 1.00 are considered strong (Parker & Vannest, 2009). Tau-U scores with an asterisk (*) indicate that the trend in baseline was corrected during analysis (Parker et al., 2011).

During baseline, Class C exhibited low levels of academic productivity with a decreasing trend and a moderate amount of variability \((M = 57.65\%)\). Academic accuracy also exhibited low levels with a decreasing trend and a moderate amount of variability \((M = 55.62\%)\). After implementation of the intervention, the level of academic productivity remained low but exhibited a slight increasing trend \((M = 59.7\%)\). Academic accuracy remained at similar levels to baseline but demonstrated an increasing trend \((M = 58.05\%)\). Visually, all data in the intervention phase overlaps with data from the baseline phase. Effect sizes indicate weak improvements in academic productivity and academic accuracy based on NAP and Tau-U scores.

Additionally, there were no improvements in academic productivity or accuracy in Class B and Class C in baseline when the intervention was implemented in Class A.
Academic performance in Class C remained similar to previous baseline levels when the intervention was implemented in Class B.

**Target Student Performance**

The percentages of academic productivity and academic accuracy for each target student are presented in Figure 4. Effect sizes for target student academic performance are presented in Table 4. During baseline, the level of academic productivity for Monroe was low with an increasing trend ($M = 20\%$). Monroe’s level of academic accuracy during baseline was high with an increasing trend ($M = 76.66\%$). Following implementation of the On-Task in a Box intervention, the level of Monroe’s academic productivity increased initially then experienced a decreasing trend to levels similar to baseline ($M = 35.8\%$). Monroe’s level of academic accuracy remained the same with a decreasing trend following introduction of the intervention ($M = 67\%$). The last three data points for academic productivity in the intervention phase overlap with data in the baseline phase. Furthermore, 4 of the 5 data points for academic accuracy in the intervention phase overlap with data in the baseline phase. NAP scores for Monroe indicates that the intervention had a medium effect on academic productivity and a weak effect on academic accuracy. Tau-U scores for his academic productivity and academic accuracy represent weak effects.

Baseline data for Crystal’s academic productivity was variable ranging from moderate to high levels with a mean of 74.3%. Crystal’s academic accuracy during baseline exhibited high, stable levels ($M = 88.3\%$) with the exception of datum 2. Implementation of the intervention resulted in similar levels of academic productivity and accuracy as seen in baseline. Academic productivity was initially low with a sharp
Figure 4. Target Student Academic Productivity and Academic Accuracy
increase \((M = 80\%)\). Academic accuracy remained high and stable during the intervention phase \((M = 94\%)\). All of Crystal’s academic productivity and accuracy data in the intervention phase overlaps with data from the baseline phase. NAP and Tau-U scores indicate that the intervention had weak effects on Crystal’s academic productivity and accuracy.

During baseline, Amber’s level of academic productivity was initially high and exhibited increased variability and a decreasing trend \((M = 68.37\%)\). Similarly, her academic accuracy exhibited variability and a decreasing trend during baseline \((M = 64.12\%)\). After implementation of the intervention, Amber’s academic productivity remained similar to baseline levels with variability \((M = 68.83\%)\). Academic accuracy exhibited levels similar to baseline; however, variability decreased from baseline to intervention phase \((M = 67.83\%)\). All of Amber’s academic productivity and academic accuracy data in the intervention phase overlaps with the data in the baseline phase due to Table 5

**Table 5**

*Target Student Academic Performance NAP and Tau-U Effect Sizes*

<table>
<thead>
<tr>
<th>Target Student</th>
<th>Academic Productivity</th>
<th>Academic Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NAP</td>
<td>Tau-U</td>
</tr>
<tr>
<td>Monroe</td>
<td>0.73</td>
<td>0.26*</td>
</tr>
<tr>
<td>Crystal</td>
<td>0.58</td>
<td>0.16</td>
</tr>
<tr>
<td>Amber</td>
<td>0.47</td>
<td>-0.04</td>
</tr>
</tbody>
</table>

NAP scores between 0 and 0.65 are considered weak effects, scores between 0.66 and 0.92 are considered moderate, and scores from 0.93 to 1.00 are considered strong (Parker & Vannest, 2009). Tau-U scores with an asterisk (*) indicate that the trend in baseline was corrected during analysis (Parker et al., 2011).
high levels of variability in both phases. NAP and Tau-U scores indicate the intervention had weak effects on the Amber’s academic productivity and accuracy.

Moreover, there were no changes in Crystal and Amber’s academic performance during baseline when the intervention was implemented in Monroe’s classroom. Finally, there were no changes in Amber’s additional baseline data when the intervention was implemented in Crystal’s classroom.

Social Validity

The BIRS was completed by teachers as a measure of social validity following the completion of the intervention phase. The BIRS consists of three factors including acceptability, effectiveness, and time of effectiveness. Overall, each teacher rated the intervention procedures as moderately effective and acceptable for use in their classroom. The overall mean for Class A was 4.29 with means of 5.06, 3.14, and 2.5 for acceptability, effectiveness, and time of effectiveness, respectively. The teacher in Class B rated the intervention with an overall mean of 3.83. Furthermore, she rated a mean of 4.33 for acceptability, 3.00 for effectiveness, and 3.00 for time of effectiveness. The overall mean for Class C was 4.16 with means of 4.53, 3.14, and 5 for acceptability, effectiveness, and time of effectiveness, respectively.

Additionally, target students completed the CIRP as a measure of intervention acceptability following the completion of the intervention. Overall, each target student rated the intervention as highly acceptable. The mean rating by the target student in Class A, Monroe, was 5.57. The target student in Class B, Crystal, rated the mean acceptability of the intervention as 5.14. Finally, the target student in Class C, Amber, rated the mean acceptability of the intervention as 5.28.
CHAPTER IV – DISCUSSION

Since on-task behavior is linked to the amount of learning that occurs in the classroom (Greenwood, 1991), interventions that target increasing on-task behavior and learning opportunities are essential to improved academic success. Furthermore, off-task behaviors are one of the most common referral reasons in the school system (Roberts, 2003) and take time away from teacher instruction (Walker et al., 2004). Therefore, interventions that focus on increasing on-task behavior are important for increasing the instructional time provide in the classroom. The purpose of the present study was to assess the effectiveness of the practice-ready intervention package, On-Task in a Box, at increasing levels of class-wide on-task behavior and decreasing levels of class-wide disruptive behaviors in elementary school classrooms. While the On-Task in a Box intervention has been shown to be effective in increasing on-task behavior and decreasing disruptive behavior for individual students (King, 2013; King et al., 2014), there is only one study that has evaluated its use as a class-wide intervention (Battaglia et al., 2015).

The results of the present study are consistent with previous research indicating that intervention packages consisting of self-monitoring and video modeling are effective at increasing on-task behavior and decreasing disruptive behaviors (Battaglia et al., 2015; Blood et al., 2011; Coyle & Cole, 2004; King, 2013; King et al., 2014). The effects are evident by differences between baseline and intervention phases in all three classes involved in the study, as well as moderate to large NAP and Tau-U effect sizes for each class ranging from 0.71 to 1.00. These results extend the literature by showing improvements in on-task behavior for students as young as those in first grade. Additionally, the results of the study are consistent with previous research that has shown
the On-Task in a Box intervention to be effective for increasing on-task behavior and decreasing disruptive behavior when implemented as a class-wide intervention (Battaglia et al., 2015).

Furthermore, analysis of the target students’ on-task and disruptive behaviors indicates that the intervention was effective for increasing the on-task behavior of two of the three target participants based on medium to strong NAP effect sizes ranging from 0.77 to 1.00 for those participants. It is likely that one of the target participant demonstrated weak effects because the magnitude of the intervention was not intense enough. The results are somewhat consistent with previous research indicating that the On-Task in a Box intervention is effective for individual students (King, 2013; King et al., 2014). The main difference was that the King (2013) and King et al. (2014) studies were conducted only with individual students with some differences in the procedures than the class-wide version of the intervention. Moreover, the current study suggests that using the On-Task in a Box intervention as a class-wide intervention is effective at improving the behavior of individual students.

In addition to determining the effects of the On-Task in a Box intervention on increasing on-task behavior and decreasing disruptive behavior, improvements in class-wide academic performance were evaluated during the study. Specifically, the study evaluated the effect the intervention had on each class’ academic productivity and academic accuracy. Implementation of the intervention in all three classes resulted in no clear differences in productivity or accuracy between the baseline and intervention phases. These results are not consistent with previous research that has indicated
improvements in academic performance following implementation of the On-Task in a Box intervention with individual students (King, 2013).

Also, the current study evaluated how the intervention affected the academic performance of the target student in each class. Again, implementation of the intervention resulted in no differences in academic performance for the target students with the exception of Monroe’s academic productivity. His productivity increased from 20% in baseline to 35.8% in the intervention phase and NAP scores indicated a medium effect. Unfortunately, his productivity initially increased but decreased throughout the intervention phase back to levels similar to baseline. These data are not consistent with the King (2013) study which resulted in improvements in academic performance for individual students. However, the present study was implemented as a class-wide intervention, which is different from the previous research in this area. In addition, the average levels of target student accuracy during baseline (greater than 75%) was substantially higher in the present study compared to baseline levels of accuracy (less than 60%) in the King (2013) study, making it unlikely that similar improvements could be seen in the current study.

Finally, the study aimed to evaluate the social validity of the study by measuring the teachers’ perceptions of the effectiveness and acceptability of the intervention, as well as the target students’ perceptions of the acceptability of the intervention. Teachers completed the BIRS (Elliot & Treuting, 1991) following the completion of the intervention. Overall, all three teachers rated the intervention as moderately effective and acceptable for use in their classrooms with average scores ranging from 3.83 to 4.29 out of 6.0. These scores indicate that the On-Task in a Box intervention was feasible for
teachers to implement in their classrooms and they found the intervention to be effective in changing their students’ behavior.

Target students were asked to complete the CIRP (Turco & Elliot, 1986) to determine the students’ perception of the acceptability of the intervention. Overall, the target students rated the intervention as highly acceptable with average scores ranging from 5.14 to 5.57 out of 6.0, indicating that students enjoyed participating in the intervention and found it to be fair. The results of the social validity and acceptability measures completed by the teachers and target students provide additional support for the use of the On-Task in a Box intervention in elementary school classrooms.

Limitations

These results should be considered in light of several limitations. First, the percentage of intervals on-task behavior reported in the self-recording forms for one of the three classrooms negatively correlated with the direct observation data and one classroom did not significantly correlate with the direct observation data, indicating that those two classes were not accurate in their self-recording of on-task behavior. It is possible that the intervention did not sufficiently train students to accurately self-monitor their on-task and disruptive behaviors. However, even without accurate self-recording, on-task behavior increased based on direct observation data for all classes, indicating that it may not be necessary for the students to accurately report their behavior in order for their behavior to change. Previous research supports the claim that accurate self-recording may not be necessary to increase on-task behavior; instead, the external consequences associated with self-monitoring may be enough to effect change in behavior (Webber, Scheuermann, McCall, & Coleman, 1993). Furthermore, a high
positive correlation may only indicate that students in the class were consistent with their ratings of on-task behavior.

Secondly, there were missing data from the target students due to several absences. Since the class-wide on-task behavior and disruptive behavior were the primary dependent variables, the intervention was carried out on days where the target student was absent. Despite the missing data, three data points were present in each phase of the study for each participant. Future research should extend data collection in order to increase external validity of the results.

Moreover, the intervention was only implemented during independent seatwork time, which could have attributed to the lack of improvement in academic performance. The implementation of the intervention not occurring during instructional time could have attributed to the lack of change in academic performance in the classroom. The lack of improvement in academic performance could be a result of the students being off-task or disruptive during instructional time when learning how to complete math problems would occur. Future research should consider implementing the intervention during instructional time to determine the effects on academic performance. Moreover, the math worksheets were developed based on the current curriculum for each class, not based on each student’s current level of functioning. Therefore, it is not possible to determine if the problems were difficult or easy for the students, and difficulty level of tasks could impact students’ behavior. Finally, there is no technical adequacy data for the math probes utilized during the study, which limits the knowledge about the quality of these measures. Future research should consider utilizing instructional materials comparable to students’ current level of functioning and have strong technical adequacy data. Further
replication should be conducted to increase the generalizability of the results of the study and address the limitations of the current study.

Conclusion

The results of the present study indicate that the On-Task in a Box intervention can be used in elementary school classrooms to increase class-wide on-task behavior and reduce class-wide disruptive behaviors. Moreover, the study suggests that the intervention is capable of improving the on-task behavior and reducing the disruptive behavior of an individual student when the intervention is implemented as a class-wide intervention. Given that interventions are not often implemented in schools due to lack of resources (Walker, 2004), the On-Task in a Box intervention should be considered by teachers and practitioners as a practice-ready intervention to manage class-wide behavior as well as the behavior of individual students.
APPENDIX A – Institutional Review Board Approval Letter

THE UNIVERSITY OF SOUTHERN MISSISSIPPI

INSTITUTIONAL REVIEW BOARD
118 College Drive #5147, Hattiesburg, MS 38406-0001
Phone: 601.266.5997 | Fax: 601.266.4577 | www.usm.edu/research/institutional.review.board

NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the “Adverse Effect Report Form”.
- If approved, the maximum period of approval is limited to twelve months.
- Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 15010706
PROJECT TITLE: Evaluating the Effects of On-Task In a Box as a Classwide Intervention for Increasing Rates of On-Task Behavior and Academic Performance
PROJECT TYPE: New Project
RESEARCHER(S): Allison Battaglia
COLLEGE/DIVISION: College of Education and Psychology
DEPARTMENT: Psychology
FUNDING AGENCY/SPONSOR: Forrest County Public School District
IRB COMMITTEE ACTION: Expedited Review Approval
PERIOD OF APPROVAL: 01/14/2015 to 01/13/2016
Lawrence A. Hosman, Ph.D.
Institutional Review Board
APPENDIX B – Teacher Consent Form

**Title of Study:** Evaluating the effects of “On-Task in a Box” as a class-wide intervention for increasing rates of on-task behavior and academic performance.

**Purpose:** You are being asked to participate in a study that is evaluating the effectiveness of a practice-ready intervention “On-Task in a Box” as a class-wide intervention. The goal of the program is to increase students’ academically engaged behavior and decrease disruptive behaviors. Research has shown that increased time spent academically engaged leads to improved academic performance.

**Procedure:** If you agree to participate in this study, you will be asked to perform several tasks throughout the study. A screening procedure will be conducted to verify your classroom’s capacity for participation in the study. In order to participate in the study, your classroom must demonstrate disruptive behavior in at least 30% of the observation intervals at the time of the screening session. If your classroom qualifies for participation, the intervention will be implemented in the classroom. Additionally, you will be asked to identify one student that is considered to have higher levels of disruptive behaviors than other students in the class. Data will be collected on this student individually with parental consent.

Throughout the study, classroom observations will be conducted multiple times a week by trained graduate students from the USM School Psychology program. During the first phase of the study, data will be collected on the class’ academically engaged behavior and disruptive behaviors while working on grade level math worksheets independently. Graduate students will calculate the average number of math problems completed and the number of math problems completed correctly for the class. Prior to the implementation of the intervention, you will be asked to complete a training session with the primary investigator to learn about the goals and components of the intervention, as well as the procedures for conducting the intervention. Next, you will conduct an orientation session with the students in the classroom. During the orientation, the students will, first, select rewards in which to earn during the study. Then, students will be taught the definition of on-task behavior and how to recognize and self-record their own on-task behavior by watching animated videos. Students will then practice recording on-task behavior for peers in a peer modeling video and receive a reward for practicing.

During the intervention phase, you will distribute the math worksheets and self-recording forms to students during independent seatwork. You will use a MotivAider or timer to tell the students to “record” when the timer vibrates. At this time, students will record an “x” if they are on-task or a “—” if they are off-task. At the end of the session, you will collect the self-recording forms; and then, you will randomly and anonymously select 5 students’ self-recording forms and average the number of on-task marks on the form. If the students reach the predetermined goal, they will receive a reward. Trained graduate students will observe both the class’ and target student’s academically engaged behaviors and disruptive behaviors during the intervention phase. Graduate students will collect the math worksheets and calculate the average number of problems completed and the number of problems completed correctly for the class and target student. At the end of the study, you will be asked to complete a questionnaire to assess your satisfaction with the “On-Task in a Box” intervention.
Benefits to Participation:
The study may have beneficial effects for you and the students. You may learn a new intervention designed to improve students’ academically engaged behavior during independent seatwork. Students may demonstrate decreased amounts of disruptive behaviors and more time spent academically engaged, which may lead to improved academic skills.

Risks to Participation:
There are minimal risks related to the study. Potential risks include not enjoying recording on-task behavior during class. It is possible that some students may be nervous about being singled out for the class not reaching their goal. Any students found using undesirable methods (i.e. threats, complaints, etc.) to encourage other students into improving their behavior will be removed from the study and will no longer be able to receive any rewards. Also, you may be concerned with the time it takes to use the intervention.

Voluntary Nature of the Study/Confidentiality:
Your participation in the study is entirely voluntary and you may refuse to complete the study at any point without penalty, prejudice, or loss of benefits. All data collected from, checklists, questionnaires and observations will be recorded in the password-protected computer belonging to the Principal Investigator. Only people directly connected to the study will have access to this or other information. All identifying information will be removed before the dissemination of results from the study. Your name and other identifying information will not be used in the research papers, any submission to a professional journal for publication, or presentation.

Teacher’s Consent: If you agree to participate, please read, sign, and return the following page. Please keep this letter for your records. If you have any questions about this study, please contact Allison Battaglia (email: allison.battaglia@eagles.usm.edu) or Dr. Keith Radley (Phone: 601-266-5255; email: keith.radley@usm.edu). This project and this consent form have been reviewed by the Human Subjects Protection Review Committee at USM, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research subject should be directed to the Institutional Review Board Office, The University of Southern Mississippi, Box 5147, Hattiesburg, MS 39406-5147, (601) 266-6820.

Sincerely,

_______________________________
Allison Battaglia, M.A.
School Psychologist-in-Training
Department of Psychology
The University of Southern Mississippi

_______________________________
Keith Radley, Ph.D.
Supervising Psychologist
Department of Psychology
The University of Southern Mississippi
THIS SECTION TO BE COMPLETED BY TEACHER

Please Read and Sign the Following:

I have read the above documentation and consent to participate in this project. I have had the purpose and procedures of this study explained to me and have had the opportunity to ask questions. I am voluntarily signing this form to participate under the conditions stated. I have also received a copy of this consent. I understand that I will be asked to implement a classroom-based intervention called On-Task in a Box, and observations will be conducted in the classroom on the students’ behavior. In order to do so, I will be required to complete a training session, to implement the intervention, and to complete a structured questionnaire to assess my satisfaction with the intervention. I further understand that all data collected in this study will be confidential and that my name and the students’ names will not be associated with any data collected. I understand that I may withdraw my consent for participation at any time without penalty, prejudice, or loss of privilege.

_______________________
Printed Name of Teacher

_______________________ ______________
Signature of Witness Date
APPENDIX C – Parent Consent Form

**Title of Study:** Evaluating the effects of “On-Task in a Box” as a class-wide intervention for increasing rates of on-task behavior and academic performance.

**Purpose:** Your permission is requested for your child to participate in a study that investigates the effects of a class-wide intervention package called On-Task in a Box. The goal of the program is to increase class-wide academically engaged behavior and decrease disruptive behaviors in the classroom. Research has shown that increased time spent academically engaged leads to improved academic performance. This study will also examine the effects of the intervention package on individual students referred for high levels of disruptive behaviors.

**Who can participate:** Children in elementary school who exhibit disruptive behaviors may participate. Your child’s teacher has agreed to implement the On-Task in a Box intervention package with all children in the classroom. Additionally, your child has been nominated as a student who may qualify for participation as a target student.

**Procedures:** Before the study begins, the class and your child will be observed for the occurrence of academically engaged behavior and disruptive behavior. If the class qualifies for the study, the On-Task in a Box intervention package will be implemented in your child’s classroom. The intervention package has students watch animated videos to teach them how to observe, evaluate, and record their on-task behavior; then, students watch videos of peers modeling appropriate on-task behavior. While working on math worksheets, students will record whether they were on-task or off-task when signaled by the teacher. Students will be rewarded for reaching a certain level of on-task behavior. Graduate students from the University of Southern Mississippi will conduct observations during independent math seatwork and will calculate the number of math problems completed and the number of math problems completed correctly on the assigned worksheets. Observers will record academically engaged behaviors and disruptive behaviors of both your child and the other students.

**Benefits and risks:** Your child’s behavior may improve as a result of this intervention. All children in the classroom will be equally involved in the intervention, meaning that your child will not receive any additional intervention outside of the procedures described, or be singled out in any way. The only difference is that your child’s behavior will be observed separately from his/her classmates, which will not affect your child. In the event of unintended results (i.e., your child’s behavior may worsen), modifications of the intervention will take place or he/she will be provided with additional services.
Confidentiality of Records: All information gathered during this study will be kept confidential. Any identifying information about your child will be recorded in the password-protected computer belonging to the Principal Investigator. Only people directly connected to the study will have access to this or other information. The only circumstances that would obligate use to release information would be if your child reports abuse or plans to harm himself/herself or others. If data from the study are used for presentations or publications, all identifying information will be removed.

Voluntary Participation: Permission for your child’s participation in this study is voluntary. You may withdraw your child from this study at any time without penalty, prejudice, or loss of benefits. Since we are teaching an intervention to the classroom teacher, he or she may choose to continue using the intervention. However, at your request we would not include any data associated with your child in the present investigation. Whereas no assurance can be made concerning results that may be obtained (as results from investigational studies cannot be predicted), the researcher will take every precaution consistent with the best scientific practice.

Parent Consent: If you agree to allow your child to participate, please read, sign, and return the following page. Please keep this letter for your records. If you have any questions about this study, please contact Allison Battaglia or Dr. Keith Radley (Phone: 601-266-5255; email: allison.battaglia@eagles.usm.edu; keith.radley@usm.edu). This project and this consent form have been reviewed by the Human Subjects Protection Review Committee, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research subject should be directed to the Institutional Review Board Office, The University of Southern Mississippi, Box 5147, Hattiesburg, MS 39406-5147, (601) 266-6820.

Sincerely,

_______________________________
Allison Battaglia, M.A.
School Psychologist-in-Training
Department of Psychology
The University of Southern Mississippi

_______________________________
Keith. Radley, Ph.D.
Supervising Psychologist
Department of Psychology
The University of Southern Mississippi
THIS SECTION TO BE COMPLETED BY PARENT

Please Read and Sign the Following:

I have read the above documentation and consent for my child to participate in this project. I have had the purpose and procedures of this study explained to me and have had the opportunity to ask questions. I am voluntarily signing this form to have my child participate under the conditions stated. I have also received a copy of this consent. I further understand that all data collected in this study will be confidential and that my child’s name and the teacher’s name will not be associated with any data collected. I understand that I may withdraw my consent for my child’s participation at any time without penalty, prejudice, or loss of privilege.

________________________________________
Name of Child

________________________________________
Printed of Parent

________________________________________   ______________
Signature of Parent                                Date
APPENDIX D – Teacher Training Integrity Checklist

Teacher Name:___________________  Date:________________

Observer:___________________  IOA:________________

<table>
<thead>
<tr>
<th>Procedure Steps:</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Share student and classroom data with the teacher.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Identify the goal for the class based on the data.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Schedule a day and time for the classroom orientation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Provide and review the classroom orientation script.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Show the teacher the program components.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Discuss the teacher’s role during self-monitoring sessions.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Develop a list of rewards the class can earn.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

# Steps completed correctly: ______________

# Steps possible: ______________

Percent Integrity: ______________
APPENDIX E – Student Orientation Integrity Checklist

Teacher Name: __________________ Date: __________________
Observer: ____________________ IOA:__________________

<table>
<thead>
<tr>
<th>Procedure Steps</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Explain to class that they are going to start a new program</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Show students what rewards they could earn and have them vote for their favorites</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Play Fasthands video for defining on-task and off-task behaviors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Play Fasthands video for teaching how to self-record on-task and off-task behaviors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Play Fasthands video for teaching how to use the self-plotting graph</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Pass out self-recording forms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Have students watch Peer Modeling video for 5 minutes while they record the behaviors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Say “Record” when the MotivAider vibrates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Check the forms of a few students to determine if they are recording correctly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Demonstrate how the scores would be used on the Self-Plotting Graph</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Reward students for participating in the training session</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

# Steps completed correctly: ______________

# Steps possible: ______________

Percent Integrity: ______________
Teacher Name: __________________    Date: ______________
Observer: ______________________   IOA:________________

### Procedure Steps:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Teacher announces/reminds students of the program and their goal.</td>
</tr>
<tr>
<td>2.</td>
<td>Math worksheets are distributed to students during independent seatwork.</td>
</tr>
<tr>
<td>3.</td>
<td>Self-recording forms are distributed to students during independent seatwork.</td>
</tr>
<tr>
<td>4.</td>
<td>Teacher says “Record” out loud when the MotivAider or timer signals.</td>
</tr>
<tr>
<td>5.</td>
<td>Math worksheets are collected after 20 minutes work independent seatwork.</td>
</tr>
<tr>
<td>6.</td>
<td>All self-recording forms are collected from students and placed in a container.</td>
</tr>
<tr>
<td>7.</td>
<td>Teacher randomly selects 5 self-recording forms and averages the number of on-task marks on the form.</td>
</tr>
<tr>
<td>8.</td>
<td>The self-plotting graph is completed for that day.</td>
</tr>
<tr>
<td>9.</td>
<td>Reinforcement is provided if the class reaches their goal.</td>
</tr>
</tbody>
</table>

# Steps completed correctly: ______________

# Steps possible: ______________

Percent Integrity: ______________
### APPENDIX G – Behavior Intervention Rating Scale

1=Strongly Disagree 2=Disagree 3=Slightly Disagree 4=Slightly Agree 5=Agree 6=Strongly Agree

<p>| | | | | | | |</p>
<table>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>This was an acceptable intervention for the class’ problem behavior.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2.</td>
<td>Most teachers would find this intervention appropriate for behavior problems in addition to the one described.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3.</td>
<td>The intervention proved effective in changing the class’ problem behavior.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4.</td>
<td>I would suggest the use of this intervention to other teachers.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5.</td>
<td>The class’ behavior problem was severe enough to warrant use of this intervention.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6.</td>
<td>Most teachers would find this intervention suitable for the behavior problem described.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7.</td>
<td>I would be willing to use this in the classroom setting.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8.</td>
<td>The intervention did <em>not</em> result in negative side-effects for the children.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9.</td>
<td>The intervention was an appropriate intervention for a variety of children.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10.</td>
<td>The intervention was consistent with those I have used in classroom settings.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11.</td>
<td>The intervention was a fair way to handle the class’ problem behavior.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12.</td>
<td>The intervention was reasonable for the behavior problem described.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13.</td>
<td>I like the procedures used in the intervention.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
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<td></td>
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</tr>
<tr>
<td>14.</td>
<td>The intervention was a good way to handle this class’ behavior problem.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15.</td>
<td>Overall, the intervention was beneficial for the classroom.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16.</td>
<td>The intervention quickly improved the class’ behavior.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>17.</td>
<td>The intervention produces a lasting improvement in the class’ behavior.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>18.</td>
<td>The intervention improved a class’ behavior to the point that it did not noticeably deviate from other classes’ behavior.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>19.</td>
<td>Soon after using the intervention, the teacher noticed a positive change in the problem behavior.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>20.</td>
<td>The classroom’s behavior will remain at an improved level even after the intervention is discontinued.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>21.</td>
<td>Using the intervention not only improved the class’ behavior in this classroom, but also in other settings (e.g., other classrooms, home).</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>22.</td>
<td>When comparing this classroom with a well behaved classroom before and after the use of the intervention, the classes’ behavior was more alike after using the intervention.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>23.</td>
<td>The intervention produced enough improvement in the class’ behavior so the behavior no longer is a problem in the classroom.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>24.</td>
<td>Other behaviors related to the problem behavior also are likely to be improved by the intervention.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

*Modified from the Behavioral Intervention Rating Scale (BIRS; Elliot and Von Brock Treuting, 1991)
APPENDIX H – Children’s Intervention Rating Profile (CIRP)/Modified Version

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Slightly Disagree</th>
<th>Slightly Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
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<tbody>
<tr>
<td>On-Task in a Box was fair.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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<tr>
<td>I liked On-Task in a Box.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>I think other students would like On-Task in a Box.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>On-Task in a Box helped me do better in school.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>On-Task in a Box did not cause problems for me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>On-Task in a Box did not cause problems for my friends.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>I liked the rewards we earned from On-Task in a Box.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

APPENDIX I – Teacher Script for Student Orientation

1. Explain to the class that they are going to start a new program.
   o Teacher says:

   We’re going to be starting a new program. The program is called On-Task in a Box, and it will help the whole class learn to stay on-task. Staying on-task and working hard will help you get good grades.

2. Tell students what rewards they could earn.
   o Teacher tells students which rewards they can earn. Teacher says:

   You will receive one of these rewards for paying attention to the videos show and participating in the activity. We’re going to watch some short videos today. First, you’ll watch a cartoonist doing some really fast drawing. It’s a fun way to learn about on-task behavior. When it’s done, I’ll ask the question: “What is on-task behavior?” Listen and watch the video.

3. Play Fast-hands video for defining on-task and off-task behaviors.
   o Stop video when the definitions are completely described. Teacher says:

   There are two things that show you are on-task. What are they?

   o Call on a student. If they answer correctly praise them for the right answer. If they are not correct, call on another student to help out. Correct answer: Looking at the teacher and doing your work.

   We’re going to watch another fast-hands video. This time you’ll watch the artist draw how to use the MotivAider. You’ll also learn how and when to record whether you are on-task or not.

4. Play Fast-hands video for teaching how to self-record on-task and off-task behaviors.
   o Stop the video when the explanation of self-recording is completed. Teacher says:

   Raise you hand if you know when to put an X in the box on the self-recording form.

   o Call on a student. If they answer correctly praise them for the right answer. If they are not correct, call on another student to help out. Correct answer: When I am looking at the teacher or my work and doing what my teacher wants. Teacher says:

   Raise your hand if you know when to put a – in the box on the self-recording form.

   o Call on a student. If they answer correctly praise them for the right answer. If they are not correct, call on another student to help out. Correct answer: When I am not looking at the teacher or my work and not doing what the teacher wants. Also
remind them that off-task includes being out of their seat, playing with things that are not relevant to the materials, and talking without permission.

5. **Have students watch a peer video and practice using the MotivAider and Self-Recording Form.**

   You are doing great. Now you get to practice using the Self-Recording Form and the MotivAider. We’re going to watch a student on a video. Watch the student in the middle. I’ve got the MotivAider set. I’ll say, “Please record” when the MotivAider goes off, and you get to decide if the student is on or off-task. If the student is on-task, what will you write? (an X) If the student is off-task, what will you write? (a minus)

   - Play the peer video and start the MotivAider. Say “Please record” when it vibrates.

6. **Play Fasthands video for teaching how to use the self-plotting graph.**

   - Stop the video when the explanation of self-graphing is complete. Teacher says:

     *If our class line is flat, what does that mean?* Correct answer: We are staying the same. We aren’t getting any better. We aren’t getting any worse.

     *If the line is going down, what would that mean?* Correct answer: We are having a hard time. We need to try harder.

     *If the line on the graph is going up, what does that mean?* Correct answer: Our on-task time if getting better.

7. **Debrief the class and prepare them for self-monitoring session.**

   - Praise the students for their appropriate behavior during the session.
   - Tell students they will be recording their own on-task behavior next time.

8. **Reward students for their participation.**

   - Have a student spin the reward spinner and give students the reward that corresponds to the number spun.
REFERENCES


*Remedial And Special Education, 28, 33-42.*


modeling combined with self-monitoring to increase rates of on-task behavior.

*Behavioral Interventions*, 29, 125-144.


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