5-22-2018

The effectiveness of student choice of self-monitoring

Victoria Dougherty
Rowan University

THE EFFECTIVENESS OF STUDENT CHOICE OF SELF- MONITORING

by

Victoria Dougherty

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 4, 2018

Thesis Chair: Dr. Amy Accardo

Dedication

I would like to dedicate this manuscript to my fiancé, Nick. Thank you for your constant support throughout this process.

Acknowledgment

I would like to express my appreciation to Dr. Amy Accardo. Thank you for your guidance and patience throughout this research.

Abstract

Victoria Dougherty
THE EFFECTIVENESS OF STUDENT CHOICE OF SELF-MONITORING
2017-2018
Dr. Amy Accardo
Master of Arts in Special Education

The purpose of this study was to analyze the effect of choice on self-monitoring systems with students in first and second grade with disabilities. Specifically the study analyzed the effects of self-monitoring and choice on (a) on task behaviors and (b) academic achievement. Moreover, student satisfaction with self-monitoring and choice of self-monitoring were evaluated for social validity. Four students participated in the study, one female and one male first grade student and one female and one male second grade student. Three students were classified Specific Learning Disability and one student was classified Communication Impaired. The design of this research was single-subject multiple baseline across participants. During the baseline phases, students completed independent practice. After a teacher-led discussion, students were given a self-monitoring system to use while completing their work. Two different self-monitoring systems were implemented as an intervention, self-monitoring of attention (SMA) and self-monitoring of performance (SMP). During the last intervention phase, students were allowed to choose what self-monitoring system they wanted to use. Results show that students were the most on task and achieved more academically when SMP was assigned. Student surveys show that the intervention of choice was the most socially accepted. Further research is needed to examine long-term benefits of choice and self-monitoring for students with disabilities.

Table of Contents

Table of Contents (Continued)

List of Figures

List of Tables

Chapter 1

Introduction

Educators have an enormous responsibility to impart students with the necessary skills to become productive members of society. Skills taught in the classroom should be generalized into society where students can thrive and be productive citizens, and if students can be productive in the classroom they can be productive in society (Harris, Friedlander, Saddler, Frizzelle, & Graham, 2005). Skills and strategies taught in school should lead to on-task behaviors and academic achievement in the classroom (Harris et al., 2005). Self-monitoring allows a person to regulate one's own behavior in order to adjust and thrive in social situations. However, regulating one's own behavior is not always innate. Self-monitoring is an explicit strategy that can be taught using positive support systems (Harris, et al.; Rock, 2005). The use of self-monitoring systems can improve the academic engagement and achievement of students with a variety of needs across many subject areas (Harris et al., 2005; Rock, 2005; Rock & Thead, 2007).

Statement of the Problem

Students placed in a special education resource room exhibit a variety of needs academically and socially. They are placed in a resource room because their needs cannot be met in a general education classroom. They have diverse cognitive abilities and require varied instructional approaches (Rock, 2005). Moreover, they exhibit inattention, impulsivity, and off- task behaviors (Harris et al. 2010; Rock, 2005). With these needs, special education teachers should implement various positive behavior support systems for students to be successful and learn.

Students who are engaged and on-task achieve higher levels of academic success (Rock, 2005). However, students with special needs are chronically disengaged from tasks due to hyperactivity, inattention and other externalizing behaviors (Harris et al., 2010). When students are off-task, they do not complete a task in the allotted time (Rock, 2005). If a student is off-task and does not complete the task, academic achievement was not reached to its fullest potential (Rock 2005). Teachers need to implement interventions that increase on task behaviors and task completion.

To increase on-task behaviors and task completion, students may benefit from an intervention such as positive behavior support systems (Todd, Horner, & Sugai, 1999), self-monitoring systems (Harris et al, 2010; Rock 2005; Wolfe et al, 2000), and the use of choice (Morgan 2006; Ramsey, 2010). A positive behavior support system is a positive behavioral intervention involving self- regulation through self-assessment and self-recording that has been shown to effect both behavioral and academic performance (Harris et al., 2005). Self-Monitoring has been used successfully as a positive behavioral support system in a variety of classroom settings. Self-Monitoring provides students with the tools to remain engaged and on task. It has also been shown to increase student achievement (Harris, 2005; Rock 2005; Rock & Thead 2007).

Studies have divided the strategy of self-monitoring into two types: self-monitoring of attention and self-monitoring of performance (Rock, 2005). Self-monitoring of performance focuses on academic accomplishments. Self-monitoring of attention focuses on the assessment of on-task behaviors (Rock, 2005). Findings reveal mixed results as to what type of self-monitoring is superior (Rock, 2005). Self-Monitoring of performance has led to an increase of academic achievement. Self-Monitoring of attention has led to

an increase of on task behaviors. Additionally, providing choice to students may impact their ability to self-monitor so that both on task behaviors and achievement are improved concurrently.

Just as self-monitoring provides students with control, providing students with choice is also a practice that allows for control in a situation (Morgan, 2006). Allowing students to make choices positively effects their academic and social behaviors (Ramsey et al., 2010). When given choices, students feel a greater sense of autonomy because they have control over their environment (Ramsey et al., 2010). Morgan (2006) reports a positive relationship between student choice and on-task behaviors and academic performance.

Significance of the Study

The significance of this study is to measure if a student chosen self-monitoring system will increase on-task behavior and/or achievement. Building on prior research that students are motivated by choice (Ramsey et al., 2010; Morgan 2006), students will be provided with a choice of using a system to monitor their own academic performance or a system to monitor their own attention to task. Previous studies reveal that each type of self-monitoring only results in improvements in the targeted area; self-monitoring of performance improves achievement and self-monitoring of attention improves on-task behaviors (Harris, 2005; Rock, 2005; Rock & Thead, 2007). Building on this research, the present study will consider if students improve achievement or on-task behavior using a chosen self-monitoring system, and if increases in both on-task behaviors and achievement occur simultaneously, regardless of the system chosen.

Purpose of the Study

The purpose of this study is to investigate the effectiveness of a self-monitoring system on (a) student on-task behaviors, and (b) student achievement. The study will also investigate student satisfaction using self-monitoring when given a choice of what skills to monitor.

Research Questions

1. Will the use of a student chosen self-monitoring system increase on-task behavior and/or academic achievement of students receiving services in a resource room?
2. Will students increase both on-task and academic performance regardless of the self-monitoring system chosen?
3. Will students be satisfied with the use of their chosen self-monitoring system?

Key Terms

For the purpose of this study, the following terms will be defined as follows:

1. Self-monitoring: a positive behavioral intervention involving self-regulation through self-assessment and self recording that has been shown to effect student behavioral and academic performances (Harris et al., 2005).

2. Choice: students pick their preference toward self-monitoring (Ramsey et al., 2010).

3. On-task behaviors: showing focus physically (eyes focused on work), not displaying physically distracting behaviors (getting out of seat, moving around, fidgeting) (Harris et al., 2005).

4. Academic Achievement: Total number of items completed correctly. (Harris et al., 2005).

Chapter 2

Literature Review

Self-monitoring is a self- regulation process (Harris, Friedlander, Saddler, Frizzelle & Graham 2005). It is an essential and critical component to the learning process (Bouck, Savage, Meyer, Taber- Doherty & Hunely, 2014). It allows students to become aware of their behaviors that impede their learning and work to improve such behaviors. Students who use self-monitoring control their activities and evaluate their outcomes. If students have a positive outcome toward their self-monitoring, their motivation and persistence toward a task will increase (Falkenberg & Barbetta, 2013).

The process of self-monitoring is student-centered promoting independence, motivation and engagement (Kanani, Adibsereshki, Haghoo, 2017). Self-monitoring has advantages for both the teacher and the students. When students can successfully self-monitor teacher- directed prompts decrease and instructional time increases (Bouck et al., 2014; Wolfe, Heron, Goddard, 2000). Research on self-monitoring has been conducted in various classroom environments with various student populations (Falkenberg & Barbetta, 2013; Harris et al., 2005; Bouck et al., 2014; Rock, 2005; Bialas & Boon, 2010; Holifield, Goodman, Hazelkorn & Heflin ., 2010; Peter & Kamps, 2010; Wolfe et al. 2000; Wadsworth, Hansen and Wills, 2015; Rafferty & Raimondi, 2009). Concretely, it is important to look at what has been revealed in past research to determine what still needs to be discovered in terms of positively and effectively implementing self-monitoring in the classroom setting.

Needs of Students with Learning Disabilities

It is a requisite skill for students to attend to a task to achieve academic success (Rock, 2005). For various reasons, students with special needs lack the ability to attend to tasks and therefore do not achieve their learning potential (Rock 2005). Impulsivity, inattentiveness and inappropriate working stamina are some of the most noted behaviors displayed by special education students which prevent students from successfully remaining on task and achieving academic achievement (Holifield et al., 2010). Students also display attention seeking or task avoidance behaviors which also impede on- task behaviors and academic achievement (Wadsworth et al., 2015). Studies reveal how implementing a self-monitoring system increases on- task behaviors and academic achievement (Harris et al., 2005). Studies have promoted the use of self-monitoring for students with Attention Deficit Hyperactivity Disorder (ADHD) and students who are learning disabled (LD) (Harris et. al, 2005; Wolfe et al., 2000; Reid, 1996). There are also studies that have applied the use of self-monitoring for students who are autistic (Holifield et al., 2010; Parker & Kamps,2010; Bouck et al., 2014), emotional disturbed (Rafferty & Raimondi, 2009), intellectually disabled (Wadsworth et al., 2015) and developmentally delayed (Bialas & Boon, 2010). All of these studies were conducted in either a general education inclusive classroom or in a self- contained classroom.

Self-Monitoring

To increase on-task behaviors and task completion, students may benefit from an intervention such as positive behavior support systems (Todd, Horner, & Sugai, 1999) and self-monitoring systems (Harris et al, 2010; Rock 2005; Wolfe et al., 2000). A

positive behavior support system is a positive behavioral intervention involving self-regulation through self- assessment and self- recording that has been shown to effect both behavioral and academic performance (Harris et al., 2005). Self-monitoring has been used successfully as a positive behavioral support system in a variety of classroom settings. Self-monitoring provides students with the tools to remain engaged and on-task. It has also been shown to increase student achievement (Harris, 2005; Rock 2005; Rock & Thead 2007).

Classroom Settings

Due to the growing practice of inclusion, the majority of research has measured the effects of self-monitoring in inclusive general education classrooms (Falkenberg & Barbetta, 2013; Harris et al., 2005; Rock, 2005; Todd, Horner, Sugai, 1999). Falkenberg and Barbetta (2013) conducted a study using multiple- baseline design to measure the effects of self-monitoring for homework completion and accuracy for fourth grade students with disabilities in an inclusive general education classroom. Participants self-monitored both at home and at school and conferenced with the special education teacher about their self-monitoring sheets. While fading was implemented, data showed maintenance after the removal of the intervention. The results suggest evidence for the effectiveness of self-monitoring to improve task completion and accuracy in inclusive general education setting (Falkenberg & Barbetta, 2013).

Similar to the previous study, Rock (2005) conducted a study in two inclusive classrooms. Participants were taught to use the ACT- REACT self-monitoring system. A multiple- baseline- across- subjects design was used to measure the effectiveness of

ACT- REACT strategy on student's academic engagement, non-targeted problem behavior, productivity and accuracy. Students used a self-monitoring think sheet that included academic performance and goal statement prompts. Students were prompted every five minutes to record attention and performance using a timer. Problem behaviors and disengagement decreased during both intervention phases as well as an increase in academic accuracy and productivity. Results showed self-monitoring to be an effective procedure for increasing academic engagement and productivity, as well as for maintaining accuracy in students with and without exceptionalities in inclusive classrooms (Rock, 2005).

Bialas and Boon (2010) conducted a study on the effects of self-monitoring procedure for kindergarteners at risk for developmental delays in an inclusive classroom. This study used a multiple baseline design to increase student compliance in the classroom through the use of a self-monitoring procedure. Students had to monitor if they listened to directions and if they could repeat the directions. These on-task or compliant behaviors were demonstrated by students remaining in their seats, not making noises with their eyes on the teacher. Repeating the directions required the students to describe the two- step directions previously given by the teacher. To self- monitor these behaviors students used a checklist with picture prompts. They recorded how many checks they received using a line graph. Data shows the self-monitoring system was effective for all three students at risk for developmental disabilities. All three students showed an increase in compliant behaviors; the self-monitoring checklist allowed students at risk with developmental delays in an inclusive classroom to remain on task (Bialas and Boon (2010). Self-monitoring has proven to be an effective system to implement in inclusive

settings to increase on task behaviors (Falkenberg & Barbetta, 2013; Rock, 2005; Bialas & Boon, 2010) and academic performance (Falkenberg & Barbetta, 2013; Rock, 2005).

Research on self-monitoring has also been conducted in a self-contained resource room setting. Holifield, Goodman and Heflin (2010) measured the effectiveness of self-monitoring on increasing on-task behaviors and task accuracy during language arts and mathematics independent work with two students with autism in a self-contained classroom. It was reported that the students demonstrated high levels of off- task behavior and low levels of task completion during independent practices. When self-monitoring was implemented attention to task and academic accuracy increased immediately for each participant. Findings from this research study supports the use of self-monitoring for increasing attention to task, which subsequently enhanced accuracy levels for both students (Holifiel et al., 2010).

Similar to Holified et al. (2010), Parker and Kamps (2011) conducted a study with students who were autistic placed in a self- contained classroom, more specifically the public school's summer program for children with autism. Parker and Kamps (2011) created a multiple baseline probe design across three different activities. The three activities chosen for this study were games, cooking and restaurant activities because they are functional skills that can be generalized in a variety of settings for students with autism. This study used multicomponent interventions with self-monitoring being one of them. Social stories were the other component. The purpose of this study was to measure the effects the interventions had on increased task completion, verbal interaction and engagement. Self-monitoring through task analyses was implemented to teach functional skills and increase verbal interaction in a social setting. Students could check tasks off

once they were completed. Reminders for verbal interaction were included in this task analyses. Results showed that self-monitoring with task analyses increased the number of steps that each student was able to complete independently. In addition to improving task completion, the self-monitoring system allowed the students to achieve higher levels of performance; students increased social interaction and verbal interaction (Paker & Kamps, 2011).

Other studies prove the effectiveness of self-monitoring in a self- contained setting. Bouck, Savage, Meyer, Doughty and Henley (2014) compared the effectiveness of self-monitoring using two different recording systems. The study compared the traditional paper pencil self-monitoring to technology- based self-monitoring to analyze which method had the added benefits. Students used the iPad to self- monitor when the technology phase was implemented. Task independence and time to complete the task were the dependent variables. Students were to complete a food preparation task using the self-monitoring methods. The study used an alternate treatment design including a baseline phase, comparison phase, best treatment phase and maintenance phase. The study revealed both interventions increased task independence with the iPad being the more effective, efficient and preferred system for self-monitoring (Bouck et al., 2014).

As previously stated, students display off- task behaviors due to inattention or impulsivity. They can also display off- task behaviors to escape tasks, which is the behavior studied by Wadsworth, Hansen and Wills (2015). A multiple baseline design was created to increase compliance using a function- based self-monitoring intervention with three students with intellectual disabilities in two self- contained special education classrooms. Students self- monitored by giving themselves a token each time they

complied during the instructional period. When they complied with task for set amount of tokens a reward was given. Results showed self-monitoring intervention to decrease noncompliance through escape and increased on task behaviors (Wadsworth et al., 2015).

Types of Self-Monitoring

While research has promoted the effectiveness of self-monitoring in a variety of settings with students of varying abilities, research has also attempted to determine what type of self-monitoring system is the most effective. When self-monitoring is implemented in a classroom, students can monitor their attention, which is known as self-monitoring of attention (SMA) or they can self- monitor their performance, which is self-monitoring of performance (SMP) (Harris et al., 2005; Rock, 2005). According to Rock (2005), it remains inconclusive which self-monitoring process is superior to the other.

Harris et. al (2005) conducted a countered balanced, multiple baseline, across-subjects research design to analyze what self-monitoring system has positive effects toward behaviors and performance of students with ADHD. Harris et. al (2005) concluded while on task behaviors increased with both SMA and SMP. Academic performance only increased with SMA for students with ADHD. Conversely, previous studies have revealed that students with LD show gains in academic performance with the implementation of SMP (Reid, 1996). In terms of on- task behaviors, SMP and SMA have equally positive effects toward on- task behaviors with students with LD and students with ADHD (Harris et al., 2005; Reid, 1996). When academic performance is measured, student with ADHD show an increase when using SMA and students with LD show increase in academic performance when using SMP (Harris et al., 2005; Reid,

1996). Wolfe, Hernon and Goddard (2010) conducted a study where self- monitor of attention and self- monitor of performance were implemented simultaneously for four students with learning disabilities in a resource room. In this study, on task behaviors and written language performance were measured. When students self- monitored their attention an increase in on- task behaviors were observed but when students self-monitored their performance, written language did not improve.

It appears that both self-monitoring systems, SMA or SMP, increase on task behaviors (Harris e. al., 2005; Wolfe, 2010; Rock 2005). However, there are discrepancies as to what self-monitoring system can improve academic performance. Students with learning disabilities improved their academic performance using the self-monitoring of performance in a study conducted by Reid & Harris (1993). A driving question in the study by Reid and Harris was whether there was a differential effect between the two conditions. This study used a randomized group design and applied self-monitoring procedures to spelling practice. There was a significant increase in the number of correct spelling practices in the SMP condition. It is important to note that the SMA condition actually decreased learning. Wolfe (2010) found contrasting results when compared to Reid and Harris. Participants in the study conducted by Wolfe monitored their on- task behaviors and performance simultaneously to increase their written language. Data showed a positive relationship between on- task behavior and self-monitoring while data did not establish a compelling relationship between self-monitoring and performance.

Similar to Reid and Harris, Rock (2005) implemented a study where SMA and SMP were used simultaneously using the strategic self-monitoring approach known as

ACT- REACT. This study included five diverse students with and without disabilities. When baseline and intervention data were compared, student engagement and productivity improved. Student accuracy did not however. Rock (2005) suggests the accuracy may have been lost because of the complexity of combining SMA and SMP and suggest future research should evaluate a simpler execution. The attempt to combine SMA and SMP was to increase on task behavior and performance simultaneously. While intentions were warranted, the execution left students overwhelmed and not meeting sustained success with their work (Rock, 2005). Therefore, there needs to be a simpler way to implement a self-monitoring system that increases on task behaviors and performance concurrently, such as student choice.

Student Choice

Allowing students to make choices may positively impact their academic and social behaviors (Ramsey, Jolivette, Patterson, & Kennedy, 2010). When students are able to make an academic choice, there is an increase in their on- task behaviors and academic performance (Morgan, 2006). Allowing students to choose an academic choice empowers the students while building their confidence and independence (Sparks & Cote, 2012). Various studies have also proved these benefits with the implementation of self-monitoring (Falkenberg & Barbetta, 2013; Harris et al., 2005; Bouck et al., 2014; Rock, 2005; Bialas & Boon, 2010; Holifield et al., 2010; Peter & Kamps, 2010; Wolfe et al., 2000; Wadsworth et al., 2015; Rafferty & Raimondi, 2009). While conflicting studies reveal what is the best self-monitoring procedure in terms of increasing both on tasks behaviors and academic achievement, it is important to consider what would result if choice and self-monitoring systems were combined. Using the practice of student choice

and self-monitoring procedures, both benefits combined may achieve their complete intent and students become confident and independent learners who remain engaged and on task achieving high levels of academic performance.

There was one study found where choice of a self-monitoring system was implemented. Like many of the studies mentioned, Rafferty and Raimondi (2009) examined the differential effects of self-monitoring of attention versus self-monitoring of performance with students who are emotionally disturbed. During the last condition of the study, students were given a choice of what self-monitoring procedures, SMP or SMA, they wanted to use. Results were comparable to previous studies on SMA and SMP (Harris et al., 2005). Students in the study showed an increase in on task behaviors when using SMA and SMP procedures compared to baseline data. In terms of academic performance, SMP procedures yielded a higher levels of performance than when compared to the SMA procedures (Rafferty and Raimondi, 2009). When given a choice all students preferred to use SMP. Students explained that they found the SMA procedures too obtrusive. It is important to synthesize the fact that SMP was the preferred system and also the system that improved both on task behaviors and academic achievement concurrently. The results Rafferty and Raimondi (2009) found with providing a choice of self-monitoring for students who are emotionally disturbed provides motivation for further research. While Rafferty and Raimondi studies the effects of a student chosen self-monitoring system with students who were emotionally disturbed, further research can be conducted on measuring the effects of a student chosen self-monitoring system with students who have a different classification.

Summary

Teachers can empower students to become independent learners through the implementation of self-monitoring systems. Self-monitoring is a highly effective intervention to help students with disabilities monitor their own behavior (Rafferty and Raimondi, 2009). Self -Monitoring procedures have helped to increase on- task behaviors and academic achievement of students with a variety of disabilities (Falkenberg & Barbetta, 2013; Harris et al., 2005; Bouck et al., 2014; Rock, 2005; Bialas and Boon, 2010; Holifield et al., 2010; Peter & Kamps, 2010; Wolfe, Hernon & Goddard, 2000; Wadswort et al., 2015; Rafferty and Raimondi, 2009). Contrasting studies reveal what type of self-monitoring system, SMA or SMP, improve both on- task behaviors and academic achievement. Rafferty and Raimondi (2009) implemented the use of choice for students using self-monitoring procedures. Data from this study was analyzed to determine if the added benefit of student choice contributes to the increase in on-task behaviors and academic achievement. Although they concluded when students choose SMP procedures on- task behaviors and academic achievement both increase, Rafferty and Raimondi (2009) noted that results cannot be generalized. Further research is needed to suggest which self-monitoring system, SMA or SMP, produce an increase in on- tasks behaviors and academic achievement concurrently for students with disabilities. Rafferty and Raimondi (2009) conducted their study on students who were emotionally disturbed and it is important to conduct similar research on students of other abilities, such as students who are learning disabled

Chapter 3

Methodology

Setting

School. The study took place in a public school in a southern New Jersey school district. The school is the only school in the district. It serves students in preschool through eighth grade. When students exit eighth grade they attend an inter-district high school. The school follows a six period block schedule. Beginning in third grade, subjects are departmentalized and students are leveled by academic ability. The district is technologically advanced and implements a strong paperless initiative; each student is assigned a personal Microsoft tablet.

According to the New Jersey Performance Report, the school consisted of approximately 519 students in 2016, the most recent year a report was given. In 2016, approximately 36% of the student population had an IEP and received special education services. The school has a diverse student population. In 2016, 47.4% of the students were Caucasian, 23. 7% were African American students, 15.2% were Hispanic, 8.5% were Asian and 5.2% were Pacific Islander, American Indian or Multi- Racial decent (New Jersey Department of Education, 2016). A significant change in population has not occurred since the time this report was published and the demographics are similar to the population of when the present study was conducted.

Classroom. The classroom where the study took place is a kindergarten through second grade pull- out/ resource room. The classroom consists of a teacher desk, a kidney

table at the front board and a variety of other tables throughout the room. The teacher has an interactive board that works in conjunction with her Microsoft tablet. All students have their own tablets from which they do the bulk of their work in response to a district paperless initiative.

The teacher instructs both language arts and mathematics in this classroom. The teacher also taught social sciences during the school year the study was conducted. The number of students in the room changed throughout the day based on student needs and the removal from general education stated in each student's IEPs. The teacher had a total of seven students for language arts and mathematics. There were three additional students who came into the room for social sciences just for this current school year. The most students the teacher had at one time was five. The study was conducted during two language arts periods and one math period.

Participants

This study included six students: one kindergarten student, three first grade students and two second grade students. Two students are male: one in first grade and one in second grade. Four students are female: one in kindergarten, two in first grade and one in second grade. Five students were classified with a specific learning disability (SLD) and one student was classified as communication impaired. Students exhibited a variety of needs including oral expression, basic reading skills, reading comprehension, reading fluency, written expression, math problem solving and math calculation. All participants had an IEP to meet their individual needs. See Table 1 for general participant data.

Table 1

General Participant Data

Student	Age	Grade	Classification
A	6 years old	Kindergarten	SLD
B	6 years old	First Grade	CI
C	6 years old	First Grade	SLD
D	6 years old	First Grade	SLD
E	7 years old	Second Grade	SLD
F	7 years old	Second Grade	SLD

Participant 1. Student A is a six- year- old Caucasian female. This student is eligible for special education under the classification SLD. Student A comes into the room for two periods of language arts and one period of math. She is included in general education for the remaining instructional periods. Student A is a kind and organized student. Student A needs requires a significant amount of teacher redirection to stay on task. She lacks the ability and focus to complete work independently.

Participant 2. Student B is a six- year- old Caucasian male. This student is eligible for special education under the classification of communication impaired (CI). He comes into the classroom for one period of language arts and is included in general education for the remaining instructional periods. Student B is a very kind and respectful student. He participates well in group lessons. He becomes anxious at times during instruction when giving a response. He has difficulty expressing his thoughts clearly.

Participant 3. Student C is a seven- year- old Caucasian female. This student is eligible for special education under the classification SLD. Student C comes into the room for one period of language arts. She is included in general education for the remaining instructional periods. This student struggles in the areas of basic reading skills specifically decoding. She receives Wilson Reading System to improve her reading skills. Student C is a hard working student who is aware of her struggles with reading and is hard on herself when she is not met with success.

Participant 4. Student D is a seven- year- old Hispanic male. This student is eligible for special education under the classification SLD. Student D comes into the room for one period of language arts. This student struggles in the areas of basic reading skills specifically decoding. He receives Wilson Reading System to improve his reading skills. Student D has hyperactive tendencies often due to his anxiety when instructional demands are placed.

Research Design

This research used a single-subject ABABAB design. Each phase was five days long. Data was collected for all language arts and math instructional periods. This study explored the effect of the independent variable, the self-monitoring system, on the dependent variables of on task behavior and academic achievement. During Phase A, baseline data was collected for each instructional period using a teacher scale. Instruction during this phase followed the routine that was established in the beginning of the school year. The classroom followed the Daily 5 routine for language arts. With the Daily 5 structure, some students were working with the teacher while other students were

working independently at a Daily 5 station. Math instruction followed a similar format in which the teacher is working with students while other students completed independent work. During the first and second Phase B, different self-monitoring systems were introduced and data was collected using a teacher scale. During the first Phase B, all students used the teacher selected self-monitoring system of SMA. During the second Phase B, all students used the teacher selected self-monitoring system of SMP. During the second and third Phase A, no self-monitoring system was used and data was collected using a teacher scale. During the third Phase B, students chose which self-monitoring system to use, SMP or SMA. Data was again collected using a teacher scale. At the end of each Phase B, students completed a survey to report their satisfaction with the self-monitoring systems and the choice of a self-monitoring system.

Procedures

This study took six weeks to complete. Week 1 baseline data was collected on student on- task behaviors and academic achievement using the teacher scale. At the end of week 1, students were trained how to self- monitor using the first self-monitoring system focused on SMA. The first self-monitoring system consisted of a checklist. Students were prompted by a chime at one minute intervals to complete their self-monitoring checklist. Students circled a thumbs up or a thumbs down if they were on task. The teacher modeled for the students how to complete the checklist. Students were given time to practice using the checklist while the teacher observed. At the end of the practice session, the teacher and student conferenced about the checklist. The teacher and student discussed the responses the student made on the checklist for accuracy. Once students were familiar with the self-monitoring system, the intervention phase was

implemented for a week. Week 3 returned to baseline conditions and data was collected using the teacher scale.

During Week 4, the second self-monitoring system was implemented focused on SMP This self-monitoring system used a similar checklist implemented in the first Phase B. However, during this Phase B students monitored their performance as indicated by the written prompt and explained by the teacher. Students were prompted by a chime at one minute intervals to complete their self-monitoring checklist. Students circled a thumbs up or a thumbs down if they were completing their work. The teacher modeled for the students how to complete the checklist. Students were given time to practice using the checklist while the teacher observed. At the end of the practice session, the teacher and student conferenced about the checklist. The teacher and student discussed the responses the student made on the checklist for accuracy. Once students were familiar with the self-monitoring system, the intervention phase was implemented for a week. Week 5 was back to baseline and data was collected using the teacher scale. During week 6 students chose which self-monitoring system they wanted to use. Before they went to their independent practice, they told the teacher which self-monitoring system they wanted to use. Students then got the materials they needed from the assigned paper baskets in the front of the room and proceeded to complete their independent practice while using the self-monitoring system. The teacher continued to use the one-minute chime to remind students to self-monitor as both systems required this procedure.

Materials

Both self-monitoring systems used a similar hand-out to monitor attention and performance during their respected phases. Written prompts indicated what students were to monitor. This was also explained and modeled by the teacher before students used each hand out to self- monitor (see Figure 1 and 2). Teacher monitored student progress using a teacher scale (see Table 1 and 2). A chime was used to remind students to self-monitor using their sheets.

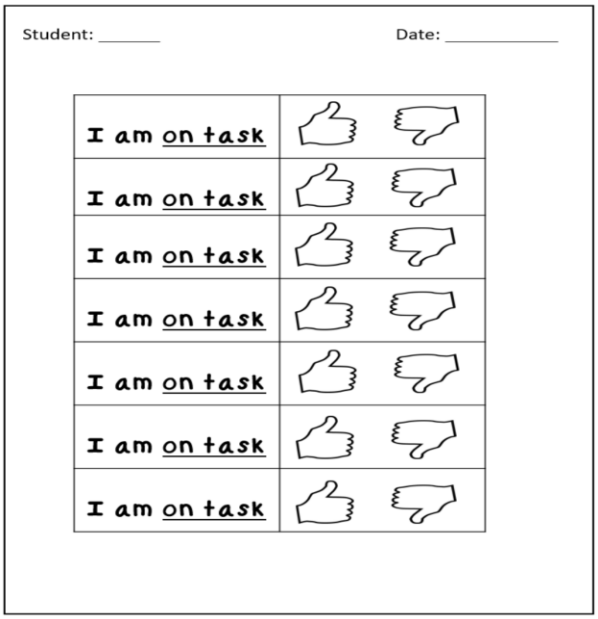

Figure 1. Self-Monitoring of attention sheet.

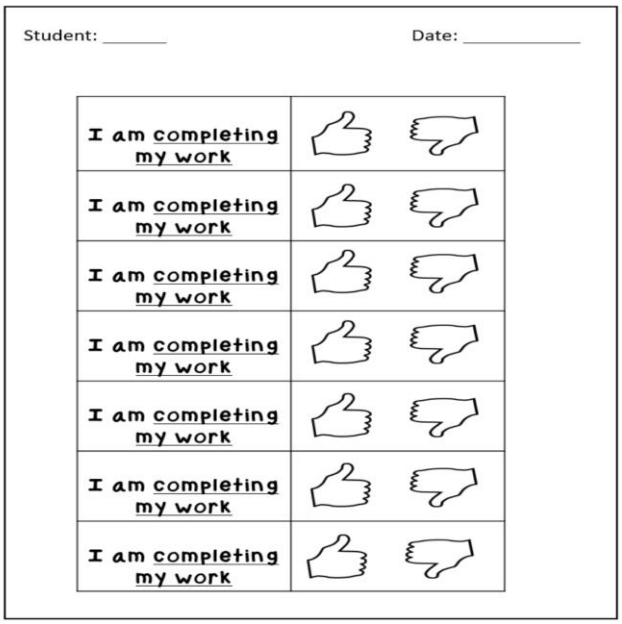

Figure 2. Self-Monitoring of performance sheet.

Table 2

Data Collection: Self-Monitoring of Attention

D	W1	W2	W3	W4	W5	W 6
1						
2						
3						
4						
5						

Score	Descriptor
1	not physically focused (eyes focused on work, getting out of seat, moving around, fidgeting) & distracted from environment (other students, noises, physical things around them)
2	Not physically focused (eyes focused on work, getting out of seat, moving around, fidgeting) or distracted from environment (other students, noises, physical things around them)
3	physically focused (eyes focused, not getting out of seat/moving around, fidgeting) & not distracted from environment (other students, noises, physical things around

Table 3

Data Collection: Self-Monitoring of Performance

D	W1	W2	W3	W4	W5	W6
1						
2						
3						
5						

Score	1	2	3
	All items completed correctly	80% of items completed correctly	<80% of items completed correctly

Dependent Variables

On task behavior. Throughout the study, on-task behavior was measured using a teacher scale. Students were given a score of 1-3. A score of 1 indicated the student was not on task and/or not physically focused. Student examples include: student's eyes not on the work, getting out of seat, moving around, distracted from things in the environment such as other students, noises, or objects in their vicinity. A score of 2 indicated the student was not on task due to physical behaviors or environmental factors. A score of 3 indicated the student was physically focused and not distracted by the environment.

Academic achievement. Academic achievement was monitored by grading students' independent work. Students were given a score of 1-3 for each independent practice session. Students received a 3 if all items in the practice were completed correctly. Students received a 2 if 80% of items were completed correctly and students received a 1 if less than 80% of the items were completed correctly.

Survey. At the end of the study, participants were asked to complete a satisfaction survey. Participants answered three questions for each intervention phase. The researcher read each question to the participants and gave participants time to provide a response to depict their perception of self-monitoring. Participants answered questions using smiley faces. A smile face meant the student agreed with a statement or thought positively about what was being asked. A straight face meant the student was indifferent toward what was being asked. A sad face meant a student disliked what was being asked (see Figure 3).

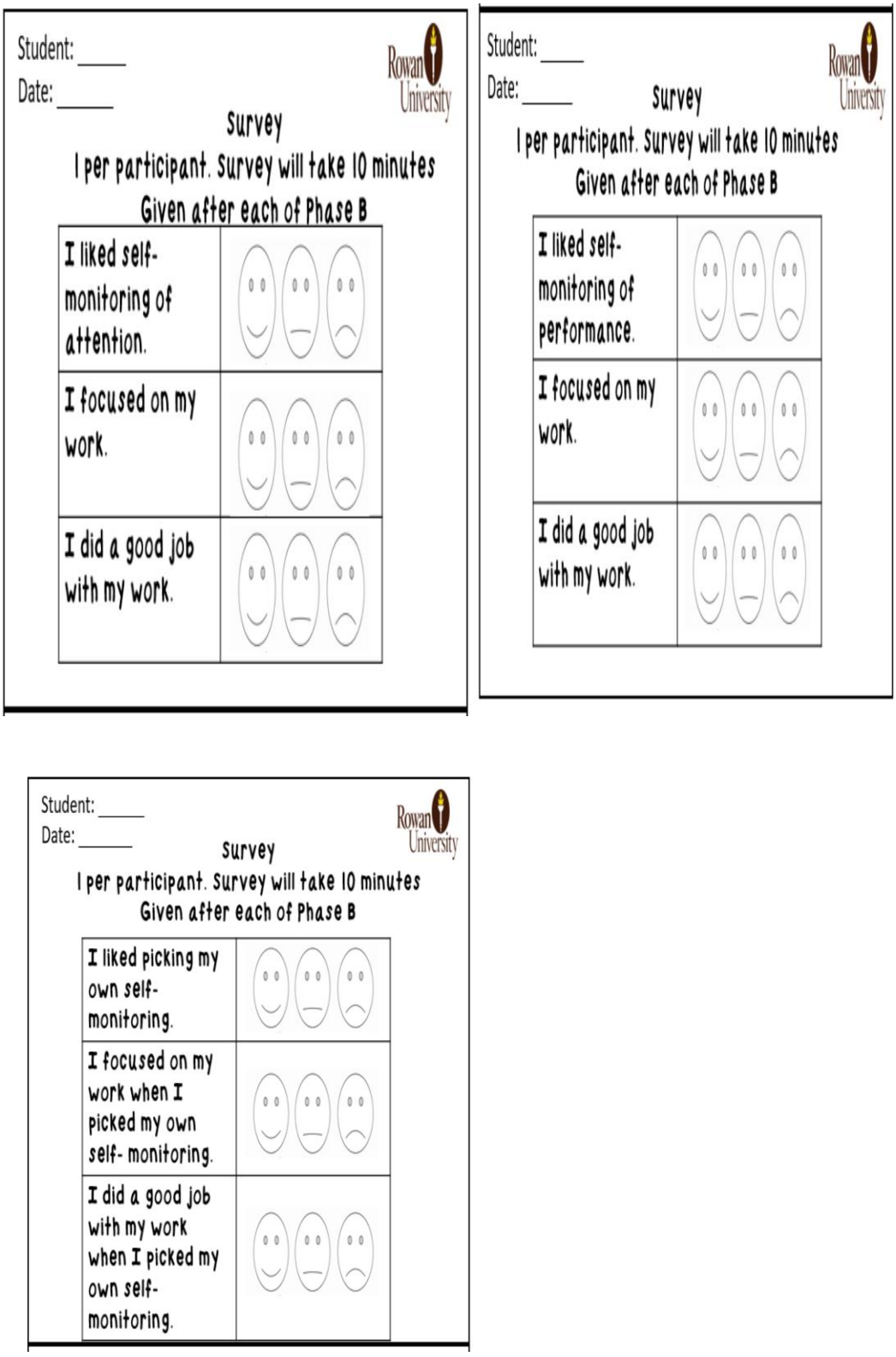

Figure 3. Student Survey.

Data Analysis

Surveys results were collected and compiled into a table. On task and academic achievement scores were combined and converted into percentages. The data of the two variables, on task and academic achievement, from each phase were displayed in a table. Moreover, results from each phase were compared and converted into graphs for visual analysis. This comparison of results helped to determine the effectiveness of a student chosen self-monitoring system.

Chapter 4

Results

This study utilized a single subject multiple baseline across participants design to evaluate the effectiveness of self-monitoring and the effectiveness of student choice of self-monitoring in a pull-out resource room for students in kindergarten through second grade. Specifically, it investigated the effect self-monitoring and choice of self-monitoring on the academic achievement and on task behaviors of four students. During the baseline phases, students completed their work without using a self-monitoring system. During the intervention phases, students used a self-monitoring system to monitor their attention or academic performance. The teacher instructed and modeled how to use the self-monitoring system relative to each intervention phase. At each phase, the teacher rated the student's academic achievement and on task behavior on a rating scale.

On Task Behaviors

On task behaviors were assessed using a teacher rating scale. Means and standard deviations were calculated for each phase. On-task behavior was measured using a teacher scale. Students were given a score of 1-3. A score of 3 indicated the student was physically focused and attending within the environment. A score of 2 indicated the student was not on task due to physical behaviors or environmental factors. A score of 1 indicated the student was not on task and not physically focused. Table 4 provides student group data.

Table 4

On Task Group Mean and Standard Deviation

	Phase A	Phase B (SMA)	Phase A	Phase B (SMP)	Phase A	Phase B (Choice)
On Task Mean(SD)	1.35(.58)	2.25(0)	1.42(1.69)	2.17(.33)	1.58(.29)	2(.29)

Table 5 provides the mean and standard deviation data for each student. Students' on task scores were based on observable behaviors of the student during independent work time. Based on these observable behaviors, the teacher gave the students a score using the rating scale found in Table 2. Means and standard deviations of student's on task scores behaviors were calculated and are shown in Table 5.

Table 5

On Task Mean and Standard Deviation

Student	Phase A	Phase B (SMA)	Phase A	Phase B (SMP)	Phase A	Phase B (Choice)
A	1.2(0.45)	1(0)	1.33 (0.58)	1.33 (0.58)	1.33 (0.58)	1 (0)
B	1.6(0.55)	2(0)	1.33 (0.58)	1.33 (0.58)	1.33 (0.58)	1.67 (0.58)
C	1.4(0.55)	3(0)	1.67 (0.58)	3 (0)	1.67 (0.58)	2.67 (0.58)
D	1.2(0.45)	3(0)	1.33 (0.58)	3 (0)	1.67 (0.58)	2.67 (0.58)

Student A is a six-year-old Caucasian female. She is eligible for special education services due to her classification of SLD. Student A's first baseline mean score was 1.2. During the first intervention phase, Student A's mean score decreased to 1 when SMA was implemented. Student A's mean score increased during the second baseline phase to 1.33. When SMP was implemented in the second intervention, Student A's score remained the same as the second baseline score and remained the same again for the third baseline. A decrease in score was observed during the third intervention when choice was implemented. Daily data is show in Figure 4. As seen in Figure 4, Student A had one day where her scores increased during each baseline phase. Student A's scores decreased when SMA and choice interventions were implemented. Her scores increased when SMP

was used as a self-monitoring system during the second intervention phase. Student A received the highest mean score for on task behaviors during the baseline phases.

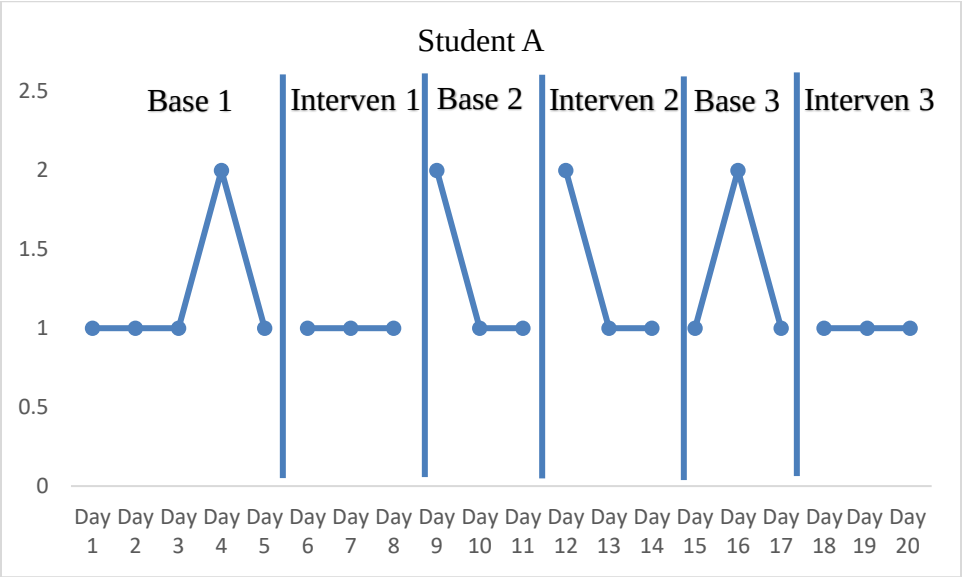

Figure 4. On task scores Student A

Student B is a six-year-old Caucasian male. He is eligible for special education services due to his classification of CI. Student B's first baseline mean score was 1.6. During the first intervention phase, Student B's mean score increased to 2 when SMA was implemented. Student B's mean score decreased during the second baseline phase to 1.33. When SMP was implemented in the second intervention, Student B's score remained the same as the second baseline score. His score also remained the same again

for the third baseline and an increase in score was observed during the third intervention when choice was implemented. Daily data is show in Figure 5. As seen in Figure 5, Student B's baseline data points all decreased toward the end of the data collection for that phase. When SMA was implemented in the first intervention phase, Student B showed a consistent increase in his scores. The second and third intervention (SMP and choice) both showed a decrease in score by the end of the data collection for each phase. Student B received the highest mean score for on task behaviors during the second intervention phase (SMA).

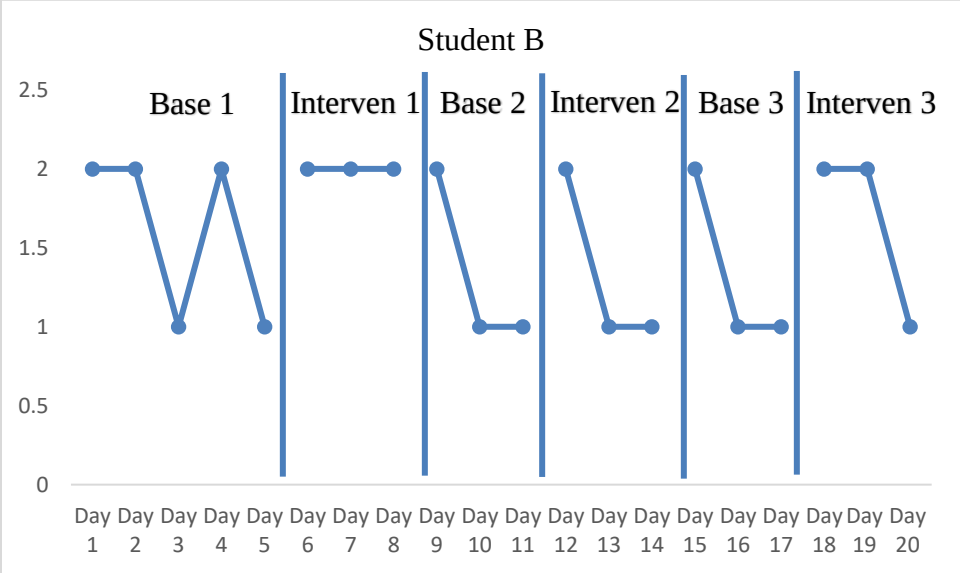

Figure 5. On task scores Student B

Student C is a seven-year-old Caucasian female. She is eligible for special education services due to her classification of SLD. Student C's first baseline mean score was 1.4. During the first intervention phase, Student C's mean score increased to 3 when SMA was implemented. Student C's mean score decreased during the second baseline phase to 1.67. When SMP was implemented in the second intervention, Student C's score increased to a 3. Her score decreased to a 1.67 during the third baseline phase and increased to a 2.67 when choice was implemented during the third intervention phase. Daily data is show in Figure 6. As seen in Figure 6, Student C's all the intervention phases show an increase in score compared to each baseline phase. All the interventions show high scores for Student C except in the third phase when choice was implemented. Student C started the third intervention receiving a score similar to those she received during baseline. However, later data points in the phase showed an increase score for Student C during the third intervention. Student C scored the highest on task behaviors during the first intervention (SMA) and the second intervention (SMP).

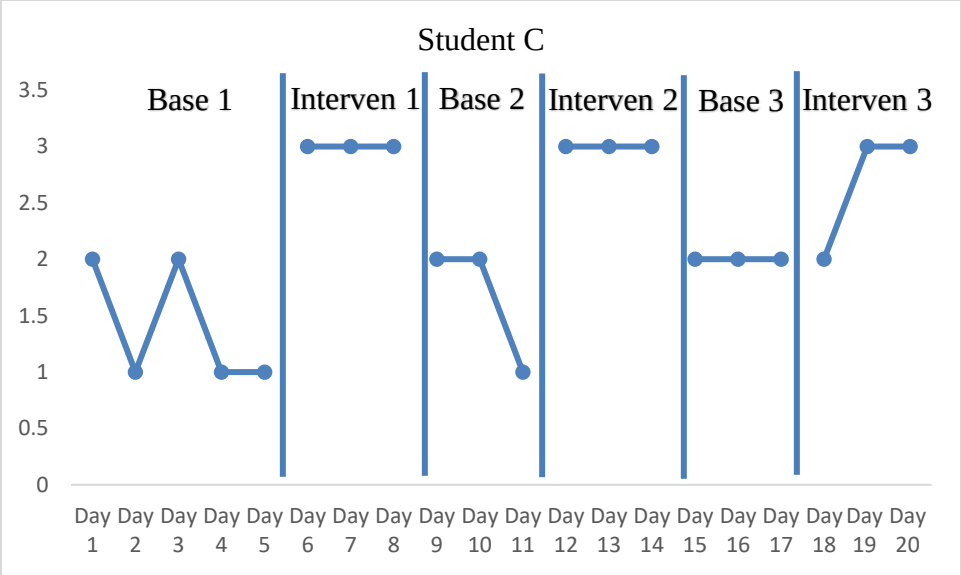

Figure 6. On task scores Student C

Student D is a seven-year-old Hispanic male. He is eligible for special education services due to his classification of SLD. Student D's first baseline mean score was 1.2. During the first intervention phase, Student D's mean score increased to 3 when SMA was implemented. Student D's mean score decreased during the second baseline phase to 1.33. When SMP was implemented in the second intervention, Student D's score increased to a 3. His score decreased to a 1.67 during the third baseline phase and increased to a 2.67 when choice was implemented during the third intervention phase. Daily data is show in Figure 7. As seen in Figure 7, Student D's all the intervention phases show an increase in score compared to each baseline phase. All the interventions show high scores for Student D. When SMA and SMP were implemented in the first and second intervention phases respectively, Student D received consistently high scores.

When choice was implemented in the third intervention phase, Student D showed a decrease in score one day but ending the data collection with an increase in score. Student D scored the highest on task behaviors during the first intervention (SMA) and the second intervention (SMP).

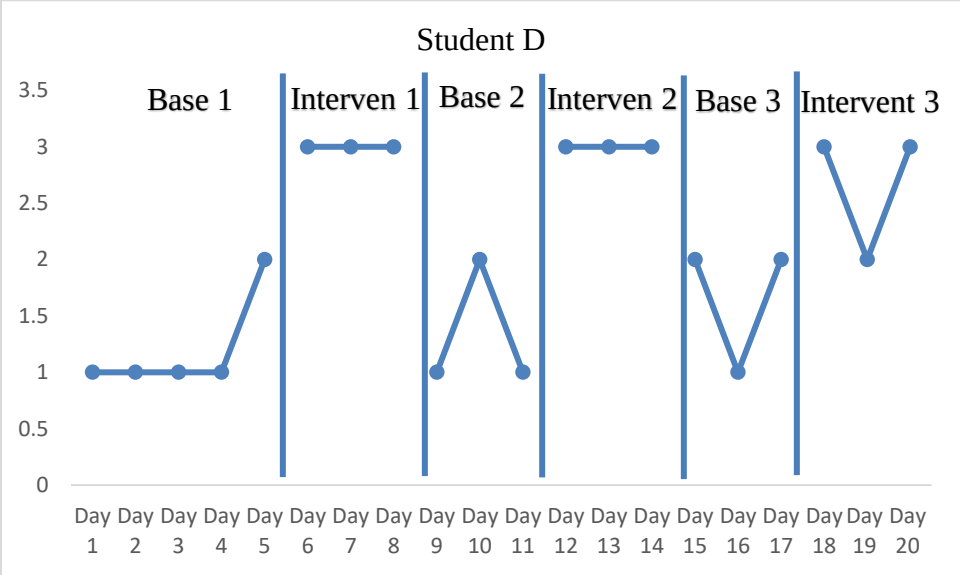

Figure 7. On task scores Student D

Academic Achievement

Academic Achievement was assessed using a teacher rating scale. Students were given a score of 1-3. Students received a 3 if all items in the practice were completed correctly. Students received a 2 if 80% of items were completed correctly and students

received a 1 if less than 80% of the items were completed correctly. Means and standard deviations were calculated for each phase. Table 6 provides student group data.

Table 6

Academic Achievement Group Mean and Standard Deviation

	Phase A (Baseline)	Phase B (SMA)	Phase A	Phase B (SMP)	Phase A	Phase B (Choice)
On Task Mean(SD)	1.5(0.26)	2.25(1.34)	0.19(2.02)	2.33(0.33)	1.83(0.29)	2.25(2.22)

Academic achievement was assessed using a teacher rating scale. Means and standard deviations were calculated for each phase. Table 7 provides the mean and standard deviation data for each student. Students' academic scores were based on percentage of items during independent practice completed correctly. Based on percentage of work completed correctly, the teacher gave the students a score using the rating scale found in Table 3. Means and standard deviations of student's scores on academic achievement were calculated and are shown in Table 7.

Table 7

Academic Achievement Mean and Standard Deviation

Student	Phase A (Baseline)	Phase B (SMA)	Phase A	Phase B (SMP)	Phase A	Phase B (Choice)
A	1.2 (0.45)	1(0)	1.33 (0.58)	1.67 (0.58)	1.65 (0.58)	1.33 (0.58)
B	2 (0)	2.67(0.58)	1.67 (0.58)	1.67 (0.58)	2 (0)	2.33 (0.58)
C	1.4 (0.55)	2.67(0.58)	1.33 (0.58)	3 (0)	2 (0)	2.67 (0.58)
D	1.4 (0.26)	2.33(0.58)	1.33 (0.58)	3 (0)	1.67 (0.58)	2.67 (0.58)

Student A's mean score during the first baseline for academic achievement was 1.2. When the first intervention of SMA was implemented, Student A's score decreased to 1. Her score increased during the second baseline phase and continued to increase to 1.67 when SMP was implemented during the second intervention phase. Her score decreased during the third baseline phase and continue to decrease during the third intervention phase. Daily data is show in Figure 8. As seen in Figure 8, increases in scores were seen in the first baseline, the second intervention (SMP) and the third baseline. All the other phases, the first intervention, the second baseline and the third

intervention all show decreases in scores. The SMP intervention produced the highest mean average for academic achievement for Student A.

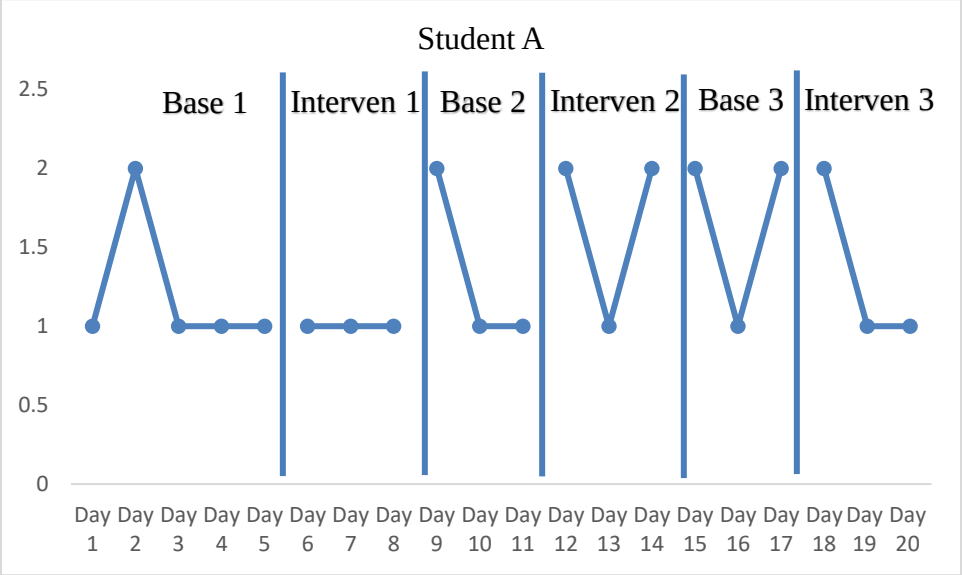

Figure 8. Academic Achievement Student A

Student B's mean score during the first baseline for academic achievement was 2. This score increased during the first intervention to 2.67. It then decreased to 1.67 for both the second baseline and second intervention (SMP). Scores then increased for the third baseline phase to 2 and 2.67 for the third intervention phase (choice). Daily data is show in Figure 9. As seen in Figure 9, increased scores in academic achievement were observed in the first intervention (SMA) and the third intervention (choice). Student B

showed a decrease in scores during all the other phases. The SMA intervention produced the highest mean average for academic achievement for Student B.

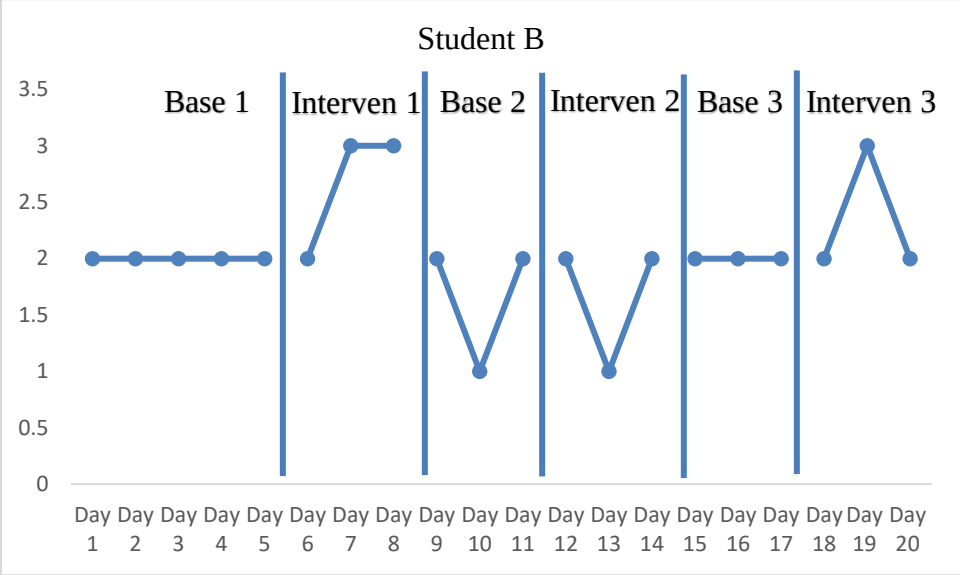

Figure 9. Academic Achievement Student B

Student C's mean score for the first baseline phase was 1.4. It then increased to 2.67 with the first intervention (SMA). Her score dropped to 1.33 during the second baseline. Student C increased her score to a 3 during the second intervention (SMP). It decreased again during the baseline phase and increased to 2.67 during the third intervention phase (choice). Daily data is show in Figure 10. As seen in Figure 10, increased scores in academic achievement was observed in all the intervention phases.

Her academic scores decreased going from an intervention to a baseline. The SMP intervention produced the highest mean average for academic achievement for Student C.

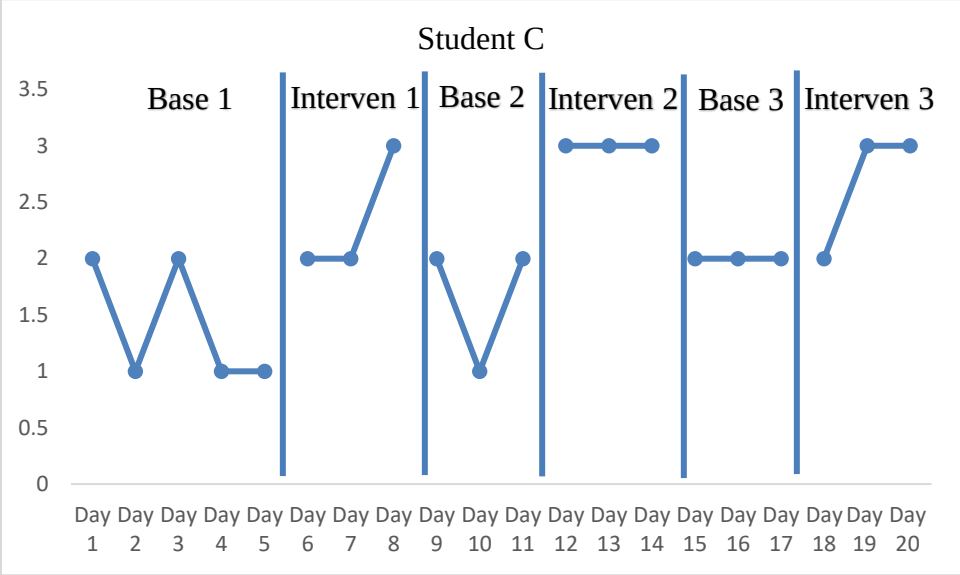

Figure 10. Academic Achievement Student C

Student D's mean score for the first baseline was 1.4. It increased to 2.33 during the first intervention (SMA). It decreased when Student D went back to baseline and increased back up to 3 during the second intervention (SMP). It dropped again during the third baseline only to increase again to 2.67 with the third intervention (choice). Daily data is show in Figure 11. As seen in Figure 11, increased scores in academic achievement were observed in all the intervention phases. His academic scores decreased

going from an intervention to a baseline. The SMP intervention produced the highest mean average for academic achievement for Student D.

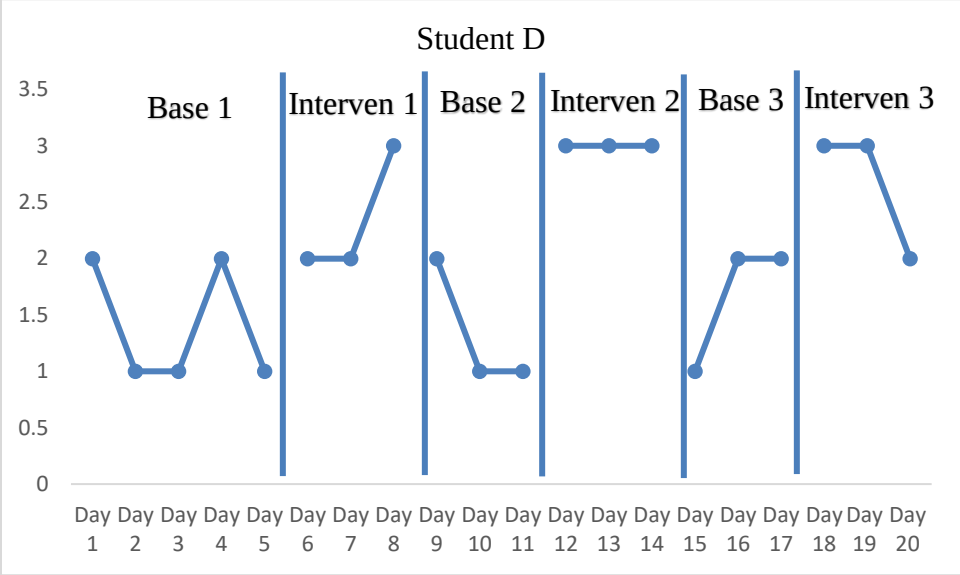

Figure 11. Academic Achievement Student D.

Table 8 shows the mean for both on task behaviors and academic achievement for all phases for each student.

Table 8

Means for On Task and Academic Achievement (AA)

Student	Phase A	Phase B (SMA)	Phase A	Phase B (SMP)	Phase A	Phase B (Choice)
A	1.2 (1.2)	1(1)	1.33 (1.33)	1.33 (1.67)	1.33(1.65)	1(1.33)
B	1.6 (2)	2 (2.67)	1.33 (1.67)	1.33 (1.67)	1.33 (2)	1.67(2.33)
C	1.4 (1.4)	3 (2.67)	1.67 (1.33)	3(3)	1.67 (2)	2.67 (2.67)
D	1.2 (1.4)	3(2.33)	1.33 (1.33)	3(3)	1.67 (1.67)	2.67 (2.67)

Student A, C and D's mean scores for both on task behaviors and academic achievement were the highest during the second intervention (SMP). Student B's mean scores for both variables were the highest at the first intervention phase (SMA). Although they do not reflect the highest scores, the intervention phase of choice produced scores that increased from the baseline scores. Table 9 shows which intervention (SMA or SMP) the student picked during the choice intervention and the scores they received for on task behaviors and academic achievement for each choice.

Table 9

Student Choice of Self-Monitoring

Student	Day 1 (On task/Academic Achievement)	Day 2 (On task/Academic Achievement)	Day 3 (On task/Academic Achievement)
A	SMP (1/2)	SMA(1/1)	SMA (1/1)
B	SMP (2/2)	SMA (2/3)	SMP (1/2)
C	SMA (2/2)	SMP (3/3)	SMP (3/3)
D	SMP (3/3)	SMP (2/3)	SMA(3/2)

Students A, C and D received their highest scores when they picked SMP as their choice of self-monitoring, which was also the highest mean score for these students when comparing the first and second intervention phases (SMA and SMP). Student B received his highest scores when he picked SMA as his choice of self-monitoring, which was also the highest mean score for this student when comparing the first and second intervention phases (SMA and SMP). The self-monitoring systems the students received the lowest scores when choice was implemented are similar to the low scores the students received during the intervention that implemented that system superficially. Choice in systems did not improve scores for the self-monitoring systems students were weaker in during its particular intervention phase.

Student Surveys

Research question three asked if students are encouraged to use self-monitoring when given choice of how to monitor. All students completed a Likert scale satisfaction survey after each intervention phase. To make the survey age appropriate, responses were expressed using smiley faces. A happy face showed they agreed with the statement, a straight face showed they were neutral to the statement and the sad face meant they disagreed with the statement. Results were collected and converted in percentages. Table 10 represents the percentage of students that responded in each category to each statement after the first intervention phase (SMA).

Table 10

Student Satisfaction after First Intervention Phase

Statement	Agree - Happy Face (%)	Undecided- Straight Face (%)	Disagree- Sad Face (%)
I liked self-monitoring	25.0	75.0	0
I think I focused on my work with self-monitoring	75.0	0	25.0
I think I did a good job with my work with self-monitoring	50.0	25.0	25.0

Survey results suggest students did not like using SMA during the first intervention phase. Despite their reported dislike of the system, most students agreed that it helped them focus on their work, with only one student reporting it did not help him with his work. Half of the students thought they did a good job while the remaining half felt undecided or negative toward SMA helping them increase work success. Survey results taken after the second intervention phase (SMP) were identical to after the first intervention phase. See Table 11.

Table 11

Student Satisfaction after Second Intervention Phase

Statement	Agree - Happy Face (%)	Undecided- Straight Face (%)	Disagree- Sad Face (%)
I liked self-monitoring	25.0	75.0	0
I think I focused on my work with self-monitoring	75.0	0	25.0
I think I did a good job with my work with self-monitoring	50.0	25.0	25.0

Table 12 represents the percentage of students that responded in each category to each statement after the third intervention phase (choice).

Table 12

Student Satisfaction after Third Intervention Phase

Statement	Agree - Happy Face (%)	Undecided- Straight Face (%)	Disagree- Sad Face (%)
I liked picking my own self-monitoring.	100.0	0	0
I think I focused on my work when I picked my own self-monitoring.	75.0	25.0	25.0
I think I did a good job with my work when I picked my own self-monitoring system.	100.0	0	0

Survey results suggest students were in favor of picking their own self-monitoring system (100%). They reported feeling that picking their own self-monitoring system helped them focus and helped them be successful with their work. Although choice is

preferred by most students (75%), choice did not yield the highest scores in on task behaviors and academic achievement.

Chapter 5

Discussion

The purpose of the present study was to investigate the effectiveness of student choice of a self-monitoring system. The participants were first and second grade students with disabilities. The study investigated the effectiveness of choice making in relation to self-monitoring of attention and self-monitoring of performance to increase on task behaviors and academic achievement, as well as the social validity of a student chosen self-monitoring system.

Findings

An increase in on task behavior and academic achievement were observed during each intervention. When using SMA, Student A did not show an increase in on task and her academic achievement slightly decreased. Students B, C and D demonstrated a notable increase during SMA in both on task behaviors and academic achievement. During SMP, Student A increased her academic achievement but not her on task behaviors. Student B did not improve his on task behaviors or academic achievement using SMP. Student C and D improved both their academic achievement and on task behaviors using SMP. During the last intervention phase, students chose what self-monitoring system they wanted to use. Student A showed a decrease in on task behaviors and academic achievement. Students B, C and D increased both their on task behaviors and academic achievement when compared the baseline. Amount of growth for both variables were similar for Students B, C and D when using choice.

When looking at each individual student, SMA proved the most effective for Student B, who is classified CI, in improving his on task behavior and academic achievement. SMP proved the most effective for Student C and Student D, who are both classified SLD, in improving their on task behavior and academic achievement. Student A thrived more during the baseline phases. This may be because this student has difficulty multi- tasking. It may have been difficulty for her to stay on task and focus on her performance while actually monitoring and recording such behaviors.

The study was designed to evaluate the effectiveness of a self-monitoring system on both on task behaviors and academic achievement. Research suggest that self-monitoring of attention improves on task behaviors and self-monitoring of performance helps academic achievement (Wolfe, Hernon & Goddard, 2010). This research was designed to evaluate the effect choice has on self-monitoring. Research suggests when students are able to make an academic choice, there is an increase in their on task behaviors and academic performance (Morgan, 2006). In the present study SMA improved both the on task behaviors and academic achievement for three students. With SMP, three students improved their academic achievement and two improved their on task behaviors. While more students increased both variables with SMA, the mean for both variables was the highest at SMP. These findings align with studies that found an increase in on task behaviors when using SMA and SMP but with higher levels of performance during SMP than SMA procedures (Harris et al., 2005; Raferty & Raimondi, 2009). Stronger scores during SMP may also be because SMP was implemented later in the study and students were developing an overall sense of comfort with self-monitoring by this later phase in the study.

When choice was implemented, student mean scores did not increase beyond those achieved using SMP. However, the chosen self-monitoring system improved both variables. When comparing SMA to choice, growth of the two variables was more similar when students chose a self-monitoring system compared to SMA. When comparing choice to SMP, SMP yielded higher mean scores for both on task behaviors and academic achievement. When students chose the self-monitoring system they were most successful with during the other intervention phases, results were similar and students were more successful. For example, Student B chose SMP more than the SMA. However, he was more successful when using SMA. It seems that choice improved both on task behaviors and academic achievement equally. However, choice was not the intervention that produced the highest gains in academic achievement and on task behaviors.

Student survey results reveal that 100% of students enjoyed choosing their self-monitoring system. One-third of the students indicated a self-monitoring system helped them focus while all students thought it helped them perform well.. Most students were unsure if they liked SMA and SMP although a third of them felt it helped them focus and half of the students thought it helped them do well on their work. Specifically, although it did not produce the highest mean for academic achievement and on task behaviors, student choice was the most well liked self-monitoring system used during this study. Choice also produced similar improvements in both on task behaviors and academic achievement.

Implications and Recommendations

The student sample size provided implications. Many times the intervention showed a decrease in variables compared to the baseline. This implies self-monitoring is not an appropriate intervention for this student. These findings are similar to Rock (2005) in which the complexity may have overwhelmed the student and she was not met with success with her work. This suggests the teacher needs to evaluate the cognitive and executive functioning abilities of this student and develop another intervention that will increase on task behaviors and academic achievement. Student B, who is classified as CI, benefited the most from SMA, which is similar to the findings of Harris (2005). Student C and D, who are both classified as SLD, benefited the most form SMP, which is similar to the findings of Reid (1996). This implies that students of different needs and abilities react and benefit differently from different interventions.

The results suggest that it may be beneficial to implement more choice and self-monitoring instruction to the first and second grade students. Students liked to choose their self-monitoring system the best but it did not yield the highest gains in academic achievement and on task behaviors. This implies that the teacher needs to implement more instruction about self-monitoring. The teacher should discuss and model how to pick the most effective self-monitoring system for the student. Although it did not produce the highest scores, choice of a self-monitoring system did improve on task behaviors and academic achievement. Moreover, from the survey it is apparent choice is appealing to the students. Guiding the students to making the appropriate choice for themselves is recommended for teachers.

Limitations

The two limitations of this study were time and sample size. Limited time between IRB approval and the end of the school year lead to a small collection of data points for each phase. The first baseline phase had five data points while all the other phases had three data points. This study was conducted with four students due to the return of parent consent forms. A bigger sample size and more data points may lead to a stronger conclusion of the effectiveness of self-monitoring and providing choice of a self-monitoring system to improve on task behaviors and academic achievement.

Conclusions

The present study supports the use of a self-monitoring system and implementing choice with a self-monitoring system with students with disabilities. After using a self-monitoring system and choosing a self-monitoring system students increased their on task behaviors and academic achievement. Social validity was confirmed with the use of an intervention satisfaction survey. Self-monitoring systems, including choice of a self-monitoring system, seems to be an effective research-based strategy that can be used in classrooms with students with disabilities.

References

Bialas, J.B. & Boon, R. (2010). Effects of self-monitoring on the classroom preparedness skills of kindergarten students at- risk for developmental disabilities. *Australasian Journal of Early Childhood, 35 (4).*

Bouck, E.C., Savage, M., Meyer, N.K., Taber- Doughty, T. & Hunley, M. (2014). High tech or low tech? Comparing self-monitoring systems to increase task independence for students with autism. *Focus on Autism and Other Developmental Disabilities, 29 (3),* 156- 167.

Falkenberg C.A. & Barbetta P.M. (2013). The effects of a self-monitoring package on homework completion and accuracy of student with disabilities in an inclusive general education classroom. *J Behav Education*, 22, 190-210.

Hager, K.D. (2012). Self-monitoring as a strategy to increase student teacher's use of effective teaching practices. *Rural Special Education Quarterly, 31 (4).*

Harris, K.R., Friedlander, B.D., Saddler, B., Frizzelle, R. & Graham, S. (2005). Self-Monitoring of attention versus self-monitoring of academic performance: Effects among students with ADHD in general education classroom. *The Journal of Special Education, 39,* 145- 156.

Holifield, C., Goodman, J. Hazelkorn, M, & Heflin, L.J. (2010). Using self-monitoring to increase attending to task and academic accuracy in children with autism. *Focus on Autism and Other Developmental Disabilities,* 25 (4), 230- 238.

Kanani, Z., Adibsereshki, N., Haghoo, H.A. (2017). The effect of self-monitoring training on the achievement motivation of students with dyslexia. *Journal of Research in Childhood Education, 31 (3),* 430- 439.

Morgan, P.L. (2006). Increasing task engagement using preference or choice- making: Some behavioral and methodological factors affecting their efficacy as classroom interventions. *Remedial and Special Education, 27,* 176- 187.

New Jersey Department of Education (2016). New Jersey Performance Report. Retrieved Fromhttps://rc.doe.state.nj.us/report.aspx?County=07&District=4790&School=020&SchoolYear=2015-2016&SY=1516.

Parker, D. & Kamps, D. (2011). Effects of task analysis and self-monitoring for children with autism in multiple social settings. Focus on Autism and Other Developmental Disabilities, *26 (3),* 131- 142.

Rafferty, L.A. & Raimondi, S.L. (2009). Self-monitoring of attention versus self-monitoring of performance: Examining the differential effects among students with emotional disturbance engaged in independent math practice. *J Behav Educ (18),* 279- 299.

Ramsey, M.L., Jolivette, K, Patterson, D.P., Kennedy, C. (2010). Using choice to increase time on- task, task- completion, and accuracy for students with emotional/behavioral disorders in a residential facility. *Education and Treatment of Children, 33 (1).*

Reid, R. (1996). Research in self-monitoring with students with learning disabilities: The present, the prospect, the pitfalls. *Journal of Learning Disabilities, 29,* 317- 331.

Rock, M.L. (2005). Use of Strategic Self-monitoring to Enhance Academic engagement, productivity, and accuracy of students with and without exceptionalities. *Journal of Positive Behavior Interventions, 7 (1),* 3- 16.

Rock, M.L. & Thead, B.K. (2007). The effects of fading a strategic self-monitoring intervention on students' academic engagement, accuracy, and productivity, *Journal of Behavioral Education, 16 (4),* 389- 412.

Sparks, S.C. & Cote, D.L. (2012). Teaching Choice Making to Elementary Students with Mild to Moderate Disabilities. *Intervention in School and Clinic 47 (5),* 209- 296.

Todd, A.W., Horner, R. H., Sugai, G. (1999). Self-monitoring and self- recruited praise: Effects on problem behavior, academic engagement, and work completion in a typical classroom. *Journal of Positive Behavior Interventions, 1,* 66- 76.

Wadsworth, J.P., Hansen, B.D., Wills, S.B. (2015). Increasing compliance with intellectual disabilities using functional behavioral assessment and self-monitoring. *Remedial and Special Education, 36 (4),* 195- 207.

Wolfe, L.H., Heron, T.E., & Goddard, Y.L. (2000). Effects of self-monitoring on the on-task behavior and written language performance of elementary students with learning disabilities. *Journal of Behavioral Education, 10 (1),* 49- 73.