Self-Monitoring Using a MotivAider[R] During Independent Work Time to Increase On-task Behavior

Abstract

This study was conducted to investigate the effectiveness of using the self-monitoring intervention on students in a self-contained setting. These elementary students with varying disabilities were struggling to complete independent work in a timely manner. A multiple-baseline design was used to investigate a self-monitoring intervention using the MotivAider[R] as opposed to an auditory cue. Results show participants were able to increase on-task behavior. Implications suggest the use of more modern technology like the MotivAider[R] within classrooms can be beneficial to students and that self-monitoring is a successful intervention for students with disabilities.

Introduction

Many students with disabilities have difficulty maintaining on-task behavior and attending to instruction. This difficulty may increase the risk of performing below the student's achievement level and requiring repeated instruction, thus falling further behind. Research on students with a disability using self-monitoring techniques has shown an increase in on-task behavior among many other uses. Reid (1996) discusses the emergence of this strategy in his overview of the research in self-monitoring within this population. According to Reid (1996), researchers began to realize the potential of self-monitoring in the classroom around the early 1970s and effectiveness has now been established clearly among different ages, instructional conditions (i.e. individual, small and large group) and settings (i.e. self-contained, resource, and general education classrooms). In addition, Harlacher, Roberts, & Merrell, (2006) list self-

monitoring as a possible whole class intervention that can especially benefit those with attention deficit hyperactivity disorder (ADHD).

Much of the research on self-monitoring demonstrates the use of auditory cues or other prompts that can attract unwanted attention to the student. Only recently has a less obtrusive method been utilized and studied. In 2006 Amato-Zech, Hoff, & Doepke published the first study using what is called the MotivAider[R] to aid in cueing. The MotivAider[R] is a small, pager-like device that can be programmed to give a tactile prompt (i.e. vibration) on either a fixed or variable interval schedule. The device can be worn on a belt or waistband and can lessen any distraction or stigma possibly created by alternate cueing strategies. After Amato-Zech et al.'s research only a small amount of research has been published using the MotivAider[R] in an active role in the intervention process. This study continues and extends the previous research by using the MotivAider[R] to cue self-monitoring in a self-contained elementary classroom with three students with disabilities. The research question to be addressed is: What are the changes in the on-task behaviors when using the MotivAider[R] within a self-monitoring intervention?

Review of Literature

Use of MotivAiders[R].

In Joseph and Konrad's (2009), *20 Ways to… Have Students Self-Manage Their Academic Performance*, using a MotivAider[R] was the first strategy suggested for self-monitoring. These researchers along with Amato-Zech et al. (2006), Silla-Zaleski & Vesloski (2010) and others discuss the possible benefits of self-monitoring with a MotivAider[R]. Amato-Zech et al. (2006) recognize self-monitoring procedures with the MotivAider[R] can decrease dependence on external stimuli, which in turn helps with generalization. Many of these

researchers have found teachers believe this self-monitoring strategy is easy to implement, practical and helps the student take ownership of their behavior.

Silla-Zaleski & Vesloski (2010) utilized the MotivAider[R] as a self-monitoring cue when teaching a student with autism, obsessive compulsive disorder (OCD) and attention deficit hyperactivity disorder (ADHD) to decrease self-stimulatory behavior and vocal scripting. The MotivAider[R] was worn to cue the participant at the end of each timed interval. A differential reinforcement of other behavior (DRO) was implemented each time the participant did not portray the target behavior(s) during the interval. Identified limitations were the use of only one participant in the study and the absence of a functional analysis.

The Riley, McKevitt, Shriver, & Allen (2011) study shows another interesting way the MotivAider[R] has been utilized. These researchers were studying the effect of a fixed-time schedule of teacher attention on increasing on-task behavior. In this case, the teacher wore the MotivAider[R] to remind herself to deliver praise to the student for on-task behavior or to redirect off-task behavior. The teacher in this study stated that she "liked the intervention … it was easy to use (Riley et al., pg. 159)." She also reported that "using the MotivAider[R] cueing device reminded her to provide reinforcement to the students (Riley et al., pg. 159)." The data indicated a clear increase in on-task behavior during the intervention conditions. However, as discussed in the limitations, only four data points were provided in each condition of the ABAB withdrawal design and there was a lack of stability during baseline. Also observation times varied so the intervention was implemented during different types of instruction. The researchers recommend future studies to isolate implementation of the intervention and to utilize the strategy when students are having the most difficulty with on-task behavior.

Even though there were few studies of the use of a MotivAider[R] within the self-monitoring intervention, the studies were unanimous in their affirmation of the effectiveness of the device. They recommended future research focusing on other variables that were not controlled in the context of their studies.

Reinforcement vs. no reinforcement.

An additional topic of debate within a few research studies is the use of reinforcement for on-task behavior. Amato-Zech et al. (2006) did not include a reinforcer with their study and thus "indicated that self-monitoring can produce positive gains without backup consequences" and could possibly lead to "heightened awareness of a target behavior and subsequent behavior change (pg. 218)." Legge, DeBar, & Alber-Morgan (2010) sought to extend the research of Amato-Zech et al. (2006) but pointed out the lack of using reinforcement and provided such within their own study. Reinforcement was used for attaining a goal set to encourage the students to increase on-task behavior. Students would be rewarded with free time, computer or music time for staying on-task at least 80% of the time. However, Legge et al. (2010) also point out as a limitation, that future research should incorporate reinforcement before implementing the intervention as well. Utilizing reinforcement in each phase would have provided fewer variables and strengthened the identification of the self-monitoring strategy as the primary reason for the increase of on-task behavior.

Rooney, Hallahan, & Lloyd (1984) studied the self-monitoring of attention with the use of an auditory cue, but added an additional reinforcement phase to the research. They effectively showed that using self-monitoring and reinforcements increased on-task behavior more than with self-monitoring alone. They showed this through an ABAB-CBC design. However, the researchers speculated that the use of reinforcement may "inhibit internalization of the self-

monitoring routine (pg. 363)." Additionally, due to time constraints there was no phasing out of the intervention. Rooney et al. (1984) asked for future research to explore the ability to fade the intervention when reinforcement is involved. The question can then be asked, does providing reinforcement reduce probability of maintenance and generalization? Giving external reinforcements for an internalizing intervention may cause some confusion for the student and call into question the validity of the study.

Accuracy.

All studies reviewed determined on some level whether or not the students were providing accurate self-monitoring. Essentially researchers wanted to know, were the students actually on-task when they recorded that they were? None of the reviewed studies utilized videotaping as a means to determine accuracy. Amato-Zech et al. (2006) recorded accuracy with direct observation. Autry and Langenbach (1985) also used observers in the classroom, while looking at self-regulating behaviors and using several different control groups and phases. During each phase but the last, the students were provided with feedback on their accuracy. The study showed that even when no feedback was provided, high rates of accuracy were maintained. Even though most studies usually showed a high rate of accuracy, especially when reinforcement was involved, Rooney et al. (1984) point out in their study that procedural consistency was more valued than an accurate and honest evaluation. Perhaps the constant self-reflection and reminders give enough feedback to increase the on-task behavior.

Self-monitoring attention versus self-monitoring academic performance.

Throughout the research, self-monitoring is used in many ways. The two main distinctions are self-monitoring attention (SMA) and self-monitoring academic performance (SMP). SMA involves a student monitoring and assessing their attention to the task or on-task

behavior and requires a cueing of some kind. SMP entails self-assessing their own performance on an academic task such as number of problems attempted or accuracy. Graphing or charting the results is usually a part of SMP and it may or may not involve cueing (Reid, 1996).

Harris, Friedlander, Saddler, Frizzelle, & Graham (2005) produced a study that researched the difference between SMA and SMP on six students with ADHD in the regular education environment. They wanted to know which intervention would be most beneficial "with what students and for what tasks (pg. 146)." The study was derived from the lack of research on students with ADHD. On-task and spelling were the dependent variables chosen due to the research reviewed on students with learning disabilities (LD). To measure SMA, the students heard a taped tone that occurred at random intervals throughout the spelling session. Researchers chose a momentary time sampling procedure to measure on-task behavior (practicing or looking at the spelling list) and observed participants on a 3-second interval during the last ten minutes of each fifteen minute spelling period. Then after each spelling period, the child was taught to count the number of times the spelling words were spelled correctly to measure SMP. After counting, the students graphed their results.

"Both attention and performance monitoring have a positive impact on the spelling study behavior of the students with ADHD… all of whom were taking medications (Harris et al., pg. 154)." However, SMA showed an advantage for four of the six students on spelling practice. This may be because "ongoing, frequent, and immediate feedback tends to be important and effective for students with ADHD (pg. 154)." Yet when interviewed four of the six students disclosed they actually preferred the SMP condition. Also, other research on students with LD has shown a slight advantage for SMP. Determining which intervention works best may not have been fully answered, but Harris et al. (2005) contributed to the research that indicates both

methods are beneficial. The presence of so many variables within students with disabilities, in the tasks they are asked to perform and in ways the self-monitoring interventions are set up, suggests that the appropriate intervention choice should be tailored to the individual student.

Emotional and behavioral disorders.

While investigations on self-monitoring have been performed on students with ADHD and LD, Patton, Jolivette, & Ramsey (2006) sought to include those with emotional and behavioral disorders. Their article describes students with emotional behavioral disorders (E/BD) and illustrates how these students would be prime candidates for the self-monitoring type of intervention. Patton et al. (2006) then go on to provide the procedures for implementing a self-management plan for these students. An important aspect they identify is to "expect students to inaccurately report their appropriate or inappropriate behaviors (pg. 21)." Even though most research indicates fairly high rates of accuracy, Patton et al. (2006) state it is especially important not to reprimand students with E/BD for inaccuracy, but to utilize that occurrence as a teachable moment.

Patton et al. (2006) advise teachers to support at first but to fade out encouragement in order to help move the students toward intrinsic motivation and independence. They also describe uses for self-management strategies such as "writing quality and quantity, math fluency, engaged time, on-task behavior, aggressive behaviors and social behaviors (Patton et al., pg. 21)." Often students with E/BD are at a higher risk of falling short of their maximum academic and social potential. Patton et al. (2006) show how utilizing self-management strategies including self-monitoring can increase ownership of behavior by getting the student involved.

Getting students with any kind of disability involved in monitoring and managing their own behaviors can increase productivity, work quality and even self-determination. This kind of

intervention can facilitate an easy transition for students to become more involved in their own IEP process. Students can begin to set goals, monitor their progress and evaluate that growth (Joseph and Konrad, 2009). Self-monitoring with a small device like the MotivAider[R] is one step in the process that can possibly assist students with disabilities toward these highly valuable abilities.

Relating to This Project

The current literature has been an invaluable reference for determining the path of this research. This research project was an extension of and closely resembled the study by Legge et al. (2010). The study by Legge et al. (2010) extends the research on self-monitoring while using the MotivAider[R] as a cueing strategy. In this study, three elementary students with disabilities in a self-contained setting, used the MotivAider[R] as a cue to self-monitor their on-task behavior during either independent work time or group instruction.

Even though this study extended the research done by Legge et al. (2010), there was influence from other articles that discuss the use of the MotivAider[R]. The first study using these devices by Amato-Zech et al. (2006) provides a good example of using no reinforcement within the study. Legge et al. (2010) used a multiple-baseline design and was able to show effectiveness. This study does not include reinforcement or a reinforcement phase. Each study involving the use of the MotivAider[R] also specifically describes training that takes place for students to learn how to use the MotivAider[R] and how to self-record. This information was utilized when training the students in this study.

The research by Rooney et al. (1984) shows a different design with an additional reinforcement condition. This study also illustrates the obtrusive way to cue students by using headphones and a tape recorder for each student. The students in the research by Rooney et al.

(1984) were in a regular education setting. It is possible there was a stigma attached to using the headphones and it could have affected the acceptance of the system by the students with disabilities and therefore the usefulness of the system. Thus, in comparison to the research provided using the MotivAiders[R], auditory prompting seems too conspicuous and awkward. Use of smaller, adaptable technology available is unobtrusive and reflects the progress of our times.

The work by Patton et al. (2006) is also beneficial to this study because one student involved has a secondary area of eligibility: serious emotional disability (SED) similar to emotional/behavioral disorder (E/BD). Patton et al. (2006) describe several characteristics which students with EB/D manifest that match certain characteristics of the student in my study. For example, this student does portray "inappropriate types of behavior or feelings under normal circumstances" and "a general pervasive mood of unhappiness or depression (pg. 14)." The advice given was heeded, such as to expect inaccurate reporting of behavior, and to treat the inaccuracy of the self-monitoring as a teachable moment. On-task behavior that this student can easily identify was a focus. Encouragement was faded in order to increase intrinsic motivation.

The limitations of these studies have been beneficial as well. Implementation of the intervention should take place around the same time of day and in the same place for each student involved in order to reduce other variables. This helps to further identify the effectiveness of the MotivAider[R] in cueing self-monitoring. Accumulating substantial data for each intervention phase was the goal and implementing the intervention was held until baseline leveled out (Riley et al., 2011).

The article by Joseph and Konrad (2009) also provided a website with self-management software that could be downloaded at no cost. Through this website some self-monitoring

recording forms were found that guided the choice of what to use. The form needed to be explicit and clear for the students to use.

Method

Participants.

The participants in this study were three males who were determined to be eligible for special education services under the categories of: Speech/Language Impairment and Serious Emotional Disability, Specific Learning Disability, and Intellectual Disability-Mild. All participants require Speech/Language as a related service. These participants were selected out of the self-contained class in a public elementary school due to a repeated inability to complete independent desk work within a reasonable amount of time. All three participants are from a lower socioeconomic background documented by their free and reduced lunch status. Students were part of a self-contained class of eight including those in second, third and fourth grades. The elementary school houses three self-contained classrooms along with a Developmental Kindergarten program.

The first participant, Peter, was ten years and seven months of age and scored a 56 Full Scale IQ on the *Weschler Intelligence Scale for Children, 4th Edition* and is eligible for special education services under the category of Intellectually Disabled- Mild. As a fourth grader, Peter performs at a second grade level for math and language arts. Peter remained in regular education with resource support until the current school year. Peter continues to mainstream for a majority of his day and is generally compliant when asked to do something. He is a loving child and usually initiates hugs to the teacher and assistant upon arrival and departure to his classroom. Peter also is able to express himself through sentences and can ask for help appropriately.

The second participant, Mark, was eight years and eleven months and turned nine during the study. His area of eligibility is Speech or Language Impairment with Serious Emotional Disability as a secondary category. As a second grader, Mark reads at a kindergarten level and tests in the kindergarten to first grade level in mathematics. On the *Stanford-Binet Intelligence Scales, 5th Edition* Mark scored a 66 full-scale IQ and a 77 non-verbal IQ. Mark can easily become obsessed with a topic and this can be a catalyst for off-task behavior. He can speak in sentences with extreme articulation problems, and is often misunderstood by strangers. Mark will also frequently shout out across the room that he either is done or needs help with his work.

The third participant, Louis, was eight years and nine months of age and qualifies for special education under the category of Specific Learning Disability in the areas of listening comprehension and oral expression. Louis scored a non-verbal full scale IQ of 83 on the *Leiter International Performance Scale-Revised*. Louis is in the second grade and reads at the kindergarten to first grade level and performs mathematics at the first grade level. Louis communicates in an unconventional manner by using one to two word phrases, using gestures, facial expression, and some sign language. Although, he tends to depend on verbal expression, Louis cannot communicate in sentences that others can comprehend. Louis also has extreme difficulty attending to task, poor motor planning and time management skills.

All participants receive instruction in the self-contained setting with the exception of art, music and physical education. Inability to remain on-task is seen throughout each setting, especially for Mark and Louis. The participants receive instruction on vocabulary development, reading comprehension, sentence completion, spelling and language arts, each on their own level. Within mathematics Mark and Louis work on learning numbers 1-100, sequencing numbers, counting by twos, fives, and tens, simple addition and subtraction, time and money,

each at his own level. Peter works more on higher order number concepts, number patterns, place value, higher addition and subtraction, time and money.

A request for review of human subjects research was sent to the Internal Review Board. The study was approved with regard to ethical standards. Permission was also received from parents for their child to participate in the study and to be recorded on camera.

Dependent Variable

The dependent variable in this study was on-task behavior. On-task behavior was defined as "sitting in seat," "eyes on paper" and "doing work." All three of these needed to be met in order to be considered on-task and receive a "+." Putting a completed assignment away and getting the next was scored as on-task unless the participant got out of his seat to do so. Each student has their own box of crayons, scissors, glue, erasers and pencils in one of their baskets. At times during the study, the teacher would help the students put all materials on the desk before they began to work independently. Students were asked to self-monitor their on-task behavior and were given a sheet with picture cues of each of the discrete behaviors named above.

Data Collection

Data was collected daily during the first 10 minutes of independent desk work. Each student sat in one of two desks on the right side of the classroom. This space is designated as independent work space and has a shelf that holds the students' baskets directly behind it. During the study other students may or may not have been present in the same space, but there was never anyone directly in front of the student being observed. Videotaping served as a means of observation. A camera was placed on a shelf just across the independent work desks and recorded the students as they worked. This enabled the classroom teacher and assistant to continue working with other students in the classroom. Most of the taping occurred during the

morning time before breakfast. However, students have a checklist of seven activities they must complete each day in order to receive a "dollar" for their work completed. If all of these activities are completed by the end of the day, the student receives a dollar and the dollars can be traded in for special prizes on Friday. Therefore *when* a student sits down to do independent desk work depends on the student's personal preference, the availability of computers and/or other factors. Yet as previously stated most of the time students chose to do independent work in the morning before breakfast. The other times of the day were after morning group and a few times in the afternoon. Due to having one camera, the teacher tried to help stagger the students who were participating in the study. This often happened naturally as they each rode different buses and often chose desk work first. Also, the participants were told to alert the teacher before they sat down to do their desk work so that they could be recorded.

Data was recorded using momentary time sampling at one-minute intervals. The teacher coded the data for each of the three students. The observation session began during baseline when the recorder was turned on and during the intervention phase, when the MotivAider[R] first vibrated. Data was recorded on each of the three students for 23 days total with the exception of Louis, who was absent once during the study. During the intervention phase data was recorded each time the MotivAider[R] cued the student to self-monitor, every minute for ten minutes.

The teacher attempted to control task difficulty by setting up a rotation of work for each student each day. This rotation helped to ensure task difficulty was not a variable for on-task behavior. However, Mark needed occasional assistance with his work. (Example: a word search of spelling words for the week. Later the teacher adapted these sheets.) It is not uncommon for students to clarify directions or ask for help if they are stuck on certain words or questions. If a

teacher was helping the student at the time the MotivAider[R] vibrated, this was scored as on-task. During the last three days of the study a maintenance phase was implemented. The students were recorded doing their independent desk work without receiving the intervention. Maintenance phase lasted for only three days due to time limitations.

Reliability

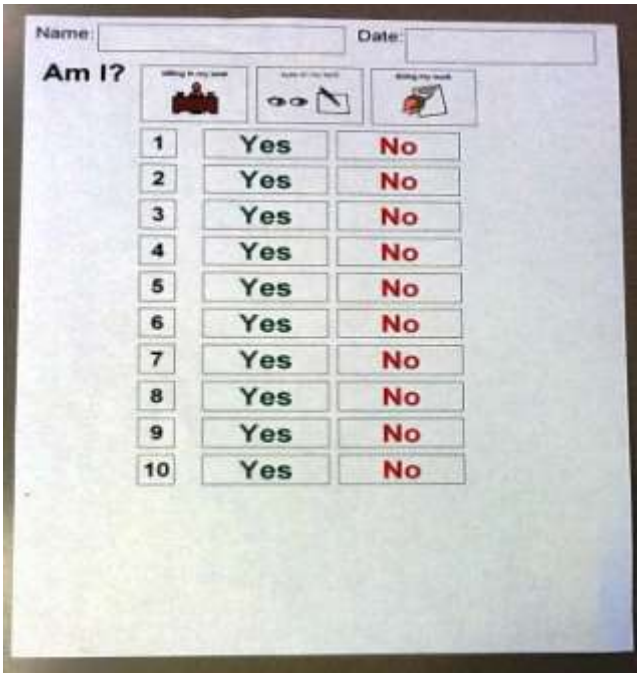
Reliability was established through the use of a second observer coding data. The school psychologist was given videos of the students throughout the study and instruction on what "on-task behavior" entailed. She then coded the data in the same way as the teacher using the same form. Determining interobserver agreement began by adding up the number of disagreements and agreements over 21 separate observations. All of the participants were represented in the observations performed by the second observer. Interobserver agreement was established by dividing the number of agreements (183) by the number of agreements plus the disagreements (183 + 27) and multiplying by 100. Observers were in agreement 87% of the time.

Independent Variable

During each participant's intervention phase, the participant was given a self-monitoring form created by the teacher using Boardmaker Plus[C] software. The participant received instruction on how to self-monitor behavior and record it on the form. The form had a space at the top for name and date, and then just below had three pictures. The pictures were of 1) sitting in seat, 2) eyes on paper, and 3) doing work. Under the pictures were boxes numbered from one to ten. Beside each box were a "yes" (in green) and a "no" (in red) box. (See Figure 1.) Students usually got the sheet in color but on occasion got a black and white copy. Students were also given a MotivAider[R] set at one-minute intervals. Students were instructed to think about the three pictures each time the MotivAider[R] vibrated and if they were doing each of the three

things they should circle "yes." If not, they should circle "no." The recorder and MotivAider[R] were turned on by the teacher and the students were reminded of what to think about. The MotivAider[R] then vibrated at every one minute interval and the teacher came back after ten minutes had past to turn off the camera and take up the MotivAider[R] and the self-monitoring form.

Figure 1. Self-monitoring form for students



Experimental Design

A multiple baseline experimental design was chosen to show the effectiveness of the self-monitoring intervention. The students' names were randomized to receive the intervention by using an online randomizer found at the website http://www.randomizer.org/form.htm. They were listed as Peter, Louis and Mark and were randomized as Peter, Mark and Louis. Therefore, Peter was the first to receive the intervention followed by Mark and then Louis. Baseline data was collected for five days.

Results

The graphs below show the results of on-task performance from data collected. The data prior to the first blue line is baseline (without any intervention). Data to the right of the first blue line represents the intervention phase. The section to the right of the second blue line represents the maintenance phase where the intervention was removed.

Peter's on-task behavior during baseline ranged from 50% to 80% with a mean of 62%. When self-monitoring using the MotivAider[R] was introduced, Peter's mean increased to 86% with a range of 60% to 100%, an overall average increase of 24%. During the maintenance phase without the intervention, Peter's mean of on-task behavior moved down to 80%. Peter also showed a level change between baseline and intervention going from 70% to 90% of on-task behavior.

Mark's baseline data shows an overall mean of 49% on-task behavior with a range of 0% to 70%. Mark's data shows high variance during the baseline phase. However during the intervention phase, Mark's overall mean increased to 82% with a range of 60% to 100% and variance decreased from a range of 70% to 40%. The difference between the intervention mean and baseline mean was 33%. He also had a drastic level change from baseline to intervention going from 0% to 100% with the introduction of the intervention. Mark's mean during maintenance was 63% showing a decline without the MotivAider and self-monitoring intervention.

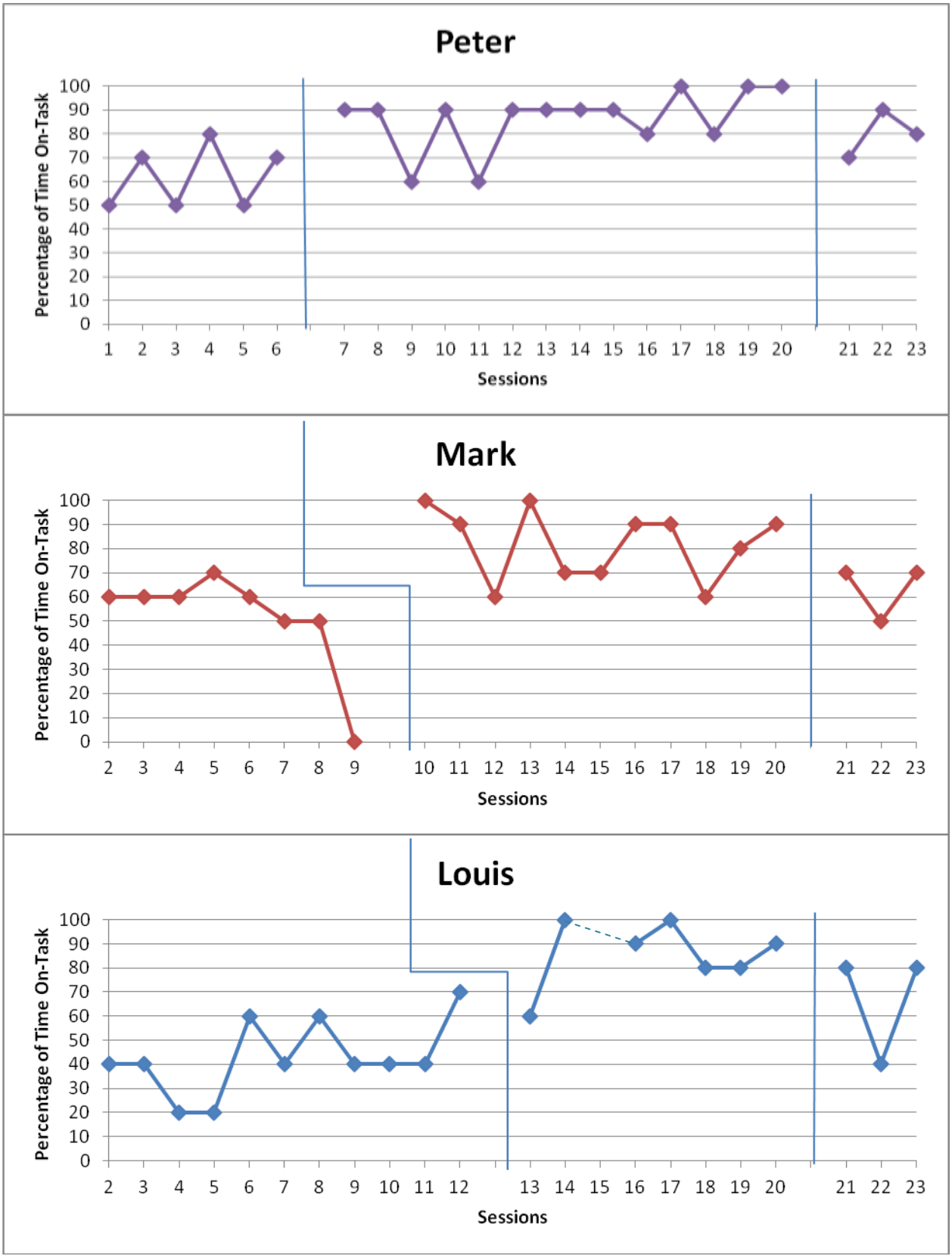
Louis began the study with a baseline mean of 42% ranging from 20% to 70%. Louis was absent one day during the intervention phase, but he showed an overall increase in his on-task behavior. The mean of the intervention phase was 86% with a range of 60% to 100%. This

was an overall increase in mean of 44%, higher than both other boys. Louis showed a decrease in mean during the maintenance phase with a mean of 66%.

Figure 2. Average (mean) performance of on-task behavior.

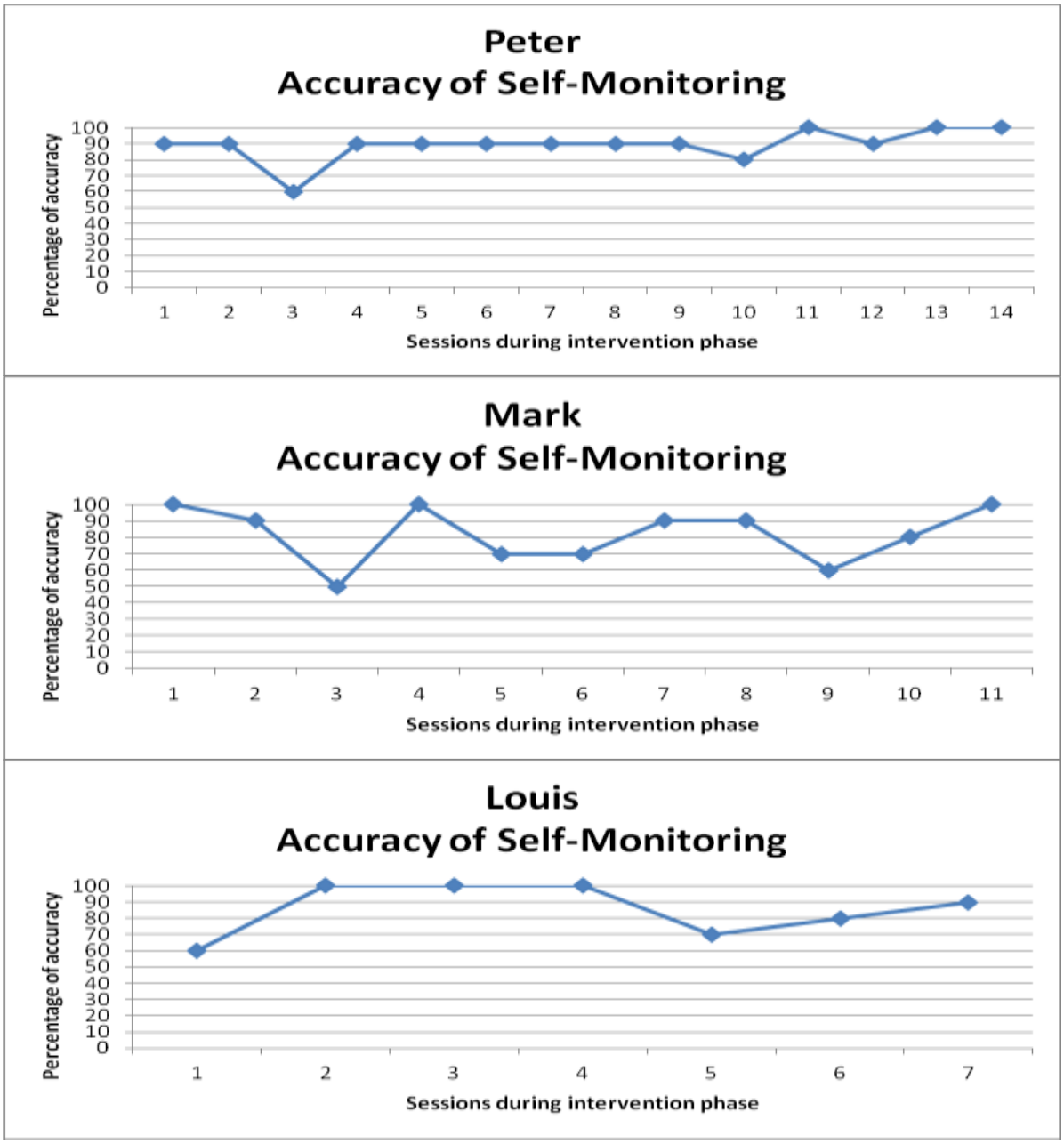
Name	Peter	Mark	Louis
Baseline Mean:	62%	49%	42%
Intervention Mean:	86%	82%	86%
Increased by:	24%	33%	44%

Figure 3. Performance in on-task behavior



Data was also collected for accuracy of self-monitoring and is shown in the graphs below. Accuracy of self-monitoring tended to mimic that of the intervention phase due to the students usually rating themselves on-task for 100% of each interval. Throughout the study, and with some guidance from the teacher, the students began to understand more of when they were not on-task and reflected it more truthfully.

Figure 3. Accuracy of self-monitoring on-task behavior



Discussion and Conclusions

Through the evidence gathered the intervention of self-monitoring cued with a MotivAider[R] was effective for each of the three students in the study. Conclusions drawn from the data collected in each phase show a functional relationship between the dependent and independent variables. The effects were socially significant in that the three boys began to complete independent desk work in a more efficient manor, with less time wasted. The students learned to gather all materials needed before they sat down to do desk work in order to not get up, thus helping to increase their time management skills. Each of the boys enjoyed using the MotivAider[R] as a tool to cue the self-monitoring although novelty usually wore off around the third day of their intervention. The intervention was relatively easy to implement and only required a few moments of the teacher's time before each student began their desk work. The brief time was used to turn on the camera, give the MotivAider[R] and self-monitoring form to the student, and remind him of what he was supposed to monitor.

One student, Mark, used the MotivAider[R] as a distraction in some instances. He would either watch the last few seconds of the countdown or put the MotivAider[R] on another student's desk and watch it vibrate (both resulting in off-task data). This type of distraction rarely occurred and tapered off with little teacher prompting. The other two students were also seen checking the MotivAider[R] at times. Peter would sometimes work hard for the minute interval, circle that he was on-task when the MotivAider[R] signaled, and then spend 2-5 seconds scanning the room to see what was going on before getting back to work. This behavior tapered off as well, without teacher prompting.

This study supports and contributes to the body of research that demonstrates the effectiveness of using self-monitoring interventions with students with disabilities. Data also

supports the previous authors' notion that accuracy of self-monitoring is not essential for the intervention to be successful. The practice of continual reflection of on-task behavior on a timed interval is the essential component to triumph over inattentiveness.

Implications for Practice and Additional Research Needs

The implication of this study is that self-monitoring, an easy to use, effective intervention, helps students gain a greater internal locus of control. Students may begin to internalize the notion that they are responsible for completing their work in a timely manner. With enough practice, the hope is that these students will carry this newly acquired behavior throughout other avenues of their life such as doing homework and participating in group activities. Understanding that each of us is in control of the effort we put forth can help students in many aspects. This study demonstrated that self-monitoring using a MotivAider[R] can help students increase attentiveness.

Limitations of this study were that no data was collected on task completion or accuracy of performance. The students did become more successful at focusing on their work, but it is not shown if this improved their ability to complete assignments accurately. Future research is needed to explore and highlight these additional possible effects of self-monitoring.

Also, the setting in which the students completed independent work was not controlled. Usually, data was collected in the morning when students were arriving, greeting each other, and so forth. Additionally, discussion among the teachers, instruction of another student, announcements over the loud speaker, other people walking in the room (bus drivers, assistant principal, etc…) and other students' close proximity could have influenced on-task behavior. The reality is that this setting is more authentic to what normally happens in day-to-day life when

work needs to be done. However, without this experimental control, the demonstrated effectiveness of the self-monitoring intervention is weaker.

In summary, this study helped to further the research on self-monitoring interventions used in the self-contained classroom with students with disabilities. Self-monitoring can and does help students with special needs to stay on-task during independent work time. An efficient, effective way to manage on-task behavior has been proven to help students become more successful at attending to the task at hand. Also, the discovery of the MotivAider[R] can have a lasting impact on this classroom. Future use of the MotivAider[R] can be used in the classroom to cue self-monitoring of on-task behavior during group activities. Additionally, this easy-to-use and unobtrusive device can be used to remind other students to use the restroom, help the teacher to deliver praise, and/or to prompt students to transition.

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