

6-28-2018

The effects of self-monitoring of behavior on academic achievement

Meredith Keller

Rowan University, mkeller09@yahoo.com

Let us know how access to this document benefits you - share your thoughts on our feedback form.

Follow this and additional works at: <https://rdw.rowan.edu/etd>

 Part of the [Special Education and Teaching Commons](#)

Recommended Citation

Keller, Meredith, "The effects of self-monitoring of behavior on academic achievement" (2018). *Theses and Dissertations*. 2582.
<https://rdw.rowan.edu/etd/2582>

This Thesis is brought to you for free and open access by Rowan Digital Works. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of Rowan Digital Works. For more information, please contact LibraryTheses@rowan.edu.

**THE EFFECTS OF SELF-MONITORING OF BEHAVIOR ON ACADEMIC
ACHIEVEMENT**

by

Meredith Keller

A Thesis

Submitted to the
Department of Interdisciplinary and Inclusive Education
College of Education

In partial fulfillment of the requirement

For the degree of

Master of Arts in Special Education

at

Rowan University

May 10, 2018

Thesis Chair: Dr. S. Jay Kuder

© 2018 Meredith Keller

Dedications

I would like to dedicate this thesis to my family, each of who have had a part in inspiring me to pursue my career in education. To my mother, Katherine Keller, who is a teacher of 36 years and counting, thank you for the courage to begin my journey as a Special Education Teacher. To my father, Gregory Keller, thank you for teaching me that nothing beats hard work and dedication. To my sister, Kim, and my brother, Brian, who always provide support and encouragement.

Acknowledgement

I would like to extend my appreciation to my professor, Dr. S. Jay Kuder for all of his guidance and knowledge throughout my research study. His willingness to help and careful review of all assignments were vital parts of my success throughout this process. I look forward to using all of my new knowledge in the classroom.

Abstract

Meredith Keller
THE EFFECTS OF SELF-MONITORING OF BEHAVIOR ON ACADEMIC
ACHIEVEMENT
2017-2018
Dr. S. Jay Kuder
Master of Arts of Special Education

This study examines whether or not implementing a self-monitoring behavior plan will improve student achievement. Four students from a third grade inclusion classroom were taught to self-monitor for a period of 10 weeks. Each student was also tested weekly on reading comprehension using a standards-based ten-question assessment. During the 10-week period, the classroom teacher noted the number of prompts given to each of the students. A prompt was documented when the student was demonstrating inappropriate behavior. After the intervention was implemented, each of the four students demonstrated an overall decrease in the number of prompts required. Additionally, all four students demonstrated an increase in their reading comprehension scores.

Table of Contents

Abstract.....	v
List of Figures.....	viii
List of Tables.....	xi
Chapter One: Introduction.....	1
Key Terms.....	3
Chapter Two: Review of Literature.....	4
Self-Monitoring of Behavior.....	6
Chapter Three: Methodology.....	13
Setting and Participants.....	13
Participant 1.....	13
Participant 2.....	14
Participant 3.....	14
Participant 4.....	15
Procedure.....	15
Variables.....	17
Experimental Design.....	17
Chapter Four: Results.....	19
Summary.....	19
Individual Results.....	20
Comprehension Assessment Data.....	23
Self-Monitoring Scores.....	25
Chapter Five: Discussion.....	27

Table of Contents (Continued)

Summary of Results	27
Relation to Previous Research	28
Limitations	29
Future Studies	29
Practical Implications	30
Conclusion	31
References.....	32

List of Figures

Figure	Page
Figure 1. Self-monitoring chart	16
Figure 2. Baseline, intervention, reversal, and final week prompts for student 1	20
Figure 3. Baseline, intervention, reversal, and final week prompts for student 2	21
Figure 4. Baseline, intervention, reversal, and final week prompts for student 3	22
Figure 5. Baseline, intervention, reversal, and final week prompts for student 4	23
Figure 6. Baseline and week 10 comprehension scores.....	25

List of Tables

Table	Page
Table 1. Comprehension Quiz Results	24
Table 2. Individual Intervention Self-Monitoring Scores.....	26

Chapter One

Introduction

Behavioral monitoring systems for elementary students are an essential piece of every functioning classroom. Students must demonstrate appropriate behavior in school in order to achieve the best academic and social experience. Without correct behavior, students are unable to focus, and therefore less likely to understand key concepts taught in class.

Within the classroom, there are various types of interventions that can be used for the whole class or specific students. All elementary level classrooms have a certain type of whole-class behavioral system that all classmates are aware of and are asked to adhere to. However, certain students do not respond to the class-wide system and need more specific strategies. The use of student-specific behavioral interventions, such as self-monitoring or replacement behavior instruction are necessary if a student does not respond to the class-wide behavior system. Creating a personalized plan, and correctly teaching the student the selected strategy can not only decrease unwanted behaviors, but may also increase student achievement. In this study it was my hope to determine whether or not implementing a self-monitoring behavior plan will improve student achievement. Using self-monitoring behavior as the target strategy will produce several benefits. Having the student track his own behavior gives the teacher or the assistant additional time for teaching or helping students through an assignment. Students also begin to develop a sense of control over their own behavior, as well as self-confidence as the students begin to have more successful behavior days.

Previous research includes numerous strategies for implementing self-monitoring behavior strategies. Using a multi-step process where the student learns to track his or her target behavior, the elementary student can soon become more and more responsible for his or her behavior. The majority of recent research that I have come across includes studies completed with only special education students, as well as older students, either in middle or high school.

The research questions examined in this study are: Does self-monitoring of behavior reduce the selected target behavior problems? Does appropriate behavior increase the academic achievement of third grade students with behavioral difficulties, including those with disabilities? Academic achievement will be defined by at least a letter grade increase from baseline academic test scores in reading, writing, and math. It is hypothesized that, if a student is able to self-monitor his/her behavior effectively for 75% of the school day, the student's educational performance will improve.

This study was completed in a single third grade inclusion classroom. Within this classroom, a class-wide behavior monitoring system was already in place. The population of the inclusive classroom is as follows: 11 males, 9 females, four classified students, and one speech-only IEP. Of the 11 male students, there are two African American, one Asian American, two Indian American, and six Caucasian. Of the 9 female students, there are two Asian American, two Indian American, and five Caucasian.

The four subjects who receive a behavioral intervention in this study are all male students, three of whom are classified as eligible for special educational services. Three students are classified as having a Specific Learning Disability (SLD). None of the

students have a current behavior plan set in his Individual Education Plan (IEP), however previously one student had a specific plan which was later faded and stopped.

The independent variable is the self-monitoring behavior plan implemented for the three target students. After each subject area, for a total of six times per day, students will check in using a self-guided checklist. The student's three goals are:

-I was prepared for (subject area).

-I was focused during the lesson.

-I completed my assignment.

Key Terms

Behavioral Intervention: a second-tier behavior plan to increase time on task.

Self-Monitoring: Reflecting multiple times per day (each subject area) and evaluating behavior.

Academic Achievement: completing work on time and in the correct way.

This study will examine the effectiveness of implementing self-monitoring of behavior, and how this impacts each student's academic achievement. It is anticipated that once the self-monitoring plan is implemented, all students will have an increase in their academic achievement levels.

Chapter Two

Review of Literature

Appropriate behavior is vital in all aspects of life and is a skill that is continually developed over time and should be adjusted according to a particular setting. In school, students are expected to demonstrate appropriate behavior in order to be the best learner possible. If behavior is inappropriate then the learning of that particular child can be disrupted as well as the learning of his or her peers.

Social interaction in the school setting begins when a child enters his or her first classroom. From there, appropriate behaviors are learned, and in a sense molded, by peers and authority figures, such as teachers and parents. Students with disabilities can experience a variety of behavioral problems. Just as any student, there may be attention issues that contribute to behavior, lack of impulse control or a processing issue that makes it difficult for the students to understand and follow through with a given set of directions.

Within the classroom, there are several methods that teachers use to improve student behavior. In elementary school, which is the focus for this study, individual behavior charts are used to keep individual students accountable for his or her daily behavior. Depending on the teacher's preference, students will earn a sticker or other mark on their individual behavior chart usually 1-2 times per day. Each student follows a set of classroom rules, as determined by the teacher at the beginning of the school year. The expectations are clear, and students strive to "earn" on their behavior charts. Depending on the classroom, there is a certain type of reward once the chart is completed. For example, a "prize" from the classroom "prize box" or homework passes.

The purpose of the behavior chart is to keep the student motivated from day to day, and also for a significant portion of time, in order to “earn” a prize.

Additionally, many classrooms have a class-wide that is monitored by the teacher. Classes work together to make good choices, in order to earn a class-wide reward. Good choices that can lead to an eventual reward include: transitioning between subjects quickly and quietly, being respectful and responsible, or having all students complete their homework on time. As stated with the individual behavior charts, the teacher determines the frequency and amount of “rewards” earned by the class. Having a class-wide behavior system encourages classes to work as a team, and learn to encourage and help classmates when needed.

There are several positives of having both an individual behavior monitoring plan as well as a class-wide behavior monitoring system. First, the systems are proven to be beneficial in promoting appropriate student behavior. Additionally, the systems are created for younger students, who are in need of guidance and correction when it comes to behavior choices. Further, many teachers opt to have a way to communicate behavior with parents, that way there is also parent involvement within the system.

A teacher-monitored behavior system, whether individual or class-wide, can also have some negative components. The teacher is responsible for monitoring each student’s daily behavior, which can be difficult. Depending on the class size, this can be overwhelming or even not feasible for daily tracking. Also, the student does not feel completely responsible for his or her behavior, and may become dependent on teacher direction. A great deal of research has been completed on why self-monitoring behavior systems are effective.

As opposed to a teacher-led behavior monitoring system, there are student-led behavior monitoring systems. These systems make the student responsible for tracking his or her behavior, and teach them to recognize when they are acting appropriately, or vice versa.

Self-Monitoring of Behavior

Self-monitoring is a strategy used to control individual student behavior. Self-monitoring requires the individual to monitor and regulate his or her behavior without the assistance of an adult. In order to be successful, the student must track his or her daily behavior. This can be completed through various methods, but most commonly through some type of checklist or data chart. The same list or chart is utilized every day. This way, the student learns when to check in and determine how his or her behavior is, as well as develop a routine. The number of times the student checks in is determined by the teacher, and can be adjusted as needed.

The hope of self-monitoring is that the student begins to realize when he or she is not behaving appropriately, and is then able to self-correct. There are many benefits of self-monitoring, including creating accountability for the student, and also relieving the teacher of some time that was previously used to monitor behavior. With a self-monitoring system, less instructional time is lost due to behavior management.

In a single subject study, Vogelgesang, Bruhn, Coghill-Behrends, Kern, and Troughton (2016) implemented the use of a self-monitoring system for three fifth grade students. Each of these students are diagnosed with attention deficit hyperactivity disorder (ADHD) and also exhibited low academic engagement rates. The researchers used 3-4 days of baseline data for each students, and then used this data to evaluate the

effectiveness of the behavior intervention. The students were each taught how to self-monitor their behavior using an iPad application called SCOREIT. Using a 1-4 scale, the students had to rate themselves through the iPad application, commenting on three behavior goals. The three student's average improvement percentage was between 84-86% academic engagement throughout the day. This was an increase from the baseline percentages of 21-46% engagement (Vogelgesang, et al., 2016).

In another single-subject study conducted by Wadsworth, Hansen, and Wills (2014), the researchers implemented a self-monitoring behavior system after completing a functional behavioral assessment (FBA). The assessment was conducted on 3 students, ranging from grade two to three. The purpose of the study was to determine the effects of a self-monitoring behavior system and a function based interventions on compliance in the classroom. The first subject was a 9-year-old male student with Down Syndrome and moderate intellectual disabilities. His reported behaviors included frequent noncompliance. The second subject was a 7-year-old female with multiple disabilities, including speech and language delays. She was reported to have a high rate of disruptive behavior during school, as well as noncompliance during instructional activities. The third subject was a 9-year-old male with intellectual disabilities. His behavior was described as noncompliant during academic instruction.

The researchers first used a functional behavior assessment to determine the focus behavior goals. Next, researchers also interviewed teachers in order to develop a better understanding of each student. Once baseline data was collected, the researchers implemented the intervention. Through teacher modeling, the students each learned how to self-monitor their behavior on a daily basis. Each student experienced decreased rates

of noncompliance. As a result of the self-monitoring, compliance increased to 87%, 88%, and 85% respectively, for each student during the school day.

In a single-subject study completed by Tiffany Otero and Jillian Hunt (2016), three students received an intervention to increase on-task behavior. The researchers hoped to determine the most effective way to incorporate a self-monitoring behavior strategy within the general education classroom. Specifically, the Otero and Hunt wanted to see if the students needed a tangible reinforcement in order to maintain on-task behavior.

There were three students involved in the study, in grades three, four, and five, each of whom were identified by his or her teacher as being “at risk” for academic failure for the school year. Baseline data of each of the student’s was recorded, using a 20-minute session, and recording data each minute. In order to qualify for the study, the student’s behavior must be off-task for at least 50% of the 20-minute session. The targeted behaviors included: following directions, appropriate listening behavior (body language, mouth closed, etc), completing a given task, all of which would in turn assist in improving academic achievement.

Using a tool called a MotivAider, student data was recorded during 20 minute tracking sessions. After two training sessions, the students were then able to self-monitor their behavior using the MotivAider. A MotivAider is a small, vibrating device that reminds students to monitor their behavior. In this study, students were cued every minute, for 20 minutes. There were two intervention conditions in this study: one with self-monitoring as an intervention strategy, and another with self-monitoring immediately followed by a reward. Students recorded results using an organized created by the

researchers. Each minute, students marked down either an “SM” (self-monitoring) or a “R+” (self-monitoring with reinforcement condition). Students also received a picture of his or herself following correction engagement body language, in order to serve a reminder for correct behavior. Data was taken over an eight-week period.

The results of this study were recorded in percentage of time on task per student. Each student was given both intervention conditions, with or without an immediate reward. Student one demonstrated an increase in time on task, with his baseline score of 37% and post-intervention scores of 91% with self-monitoring, and 95% with reinforcement. Student two’s baseline score was 36.76%, and increased to 56.7% time on task with solely self-monitoring, and 78.8% when using self-monitoring plus an immediate reinforcement. The third student had a baseline observation score of 47% of time on task. The score increased when self-monitoring to 73.3% time on task, and 80.8% time on task with self-monitoring plus a reinforcement. Overall, each student’s time on task increased during the study, and the effect of the additional reinforcement was minimal.

Additionally, all three students were asked to participate in a survey regarding the effectiveness of the intervention. Feedback included that the MotivAider was distracting during class, and that the intervention did not “force” the students to pay attention during class.

In addition to the previous articles, I also reviewed a systematic literature review. This review included either single-subject or group methodology, a total of 41 studies were examined. Additionally, the independent variable within all of the studies was a self-monitoring intervention. Across the studies, there were 193 male participants and 3

female participants. All participants were recommended for an intervention of self-monitoring due to disruptive or distracted behavior to some degree.

Within the studies, there were various ways that the self-monitoring was documented. Most studies preferred a “paper-pencil” method, and only two incorporated a technology-based tracking device. Conclusion also determined by the review included how to achieve a higher level of success from self-monitoring. The studies were organized by specific components of self-monitoring, and then the individual data was analyzed to determine the outcome of each component. First, numerous studies included a reinforcement component. Studies that included reinforcement when a particular goal was met, and studies without reinforcement had similar success. There were also studies where a reinforcement was given regardless of whether or not a goal was met, and there were no major differences noted. All of the self-monitoring studies reported improvement or a successful intervention.

Further, the researchers suggest “students try self-monitoring in other settings, and recommend to other teachers of the same student to implement similar self-monitoring procedures in their classrooms.” (Bruhn, et al, 117). So, although certain studies were not completed across all settings, it can be concluded that self-monitoring is a useful and worthwhile intervention strategy to use.

One of the technology-based interventions from the above literature review is called WatchMinder. Further research of the effectiveness of this device was completed using a multiple baseline across subjects design. In this study conducted by Finn et al, there were a total of four subjects, in grades three and four, and all of whom received special education services. The researchers wanted to measure the effectiveness of the

WatchMinder, the effectiveness of self-graphing and immediately analyzing data with students, and also if self-monitoring would be effective once the WatchMinder prompt is removed. Two of the subjects involved were performing on grade-level, and two were performing below grade level. Each student experienced difficulty maintaining attention, following directions, and certain students demonstrated disruptive behaviors including screaming and laying on the floor during instruction. All subjects have been diagnosed with Autism Spectrum Disorder (ASD), and they all participate in a 30-minute independent work period during the day. The intervention was completed at this 30-minute period.

WatchMinder is a vibrating device that is worn on the wrist like a watch. Each participant was provided with the WatchMinder, and taught the procedures for self-monitoring. Students were taught to either document on-task or off-task by using a checklist. WatchMinder prompted each student every two-minutes during a total period of 30 minutes. The goal was to have the student on task for 13 out of the 15 marked intervals.

Each of the four participants saw an increase in on-task behavior, with an average time on task of 83%-93.2%. WatchMinder was determined to be an effective device to use for self-monitoring, as determined by the student's results. Additionally, there was a slight increase of on-task time when the self-graphing component was added, versus simply self-monitoring without the review of data. Finally, the students were able to maintain their self-monitoring without the WatchMinder, but the percentage of on-task time was only slightly above their baseline scores. An important note from the study was

how specific the WatchMinder charging procedures were. If the device was not properly charged, there would be about a day's delay until it could be utilized again.

An additional multiple baseline design study completed on the effects of self-monitoring when utilized with young children with disabilities. The two subjects in a study completed by et al. were three and four years old. The targeted student behaviors were appropriate sitting (seated in a designated area) and appropriate time of vocalization (level of voice). A combination of token economy, a checklist and the MotivAider as a prompt for a check-in were all used in this study. Since the students are so young, student assistants were also trained in self-monitoring procedures. 10-15 minute observations were completed 2-3 days per week, during various settings (small and large-group).

Each student experienced an increase of the targeted behavior when the self-monitoring was implemented. Each student experienced up to 89% success of the target behaviors. Additionally, students also experienced more success in the token economy within their classroom due to the self-monitoring and frequent check-ins.

There is much research that proves the success of self-monitoring of students with disabilities. However, the study I am completing is different from the above reviewed literature because I am examining the effects on academic achievement. I want to determine if the student's behavior is on task, then the student's academic achievement level will also increase.

Chapter Three

Methodology

Setting and Participants

This study included four elementary school students, all in the third grade. The students attend an elementary school in a suburban area in southern New Jersey. The district is one of the largest in the area, with one early childhood school, 12 elementary schools, three middle schools, two high schools, and one alternative high school. In total, the district has about 11,100 students. As stated in the New Jersey School Performance Report, the elementary school has a population consisting of 60% White, 20% Asian, 8.1% Black, 6.9% Hispanic, 4.2% Multi-Racial, 0.4% American Indian, and 0.4% Pacific Islander (NJ School Performance Report, 2016). Within the student population, 27% of students are classified as having a disability, and 15% are considered economically disadvantaged.

Three out of the four students in the study are classified as eligible for special education. These students were selected for this study due to their unexpected and noncompliant behavior. The students did not respond to classroom behavior interventions and are falling behind academically due to behavioral issues.

Participant 1. Student 1 is a third grade Caucasian male, who is currently in an inclusion classroom, and is part of the general education population. He is an intelligent boy, however is very easily distracted, and often defiant. During classroom instruction, it is reported that he often refuses to complete assignments, and instead distracts himself and others with some sort of manipulative (pencil, eraser, etc). The teacher reports it is extremely difficult to transition between subjects, as the student is always distracting

others and does not have the correct materials ready when needed. The teacher reports that it is difficult to grade anything for this student because there is barely any work product completed from the student this school year.

Participant 2. Student 2 is a third grade African American male, who is currently classified as Communication Impaired. He is currently in an inclusion classroom, and receives support from a special education teacher in Writing, Reading, Math, Science, and Social Studies. He often calls out and does not follow directions the first time. He needs several reminders to begin and complete a given task, and when he is reminded is often defiant or “talks back” to the teacher. As a result of his behavior, he is having difficulty understanding the third grade concepts, even though he has already been in the third grade. He transferred from a school in Brooklyn, where he was also in third grade, and was recommended to repeat the grade level. He previously was on an individualized behavior plan, and received counseling one time per week in his old district.

Participant 3. Student 3 is a third grade African American male, who is currently classified with a Specific Learning Disability. He is currently in an inclusion classroom and receives support from a special education teacher in Writing, Reading, Math, Science, and Social Studies. He is currently about a year below grade level in reading, writing, and math, and has difficulty focusing on tasks in school. Student 3 is easily distracted by other students in the classroom, and is always concerned with what others are doing. He also distracts himself by using a manipulative (small toy or novelty) he has brought from home. His attention is becoming an issue, as he is falling further and further behind in his current grade level. Additionally, he was recently diagnosed with sleep apnea, and at times falls asleep during class.

Participant 4. Student 4 is a third grade Caucasian male who is currently classified as Other Health Impaired. He is currently in an inclusion classroom and receives support from a special education teacher in Writing, Reading, Math, Science, and Social Studies. He has difficulty focusing during the school day, and becomes easily frustrated if he misses directions or falls behind during a lesson.

Procedure

The intervention was implemented over a ten week period, from March 2018-May 2018. The special education teacher in the inclusion classroom taught each of the four students how to use a self-monitoring checklist. The teacher used the first two weeks to take baseline data using the checklist, where only the teacher is determining the daily score. During that two-week period, the students each met and discussed their daily behavior chart with the teacher, thus learning how to implement independently. These conversations took place during the student's Intervention and Enrichment period during the school day (2:00-2:40PM), where no new instruction is delivered in the classroom.

The intervention was delivered with the use of a self-monitoring behavior checklist that is divided into daily subject areas. Figure 1 displays the chart was used to monitor daily behavior. During the two weeks of training, the teacher met with each student individually to discuss results and validity to ensure an accurate score.

Subject	I was prepared.	I was focused during the lesson.	I completed my assignment.
Writing			
Reading			
Math			
Science/Social Studies			
Special			

Figure 1. Self-monitoring chart

Once the students were able to effectively monitor on their own, data was collected for four weeks by each student individually. A daily, quick meeting with the teacher to review the chart for the day occurred between 3:20-3:35. Once the four-week intervention period was completed, a two-week intervention-free period (reversal phase) was completed. The following two weeks, the intervention was re-introduced.

In addition to measuring the effectiveness of self-monitoring behavior, the study was also completed to determine if academic achievement levels would also increase as a result of better behavior. To monitor academic achievement, a reading comprehension quiz, developed by the magazine entitled *Time For Kids*, was administered each week during the ten-week study, as well as a baseline score prior to the intervention. Each

magazine, the students read a cover story article, and then completed a 10 question comprehension quiz. This measure was chosen due to below standard grades for reading comprehension across all subjects. The quizzes are a mixture of text-direct questions, inferential questions, specific and general questions regarding the particular article. This measure was chosen due to the variety of question types, as well as the reading content, which is on grade level expectations.

Using the baseline data, intervention data, and reversal data, the effectiveness of self-monitoring was measured. Additionally, testing data to determine how the intervention affected academic achievement was also taken.

Variables

The independent variable of this study was the self-monitoring behavior checklist. The dependent variables in this study were the student's grades as well as their results on the comprehension quizzes and the results of the self-ratings and teacher ratings on the daily behavior monitoring checklists. Both the teacher and the student took data collected during the initial two weeks of training. Results were compared, one-on-one with each student, and a discussion about scoring accuracy took place.

Experimental Design

This research study is a single subject, baseline, intervention, and reversal study. Prior to the start of the ten-week study, two weeks of baseline behavior and reading comprehension data was taken. Over the ten-week period, the first two weeks were used as training sessions to teach the students how to self-monitor. The following four weeks involved the intervention of self-monitoring. The seventh and eighth weeks was used as a reversal period, where the intervention was stopped. And finally, in the ninth and tenth

weeks the intervention returned. During each week, the students have a reading comprehension quiz that was completed. Scores from each period, baseline, intervention, and reversal, were all compared.

Chapter Four

Results

Summary

In this study, the effects of self-monitoring of behavior on reading comprehension within an elementary classroom were analyzed. Baseline data from each of the four participating students was compared before and after implementation of the intervention.

The research questions to be answered were:

1. Does self-monitoring of behavior reduce the selected target behavior problems?
2. Does appropriate behavior increase the academic achievement of third grade students with behavioral difficulties, including those with disabilities?

Throughout the study, each individual student's daily behavior was tracked. The number of redirections given by the teacher for inappropriate behavior was recorded, organized by each hour of the school day. The study began with data collection for two weeks prior to any intervention (baseline phase). During the four-week intervention phase students used a self-monitoring checklist to monitor their behavior. This was followed by a two-week reversal phase during which the self-monitoring checklist was not used. Finally, a one-week second intervention phase was completed during which students once again used the self-monitoring checklist.

In order to obtain a baseline score for reading comprehension, three *Time for Kids* cover story quizzes were given over a two-week period. The average of the three scores for each student was used as a baseline score.

Individual Results

Figures 1-4 present each individual student's number of prompts for appropriate behavior as compared to the average number of prompts given during the intervention period. The baseline average number of prompts was derived from a two-week period of time. The intervention average number of prompts was derived from a four-week period of time. The student's lunch and recess hour was not included as an intervention period, and therefore the students did not self-monitor during this time.

Student 1 had a baseline of average of 26.8 prompts per day. During the intervention period, Student 1 received an average of 13 prompts per day. During the reversal phase the number of prompts received by student 1 increased to an average of 16.1, still well below the initial baseline. In the final, second intervention, the average number of prompts received by Student 1 decreased to 14.

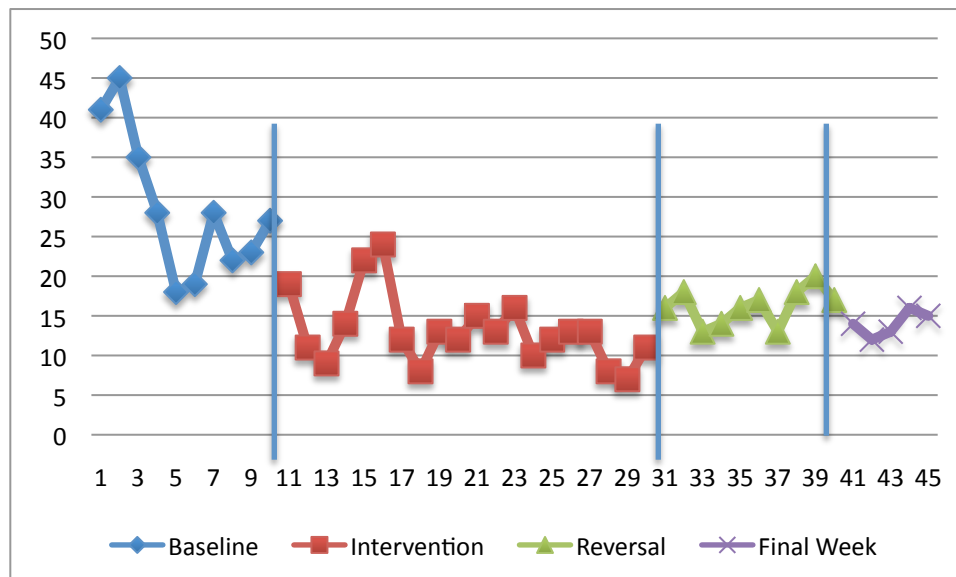


Figure 2. Baseline, intervention, reversal, and final week prompts for student 1

Student 2 had a baseline of average of 37.3 prompts per day. During the intervention period, Student 2 received an average of 18 prompts per day. During the reversal phase the number of prompts received by Student 2 increased to an average of 28.1, below the initial baseline but greater than during the intervention phase. In the final, second intervention, the average number of prompts received by Student 2 decreased to 26.

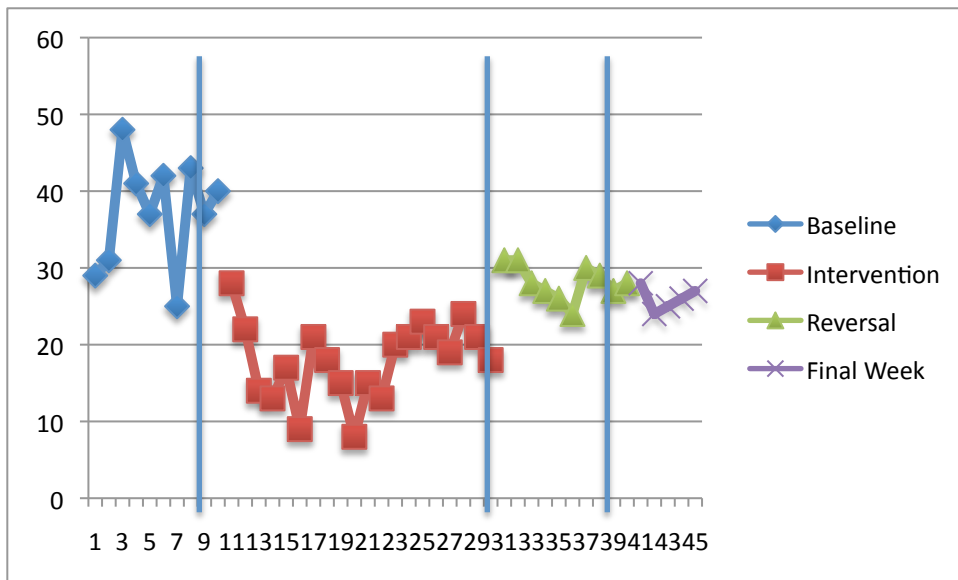


Figure 3. Baseline, intervention, reversal, and final week prompts for student 2

Student 3 had a baseline of average of 16.8 prompts per day. During the intervention period, Student 3 received an average of 6.5 prompts per day. During the reversal phase the number of prompts received by Student 3 increased to an average of 7.7, well below the initial baseline but slightly greater than during the intervention phase.

In the final, second intervention, the average number of prompts received by Student 3 increased to 9.

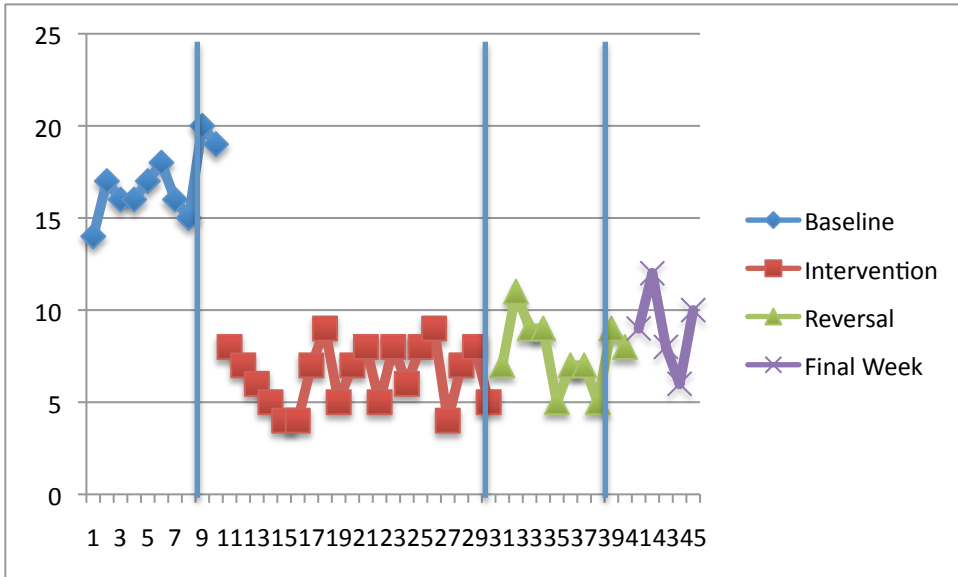


Figure 4. Baseline, intervention, reversal, and final week prompts for student 3

Student 4 had a baseline of average of 20.5 prompts per day. During the intervention period, Student 4 received an average of 17.5 prompts per day. During the reversal phase, the number of prompts received by Student 4 increased to an average of 19.3. In the final, second intervention, the average number of prompts received by Student 4 decreased to 16.2.

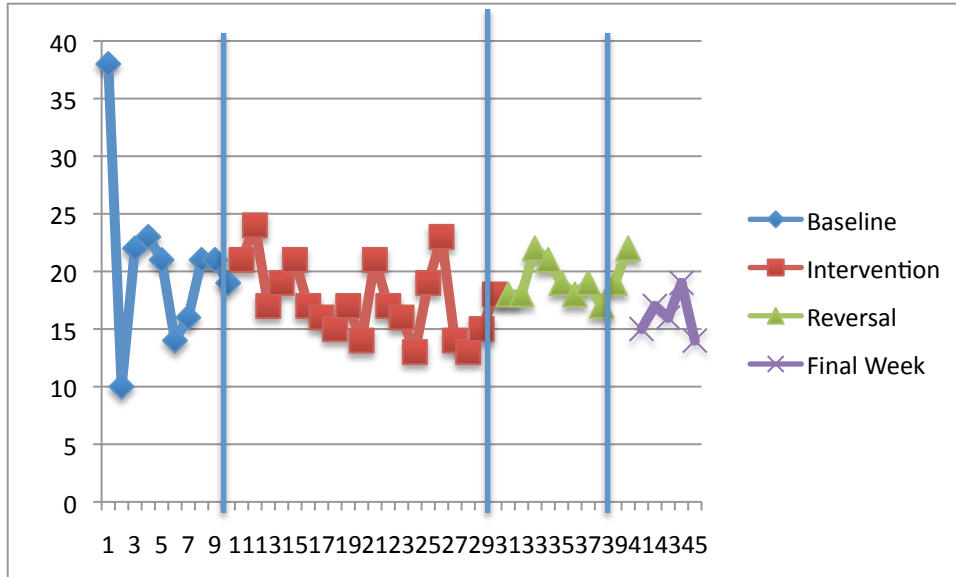


Figure 5. Baseline, intervention, reversal, and final week prompts for student 4

Comprehension Assessment Data

In addition to recording the number of behavior prompts received by each student, reading comprehension was also evaluated. Reading comprehension assessment was based on an article that each student read in a *Time for Kids* magazine. A quiz included text based and inferential questions regarding the given current events article. The students read each article two times prior to completing the assessment, once with a partner and once independently. Table 1 displays a comparison of each student’s baseline score, post-intervention score, and the difference between the two. The baseline data shows that all four students are well below the grade level standard for comprehension, which would be between 80-100%.

After the initial baseline scores, each student completed a weekly comprehension quiz, for a total of eight additional weeks during the study. This data is displayed in Table

1. In Figure 6, each of the four student's comprehension scores are compared to their week 10 comprehension score. Student 1 showed an increase of 60%. Students 2 and 3 both showed an increase of 50%. Student 4 showed an increase of 40%. Although all four students had an increase of their comprehension score, only 2/4 students scored at or above grade level standard, which is 80-100%, during week 10.

Table 1

Comprehension Quiz Results

Student	Baseline Average Score	Post-Intervention	Pre and Post Intervention Difference
1	40%	100%	60%
2	20%	70%	50%
3	30%	80%	50%
4	20%	60%	40%

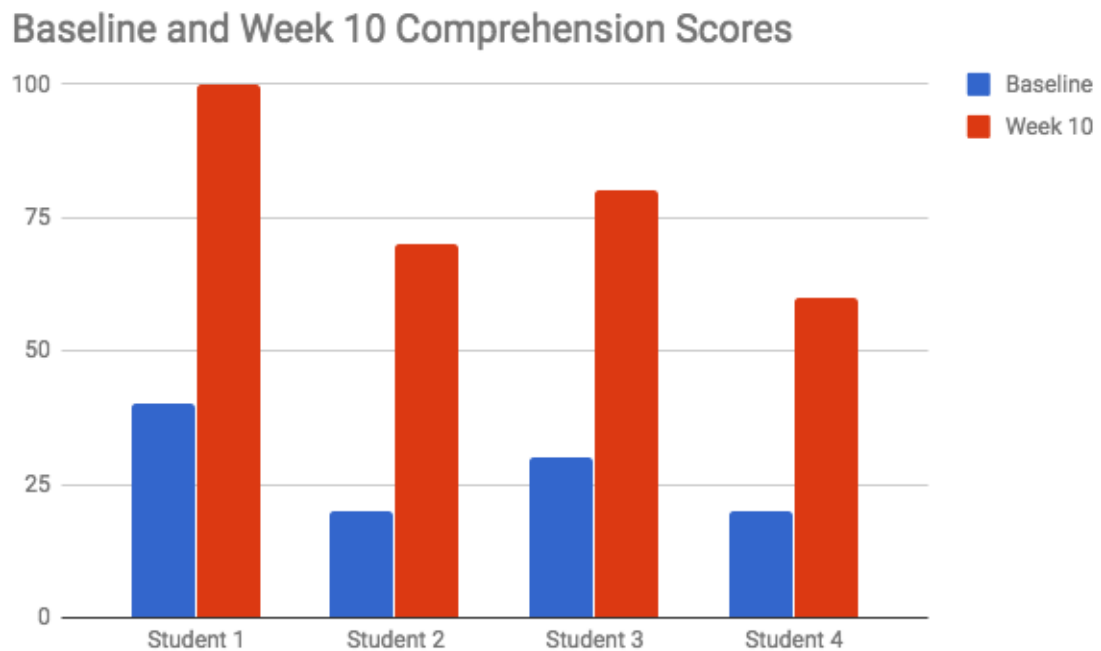


Figure 6. Baseline and week 10 comprehension scores

Self-Monitoring Scores

The students used the self-monitoring checklist for a total of four weeks. Each day there were six opportunities to earn a check in each of the three categories. For the total of four weeks, there could have been a total of 120 check marks per category. Prior to these four weeks, the students were given a two-week introductory/instruction period to learn how to self-monitor. The results are shown in table 2.

Table 2

Individual Intervention Self-Monitoring Scores

Student	I was prepared.	I was focused.	I completed my work.	Average prompts per day
1	83/120	62/120	103/120	13
2	98/120	72/120	87/120	18
3	102/120	89/120	108/120	6
4	64/120	71/120	42/120	17

Chapter Five

Discussion

Summary of Results

During this research study, four third grade students learned how to self-monitor their daily behavior using a checklist. Additionally, the reading comprehension scores of these four students were examined, in order to determine if on-task and appropriate behavior has an effect on reading comprehension. To guide the study, the following research questions were used:

1. Does self-monitoring of behavior reduce the selected target behavior problems?
2. Does appropriate behavior increase the academic achievement of third grade students with behavioral difficulties, including those with disabilities?

Self-monitoring allows the students to take responsibility for his or her behavior, and take the time to recognize how they are behaving throughout the school day. As a result, the influence of appropriate behavior could also increase academic achievement, which is why a study of reading comprehension scores was also implemented.

Each of the four subjects learned how to self-monitor using the designated checklist for two weeks prior to the official implementation of the intervention. All four students were eager to begin, and excited to have an incentive to work towards when they demonstrated appropriate behavior (computer time, homework pass, or teacher helper). During the four weeks of the intervention, the students required additional prompting to remember to check-in, which was expected since the students are only eight and nine years old.

Each of the four students displayed a decrease in the number of teacher prompts needed to demonstrate appropriate behavior after the self-monitoring of behavior intervention was implemented. Additionally, all four students demonstrated an increase in their comprehension score after the intervention was implemented. However, 2/4 students were still not meeting the third grade standard for comprehension.

Relation to Previous Research

There have been many research studies completed on self-monitoring of behavior, including studies on elementary aged students. One single subject study completed by Vogelgesang, Bruhn, Coghill-Behrends, Kern, and Troughton (2016) implemented the use of a self-monitoring system for three fifth grade students diagnosed with ADHD. This study also used self-monitoring as a behavior intervention, however instead of a checklist, a score of 1-4 was chosen by the student through the use of an iPad application. The students had a baseline percentage of academic engagement between 21-46%. After the intervention, the students demonstrated an academic engagement of 84-86%.

Both this previous study from 2016, and this current study saw an increase in on-task behavior. The sample size of the two studies was also similar, and was able to provide specific information on each subject. The 2016 study used an iPad application to track behavior, would require less paperwork as compared to this current 2018 study. Additionally, using an iPad would have possibly been more engaging for the students, as compared to a paper checklist.

Further, a previous study completed by Tiffany Otero and Jillian Hunt (2016) involved three students who received an intervention to increase on-task behavior. Instead of hourly check-ins to monitor behavior, these three students were prompted

every 20 minutes by a tool called the MotivAider. The targeted behaviors included: following directions, appropriate listening behavior (body language, mouth closed, etc), completing a given task, all of which would in turn assist in improving academic achievement.

This 2016 study was similar to the current study because both had a goal of using self-monitoring of behavior in order to increase academic achievement. The MotivAider tool could have alleviated some of the responsibility from the teacher, as the students in the current study had to be reminded multiple times to self-monitor during the intervention period. Additionally, the 20-minute period used in the 2016 study would yield more specific results, versus the hour long period from the current study.

Limitations

The successful implementation of this study required a lot of teacher and student monitoring. The study was completed in an inclusion classroom, where there are two full time teachers. Both teachers were able to each focus on two students, making it easier to manage the tracking. Additionally, there were several accommodations and modifications that were made for three out of the four students during the reading comprehension assessments. Three of the students were classified, so they were given additional time, clarified and repeated directions, and one student had the questions read aloud. These modifications may have had an impact on the comprehension scores.

Future Studies

In future studies, I believe simplifying the protocol would be beneficial. It was fairly difficult to monitor all four students throughout the day, for the entire day. As the

teacher, I needed to monitor to make sure the students were using their checklists, and I also needed to track the number of prompts delivered to each student throughout the day.

Since this particular study was to determine the effect of appropriate behavior and reading comprehension, it would be beneficial to track the student's behavior during the reading block of the school day. Shortening the amount of time behavior is tracked would allow for multiple check-ins during the 90 minute block, instead of one per hour.

Additionally, instead of using a paper checklist to monitor behavior, the students could use an application on an iPad to track behavior, if available. Using technology may also be a motivator for the students.

Practical Implications

There are several conclusions from this study that can be utilized in the classroom. Self-monitoring of behavior can successfully be implemented in a third grade classroom, and can be used by general education students as well as students with disabilities. There is definitely a learning curve, and teaching the students how and when to self-monitor can be time consuming. However, if the students are able to independently check-in and monitor when told, then the system can be very successful.

Additionally, there was an increase in both on-task behavior and in reading comprehension scores, while using the intervention. Teachers could utilize self-monitoring if they want to improve on-task behavior and/or reduce the number of behavior-related prompts given on a daily basis. The increased on-task behavior also increased student's comprehension scores in this study, so classroom teachers could utilize self-monitoring as an intervention to attempt to raise reading comprehension scores.

Conclusion

In summary, each of the four students in this study demonstrated a decrease in the number of re-directive behavior prompts needed by the teacher during the intervention phases, as compared to baseline numbers. Each student also saw an increase in their comprehension scores, with two out of the four students achieving at or above grade level scores. Eliminating distracting behaviors, and therefore increasing time on task during the school day, will increase student's reading comprehension scores.

References

- Bruhn, A, McDaniel, S., and Kreigh, C. (2015). Self monitoring interventions for students with behavior problems: a systematic review of current research. Council for Children with Behavioral Disorders. Behavioral disorders, Vol. 40(2), 102-121.
- Finn, L., Ramasamy, R., Dukes, C., and Scott, J. (2014). Using watchminder to increase the on-task behavior of students with autism spectrum disorder. Springer Science+Business Media: New York.
- Otero, T., and Haut, J. (2016). Differential effects of reinforcement on the self-monitoring of on-task behavior. American Psychological Association. School psychology quarterly, Vol. 31(1)91-103.
- Plavnick, J. B., Ferreri, S. J., & Maupin, A. N. (2010). The effects of self-monitoring on the procedural integrity of a behavioral intervention for young children with developmental disabilities. Journal of Applied Behavior Analysis, 43(2), 315-20. Retrieved from:
<http://ezproxy.rowan.edu/login?url=https://search.proquest.com/docview/520114405?accountid=13605>.
- Rispoli, M., Zaini, S., Mason, R., Brodhead, M., Burke, M., and Gregori, E. (2017)A systematic review of teacher self-monitoring on implementation of behavioral practices. Department of Educational Studies, Perdue University. Teacher and Teacher Education Vol. 63, 58-72.
- Vogelgesang, K.L, Bruhn, A., Coghill-Behrends, W., Kern, A., and Troughton, L. (2016). A Single-subject study of technology based self-monitoring intervention. Springer Science Business Media: New York. (478-497).
- Wadsworth, J., Hansen, B., and Wills, S. (2014). Increasing compliance in students with intellectual disabilities using functional behavioral assessment and self-monitoring. Hammill Institute on Disabilities: Remedial and Special Education, Vol. 36(4) 195–207.