Effects of a Self-Monitoring Strategy on Independent Work Behavior

by

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A Thesis Presented in Partial Fulfillment
of the Requirements for the Degree
Master of Arts

ARIZONA STATE UNIVERSITY

December 2010

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has been approved

October 2010

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ABSTRACT

The following study evaluated the effectiveness of a self-monitoring strategy on independent work behavior. The three subjects were in first grade, seven years old, identified with mild mental retardation (MIMR), and had an Individualized Education Plan (IEP) with targeted functional academic and behavior goals. The purpose of this study was to investigate the effect of a self-monitoring strategy on on-task independent work behavior and task completion. The research sought to determine whether or not a self-monitoring strategy would affect on-task independent work behavior and task completion. A multiple baseline across subjects design was used. Data were collected using a frequency count of off-task behavior. The self-monitoring strategy was found to be successful with all three subjects in the study. Overall, the subjects demonstrated a decrease in off-task behavior during independent work time after the intervention was introduced.

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Chapter 1

Introduction

General Statement of the Problem

This study examined the effect of a self-monitoring strategy on

independent work behavior in students with identified MIMR being educated in a

self-contained setting. The research focused on the effects of a self-monitoring

strategy for on-task behavior during independent work time. An intervention was

implemented that included the use of a strategy in which subjects self-monitored

their behavior, paired with positive reinforcement. This study was based

primarily on a classroom intervention and direct observation in a self-contained

classroom in Chandler, Arizona. Chapter One of the study presents the problem,

describes its significance, and presents an overview of the methodology used.

Context of the Problem

Off-task behavior can negatively impact the success of people with

disabilities in various settings, including work, school, and other areas of

community involvement. In one observation of a work program site, participants

with disabilities spent 70% of observed time engaging in off-task behavior

(Parsons, Rollyson, & Reid, 2004). Off-task behaviors include, but are not

limited to: distracting other students, attempting to gain the attention of

instructors, sitting idly, leaving the designated work space, engaging in self-

stimulatory behavior, or engaging in destructive behavior.

Significance of the Study

   Off-Task Behavior

   Remaining on-task during independent work time at school is a struggle for many students. Staying on-task can be even more difficult for students with disabilities. Students with disabilities can be distracted by other stimuli in the environment or frustrated by the level of difficulty of the task they are to complete independently. During independent work time, students with disabilities may engage in off-task behavior. According to Gickling and Amistrong (1978), behaviors that are irrelevant to the current academic task are considered off-task. Off-task behaviors can take various forms: distracting other students, attempting to gain the attention of instructors, sitting idly, leaving the designated work space, engaging in self-stimulatory behavior, or engaging in destructive behavior. Additionally, when students with disabilities are prompted to return to the academic task, off-task behaviors increase (Sanders, McEntee, & Saunders, 2005).

   A potential cause of off-task behavior during independent work time is the academic level of work required by the student. Independent work that includes 90% known material enhances the duration of on-task behavior (Burns & Dean, 2005). Another cause of off-task behavior is the level of detail included in the instructions given to the student. Students that are given general instructions, rather than specific instructions, are more likely to engage in off-task behavior.

Giving specific and descriptive instructions to a student increases the frequency of task completion (Bouxsein, Tiger, & Fisher, 2008).

Mental Retardation

Mental retardation is a condition that encompasses both an intelligence quotient (IQ) component and adaptability component. People with mental retardation have an IQ of at least two standard deviations below the mean IQ 100, an IQ below 70. Additionally, people with mental retardation have deficits in adaptability.

Students with mental retardation struggle to understand and identify the functions of their behavior (Crawley, Lynch, & Vannest, 2006). Students with mental retardation or other cognitive disability benefit from learning specific self-management strategies to increase on-task behavior, as their cognitive delays interfere with the ability to self-manage naturally. The lack of self-management skills inhibits students with mental retardation from appropriate independent functioning and integration into the community (Selznick & Savage, 2000). Hume and Odom define independent functioning as "on-task engagement in an activity in the absence of adult prompting" (2007, p. 1166). Conversely, learning to self-manage behavior can effectively enhance independent functioning in the community.

Remaining on-task during independent work time is a critical component of student success in the classroom. Students who demonstrate on-task behavior during independent work time can learn to generalize this skill to other academic

areas. To maintain high standards for all students, including students with MIMR and other disabilities, it is important to teach all students on-task behaviors during independent work time. When students work independently on-task, teachers have opportunity to work one-on-one with a student, assess a student, or pull a small group of students for more intense instruction. A self-monitoring strategy that successfully increases on-task behavior during independent work time would benefit the individual students, teacher, and entire classroom.

Overview of Methodology

A multiple baseline across subjects design was used in this research. The multiple baseline design is widely used in applied behavior analysis. A multiple baseline design allows teachers and clinicians to manipulate a variable across subjects, settings, and behaviors. In a multiple baseline across subjects design, one behavior is targeted for two or more subjects in one setting. After a steady baseline has been established, the independent variable is implemented with one subject. As this occurs, baseline data continues to be collected with other subjects. This design is often used because teachers and clinicians frequently encounter more than one subject with a problem behavior (Cooper, Heron, & Heward, 2007).

Chapter 2

Background Literature

Self-Management

      Classroom goals for students that include working independently, self-managing behaviors, and finding motivation in natural consequences are important (Hume & Odom, 2007). According to Koegel, Harrower, and Koegel (1999), one way to increase independent work is to teach students self-management strategies. Mitchem and Young (2001) created a class wide peer-assisted self-management program in a classroom setting. They found that after training the students were able to self-manage. Both teacher and students found the program valuable in improving the classroom climate and the program was successfully generalized to other classrooms. Additionally, self-management strategies are effective beyond the classroom setting in teaching daily living skills (Hume & Odom, 2007).

      Self-control and self-management interventions have many benefits. Society values independent actions. In the classroom, a teacher may not be able to manipulate all external controls to change behavior. In the classroom, when a student self-manages, the teacher is able to spend more time focusing on instruction. Students who self-manage are more likely to behave independently and appropriately without adult supervision. Finally, self-management encourages more natural behavior changes than relying on external influences (O'Leary & Dubey, 1979). Students who self-manage have higher achievements

in the classroom and feel a sense of satisfaction toward their work (Lapan, Kardash, & Turner, 2002). Rosenbaum and Drabman (1979) emphasize the importance of instructing students to self-manage effectively.

Self-Monitoring

One self-management strategy is self-monitoring (O'Reilly et al., 2002). Self-monitoring is a component of Positive Behavioral Intervention (Ganz, 2008). Self-monitoring occurs when students pay attention to a specific behavior, record the occurrences of the target behavior, and reward themselves for improvements (Ganz, 2008; Soares, Vannest, & Harrison, 2009). Used independently, self-monitoring can be effective in changing target behavior (Mace & West, 1986). However, self-monitoring is most effective when coupled with either self-evaluation or positive reinforcement (Mitchem & Young, 2001). Self-reinforcement is effective when used alone, but when added to other procedures, it is far more effective (O'Leary & Dubey, 1979). With appropriate training, students become capable of self-monitoring in natural settings. Ganz and Sigafoos (2005) researched the effect of self-monitoring in a vocational setting with adults with both mental retardation and autism. They found that this strategy increased both independent work and verbal requests.

Self-monitoring is also effective in decreasing self-injurious behavior and tantruming in students with autism. Self-monitoring is appropriate for the classroom because it not only places responsibility in the hands of the students, but also decreases the amount of direct contact with the teacher (Soares et al.,

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2009). Self-monitoring strategies have been effectively utilized with a single

student with mild mental retardation (Crawley et al., 2006), with students with

emotional disabilities (Mooney, Epstein, Reid, & Nelson, 2003), across multiple

classroom settings (O'Reilly et al., 2002), and with adolescent students with brain

injury in math class (Selznick & Savage, 2000). It is important to determine if

these findings can be replicated to a classroom of students with MIMR. Although

research has shown that self-management strategies are effective in reducing

inappropriate behaviors, self-management strategies have not been broadly

researched in students who demonstrate both inappropriate, off-task behaviors and

have cognitive disabilities (Crawley et al., 2006).

Self-monitoring is both easy to implement and rewarding for teachers.

Students are interested in participating in self-monitoring because they see the

potential rewards. Teachers often have easy access in their classrooms to

necessary materials for self-monitoring. Minimal training is required for teachers

to acquire skills to implement self-monitoring in a classroom (Ganz, 2008). It is

critical that the instructor effectively instructs the student to self-monitor.

Instructors must verify that the student can correctly implement the self-

monitoring strategy (O'Leary & Dubey, 1979). Mace and West (1986) suggest

that further research in self-monitoring include reinforcement contingent on

appropriate implementation of the self-monitoring intervention. Additionally,

instructors should make clear the relationship between the self-monitoring

intervention and its consequences. Self-management interventions can be

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successful in students in preschool through high school; therefore, the components of the intervention should be age-appropriate.

A sequence of steps is recommended to effectively implement self-monitoring in a classroom, based on the work of Ganz, Cook, and Earles-Voolrath (2007) and Rankin and Reid (1995). First, the instructor selects a target behavior and operationally defines the behavior. Second, the instructor and student discuss the purpose and benefits of self-monitoring and reinforcements available. Third, the instructor determines a method to measure the target behavior and collects baseline data. Fourth, the instructor determines an age-appropriate way for the student to self-monitor. Additionally, a criterion for reinforcement is determined based on baseline data. This criterion should be set initially so that the student frequently receives reinforcement for self-monitoring. Reinforcement fades as the student increases appropriate self-monitoring. Fifth, the instructor teaches the student to self-monitor, using role playing and modeling. Sixth, using scaffolding, the instructor and student begin to self-monitor. It is critical that the student receives the reinforcement each time (s)he reaches a given criterion. This validates self-monitoring to the student. The instructor should continue to monitor periodically the student's self-monitoring. Once a student effectively self-monitors a behavior, the student can learn to self-monitor additional target behaviors.

On-task behavior during independent work time is a struggle for many students, including students with disabilities. Stimuli in the environment and

difficulty of the task can impede a student's ability to remain on-task. It is difficult for students with MIMR to identify functions of their behavior. The use of self-management strategies can help students with MIMR take ownership of their behavior. One type of self-management is self-monitoring. When students self-monitor, they identify a behavior, record occurrences, and reinforce improvements. Self-monitoring is most effective when used with positive reinforcement. Teachers can implement self-monitoring strategies in a classroom setting with ease.

The purpose of the study was to examine the effect of a self-monitoring strategy on independent work behavior in students with identified MIMR being instructed in a self-contained setting. A self-monitoring intervention was implemented to determine its effects on on-task independent work behavior.

Chapter 3

Research Design and Methodology

Subjects

Three children participated in this study. Each was seven years old,

identified with MIMR, and had a current IEP with functional academic and/or

behavior goals. Table I provides descriptions of the participants. Each participant

received special education services from the researcher in a self-contained setting

for primary students with MIMR.

Sally, subject one, is a seven-year-old female with an intelligence quotient

(IQ) of 64 as measured by the Pictoral Test of Intelligence, Second Edition (PTI-

II). She frequently rushes through work without regard to detail. She wants to be

the first student to finish any given assignment. Rather than taking responsibility

for herself, she focuses on other students' behavior and task completion. She

requires constant verbal prompts to stay on task. She responds to verbal

reinforcement and recognition of her achievements.

Elise, subject two, is a seven-year-old female with an IQ of 62 as

measured by the Developmental Profile, Second Edition (DP-II). She is easily

distracted by her peers and surroundings. She frequently leaves her seat, engages

the teacher or her peers in conversation, and manipulates classroom supplies. She

requires frequent verbal prompts to stay on task, as well as reinforcement for

completing work.

Jose, subject three, is a seven-year-old male with an IQ of 64 as measured

by the PTI-II. He frequently zones out during independent work time. He

engages in conversations with peers and questions the teacher. When given a

task, he waits for individualized instruction before beginning the task. He

requires prompts to return to the task. He responds well to verbal and visual

reinforcement.

Design

A multiple baseline across subjects design was used in this research.

Baseline data was collected for at least five days for each subject. Sally received

the treatment while baseline data continued to be collected for Elise and Jose.

When Sally moved from the instruction phase to the independent work phase,

Elise received the treatment. Baseline data continued to be collected for Jose.

When Elise moved from the instruction phase to the independent work phase,

Jose received the treatment. Data were collected for all three subjects during the

treatment and independent work phases. After all three subjects completed the

independent work phases, the researcher ended data collection and analyzed the

data.

The dependent variable in this research is on-task behavior. On-task

behavior is operationally defined as engaging in a designated academic task for

more than 180 consecutive seconds. On-task behavior includes staying in the

designated work area, using designated work utensils, and working independently.

On-task behavior does not include leaving designated work area, sitting in

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designated work area idly, talking to other students or adults, engaging in self-stimulatory behavior, or engaging in destructive behavior.

The independent variable in this research is the self-monitoring intervention program. This program incorporates the use of a visual cue to prompt subjects to self-monitor their progress on work completed during a designated independent work time. Figure 1 shows an example of the visual prompt.

Data Collection Methods

Frequency count was used to collect data for off-task behaviors during independent work sessions. The researcher kept track of the frequency of off-task behaviors, noting each occurrence during each session. This data collection method effectively illustrates the frequency of off-task behavior for each subject during each independent work session. A frequency count was used for the three subjects simultaneously during each independent work session.

The researcher used a chart to collect data; see Figure 2. The researcher used one chart, for each student, every day. The researcher inputted the start time for independent work for each subject. At 8:50 A.M., when the independent work session began, the researcher tallied all occurrences of off-task behavior, making a hash mark in the line on the chart corresponding to the specific behavior, until the subject finished independent work. Once the subject finished independent work, the researcher inputted the end time for independent work.

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Duration recording was also used to show the duration of each subject's independent work session. The researcher collected the start and completion time for each subject's independent work.

The researcher collected baseline data for at least five sessions or until a stable trend was established. A stable trend was defined as an increase of ten or more off-task behavior occurrences in a minimum of three sessions. Following baseline, subjects were taught the self-monitoring intervention. During this time, data collection continued. Subjects were either at baseline or intervention during data collection in each independent work session. Data were collected for each subject during baseline, instruction, and intervention. The data displayed both the frequency of off-task behavior and the duration of independent work time during a given independent work session. Results were recorded and plotted on both a graph and a standard Celeration chart. These data representations displayed the effect of the self-monitoring strategy on on-task independent work behavior.

Both the researcher and a paraprofessional in the classroom collected data throughout the study. A paraprofessional in the classroom was trained on the operational definitions of target behaviors and data collection methods. The researcher and paraprofessional simultaneously collected data two days out of each week. Both observers collected data for 40% of total sessions. Total count inter-observer agreement between the two observers for the study was calculated at 96.9%.

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A paraprofessional had a copy of the instruction script and observed instruction during the instruction phase. As the researcher instructed the subjects, the paraprofessional verified that the researcher followed the appropriate steps necessary to effectively implement the treatment thus maintaining fidelity to treatment.

Materials

The following materials were used to implement the intervention. Subjects self-monitored progress on a self-monitoring chart. See Figure 1. The researcher used a script to instruct subjects during the treatment. See Appendix B. A visual cue to self-monitor was placed on all independent work. This cue was a one-inch picture of a cartoon character, selected by each subject individually in a multiple-stimulus procedure without replacement preference assessment. Sally and Elise selected a Dora the Explorer cue. Jose selected a SpongeBob Squarepants cue. See an example of this cue on the self-monitoring chart in Figure 1. A data collection chart was used to collect frequency of off-task behavior and duration of independent work completion. See Figure 2.

Setting

The study was conducted in the subjects' self-contained classroom, during regular school hours. Independent work sessions occurred every day from 8:50 A.M. – 9:10 A.M. Instruction occurred from 10:15 A.M. – 10:45 A.M. The class consisted of eight students in first and second grades, one teacher, and two

paraprofessionals. The researcher instructs these students daily and knows each student's individual needs and motivators.

Procedure

The three subjects selected were unable to begin an independent work task and remain on-task for the duration of the independent work session, which occurred daily from 8:50 A.M. – 9:10 A.M. Each subject was given the intervention of a visual cue to self-monitor during completion of independent work. In the study, subjects were shown a visual cue to self-monitor behavior during independent work time. This cue was a one-inch picture of either SpongeBob Squarepants or Dora the Explorer. This visual cue appeared at the end of a line of work.

Independent work varied by subject, but the format was the same. Each worksheet had five tasks to complete (count a set of items, find and circle a designated letter, count money, etc.)   All work was at the independent or 95% accuracy level of difficulty. Each subject's work had embedded visual cues to self-monitor, while working independently, at the end of each task. The visual cue, a one-inch cartoon picture, was placed at the end of each line of work. The visual cue to self-monitor varied by subject interest but in no other way. A multiple-stimulus procedure without replacement preference assessment was given to each subject to determine the most motivating cue (DeLeon & Iwata, 1996). See Figure 3 for an example of student work with the visual cues.

The first set of independent work had five visual cues, one after every line of work. After the subjects successfully completed independent work for three consecutive sessions and improved on-task behavior, they moved to the second set of independent work. This set had three visual cues, one after every other line. The following set of independent work had two visual cues. In the final set of independent work, one visual cue was found at the end of the worksheet.

Phase one of the intervention included instruction. During instruction, the researcher used a script to instruct the subjects how to self-monitor. The researcher defined the terms self-monitoring and self-monitoring chart. The researcher instructed and modeled the following procedure: complete a task on the worksheet, identify the visual cue to self-monitor, take a sticker and place it on the self-monitoring chart, and complete the next task on the worksheet. All work and self-monitoring chart completion was to be done independently, without additional verbal cues.

The self-monitoring chart corresponded to the subject's visual cue and charted on-task behavior during independent work time by gradually indicating completion of work.

Subjects paused from the independent work to add a sticker for reinforcement to their individualized self-monitoring charts. This chart tracked the subjects' ability to remain on-task while working independently. The researcher instructed the subject to complete all tasks on the worksheet and self-monitor using the visual cue and self-monitoring chart until the self-monitoring

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chart was full of stickers. A chart full of stickers indicated the completion of the independent work. Following direct instruction, the researcher and subject worked together to complete two tasks on the worksheet. Finally, the researcher watched the subject complete two tasks on the worksheet independently.

Following day one of instruction, each subject was given an opportunity to complete independent work using the self-monitoring strategy. If the subject successfully completed the independent work using the self-monitoring chart, (s)he did not receive further instruction. If the subject did not successfully and independently complete the work using the self-monitoring chart, the researcher instructed the subject a second time.

Once the subject completed the independent work and self-monitoring chart, (s)he turned in the self-monitoring chart to the teacher. If the subject had successfully completed the independent work and self-monitoring chart, the subject received reinforcement specifically valuable to the student (computer time, coloring a picture, completing a puzzle, etc.) Sally preferred computer time as reinforcement. Elise preferred blocks as reinforcement. Jose preferred puzzles as reinforcement. Although each subject had reinforcement preferences, they were able to choose from a menu of reinforcements.

After three days of successful completion of independent work using the self-monitoring chart, the subject advanced to phase two of the intervention. In phase two, the frequency of visual cues decreased from five to three. After three days of successful completion in phase two, the subject advanced to phase three

of the intervention. In phase three, the frequency of visual cues decreased from three to two. Finally, after three days of successful completion in phase three, the subject advanced to phase four of the intervention. In phase four, the frequency of visual cues decreased from two to one. Each time a subject moved from one phase to another, the self-monitoring chart changed to correspond to the number of cues on the independent work. When moving through the intervention phases, the third day of successful independent work completion could not occur on a Monday. After two weekend days of not practicing the intervention, it was unknown if the subject would effectively remember the intervention. Therefore, if the third day of successful independent work completion occurred on a Monday, then the subject would complete independent work at the same phase on Tuesday. If successful for a fourth day, the subject would advance to the next phase.

Chapter 4

Results

The graph in Figure 4 titled "Sally" displays data collected over a six and a half week period for Sally. Sally was taught the self-monitoring intervention to use during independent work time. The graph displays both the frequency of off-task behavior during independent work time and the amount of time it took Sally to complete the independent work. During the first six days of baseline, Sally was given independent work to complete during the independent work session, without any further support or instruction. During instruction, Sally was taught the self-monitoring strategy. The researcher taught her the intervention, they practiced the intervention together, and the researcher observed Sally attempt the intervention independently. After Sally demonstrated an understanding of the intervention, she began using the self-monitoring strategy independently during the independent work session. During baseline, Sally averaged 5.6 occurrences of off-task behavior. After learning the self-monitoring strategy, Sally averaged 1.1 occurrences of off-task behavior. At the beginning of intervention, Sally spent more time completing independent work than during baseline. After day 13 of the study, Sally's completion time decreased by more than four minutes.

The graph in Figure 4 titled "Elise" displays data collected for the duration of the study for Elise. The graph displays both the frequency of off-task behavior during independent work time and the amount of time it took Elise to complete the independent work. Baseline data was collected for Elise for 11 days. After

the first day of instruction, Elise was not able to accurately complete the self-monitoring chart. Therefore, she received a second day of instruction. Following the second day of instruction, Elise was able to accurately use the self-monitoring strategy while completing independent work. The researcher instructed Elise in the same way Sally was instructed. During baseline, Elise averaged 7.5 occurrences of off-task behavior. After learning the self-monitoring strategy, Elise averaged 1.8 occurrences of off-task behavior. Throughout the duration of the study, Elise's completion time decreased by over four minutes.

The graph in Figure 4 labeled "Jose" displays data collected throughout the study for Jose, including both occurrences of off-task behavior and completion time for independent work. Baseline data was collected for Jose for 16 days. The researcher followed the same procedure in teaching Jose the self-monitoring strategy as used with Sally and Elise. During baseline, Jose averaged 5.3 occurrences of off-task behavior. After learning the self-monitoring strategy, Jose averaged .6 occurrences of off-task behavior. Throughout the duration of the study, Jose's completion time decreased by over six minutes.
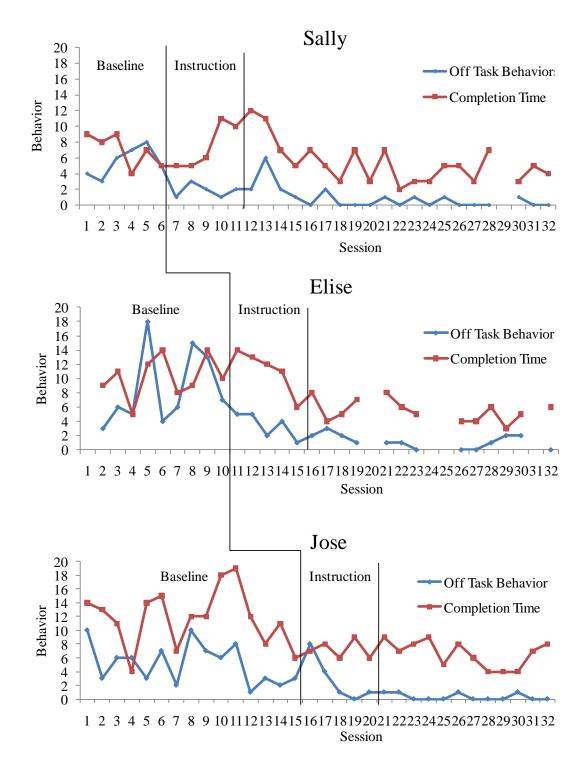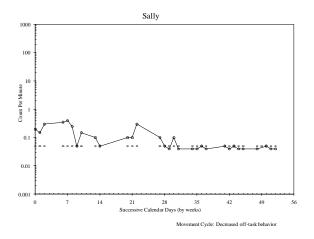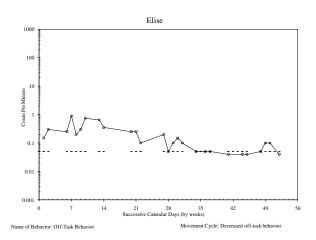
Figure 4. Results of Sally, Elise, and Jose data collection

Sally

Count Per Minute

1000
100
10
1
0.1
0.01
0.001

0   7   14   21   28   35   42   49   56
Successive Calendar Days (by weeks)

Movement Cycle: Decreased off-task behavior

Elise

Count Per Minute

1000
100
10
1
0.1
0.01
0.001

0   7   14   21   28   35   42   49   56
Successive Calendar Days (by weeks)

Name of Behavior: Off-Task Behavior   Movement Cycle: Decreased off-task behavior

Jose

Count Per Minute

1000
100
10
1
0.1
0.01
0.001

0   7   14   21   28   35   42   49   56
Successive Calendar Days (by weeks)

Name of Behavior: Off-Task Behavior   Movement Cycle: Decreased off-task behavior
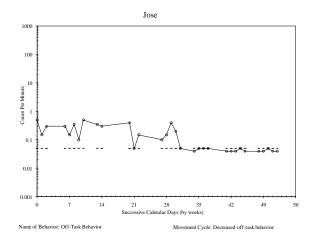
Figure 5. Standard Celeration charts of data collection results for Sally, Elise, and Jose

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Within this study, the use of a self-monitoring strategy successfully decreased occurrences of off-task behavior during independent work time. All three subjects demonstrated a decrease in occurrences of off-task behavior during independent work time. Additionally, Elise and Jose spent less time working on independent work after learning the self-monitoring strategy. As Sally learned the self-monitoring strategy, her completion time increased, but as she familiarized herself with the strategy, her completion time decreased.

Chapter 5

Analysis of Data Interpretations and Finding

Conclusion

The purpose of this study was to determine the effect of a self-monitoring strategy on independent work behavior. Specifically, the study investigated occurrences of off-task behavior and completion time of independent work with three students, with identified MIMR and IEPs with functional academic and behavior goals. The results of the study indicate that a self-monitoring strategy, in which students track progress while completing independent work, effectively decreased the occurrences of off-task behavior. Additionally, in all three subjects, the intervention decreased independent work completion time. A frequency count was used to track the occurrences of off-task behavior during 20 minute independent work sessions. Data were collected and examined to find trends in frequency of off-task behavior and completion time.

Sally was enthusiastic to learn the self-monitoring strategy, specifically to use the self-monitoring chart while completing independent work. She quickly learned how to use the strategy and effectively used it independently after one day of instruction. Data collected on Sally indicate that the self-monitoring strategy effectively decreased the frequency of off-task behavior. Although not by a significant amount, the strategy decreased her completion time. Using the self-monitoring strategy encouraged her to remain focused while completing independent work. She took pride in maintaining responsibility for her work.

During the first day of instruction, Elise quickly learned the self-monitoring strategy. She was able to demonstrate understanding of the strategy during the instruction session, but then next day was not successful at implementing the strategy independently. Therefore, the researcher instructed her in a second instruction session. On the second day of using the strategy during the independent work session, she was able to successfully self-monitor independently. Data collected for Elise indicate that the self-monitoring strategy effectively decreased the frequency of off-task behavior. Additionally, the strategy decreased her completion time. Elise celebrated to herself each time she successfully self-monitored during independent work time. As she turned in her independent work and self-monitoring chart, she would say aloud to herself, "You did it Elise" (or another similar phrase).

During baseline, Jose demonstrated a high frequency of off-task behavior. He quickly learned the self-monitoring strategy. He effectively used the strategy to self-monitor during independent work time the first day following instruction. Data collected for Jose indicate that the self-monitoring strategy significantly decreased the frequency of off-task behavior. Additionally, the strategy significantly decreased his completion time. Jose quickly realized that the less time he spent on independent work, the more time he could spend with a self chosen reinforcement.

Implications for Education

The findings in this study suggest that the use of a self-monitoring strategy helps to decrease the frequency of off-task behavior. These off-task behaviors include any behaviors irrelevant to the academic task (Gickling & Amistrong, 1978). Additionally, the strategy decreases the completion time of independent work. This strategy incorporates specific and descriptive instruction, which enhances task completion (Bouxsein et al., 2008). The research found the self-monitoring strategy to work with early elementary students with identified MIMR.

Teaching students to self-manage behavior gives students the responsibility of owning their behavior choices. This enhances the students' independent functioning. Additionally, it enables further integration into the community at large (Hume & Odom, 2007; Selznick & Savage, 2000). As students self-manage, they gain confidence in their abilities both in the classroom and community (Lapan et al., 2002).

This strategy could be taught to an entire class. A teacher could implement this self-monitoring strategy in a classroom with minimal training (Ganz, 2008). An independent work session in which students work on-task for the duration of the session would allow a teacher to work one-on-one with a student, assess an individual or small group, or work with a small group of students for remedial instruction, without interruption. Additionally, students could generalize this strategy to other academic tasks, self-monitoring as they

complete work independently or in small groups, during various instruction times in a school day.

Based on the results of this study, when students self-monitor behavior while completing independent work, they have less frequent occurrences of off-task behavior. When students have less frequent occurrences of off-task behavior, the teacher can spend less time redirecting and instructing the whole group of students. This provides the teacher more time to work with other students, either one-on-one or in a small group, without interruptions.

Limitations

This study may have threats to both internal and external validity. Maturation is a potential threat to internal validity. All three subjects are in critical learning stages and physical and emotional maturation may have contributed to their on-task behavior improvement. Further research on older students with MIMR or other cognitive disability could eliminate this threat. Selection is another potential threat to internal validity. Each subject was systematically selected. Additional research using randomly selected subjects would enhance the validity of this study's results.

A potential threat to external validity is reactive arrangements, otherwise known as the Hawthorne effect. The subjects were aware of their participation in the study. Therefore, this acknowledgement of participation may have affected their performance during independent work time, using the self-monitoring strategy (Salkind, 2006).

Future Research

This study could be replicated on older students with identified MIMR, as well as students with other disabilities on an IEP. This study could be replicated with students in both self-contained settings and resource settings, as long as their behavior needs are similar to the subjects used in this study. Future research may find that some populations of students need more cues to self-monitor than other populations.

Summary

This study examined the use of a self-monitoring strategy during independent work time, and its effect on on-task behavior and completion time. A multiple-baseline across subjects design was used for the three subjects who participated in the study. Results of occurrences of off-task behavior in three subjects were analyzed to determine the effect of the intervention on on-task behavior. Examination of the data provided results indicating that the use of a self-monitoring strategy during independent work time decreased both occurrences of off-task behavior and completion time. After learning the self-monitoring strategy, all three subjects were able to effectively implement the strategy during independent work sessions. Further research could determine this strategy's effectiveness among various populations of students and during various academic tasks.

Table 1

Participants in Study

Name	Gender	Age	Disability	IQ	Grade
Sally	Female	7	MIMR	64	1
Elise	Female	7	MIMR	62	1
Jose	Male	7	MIMR	64	1

Figure 1. Example of self-monitoring charts for Phases 1-4

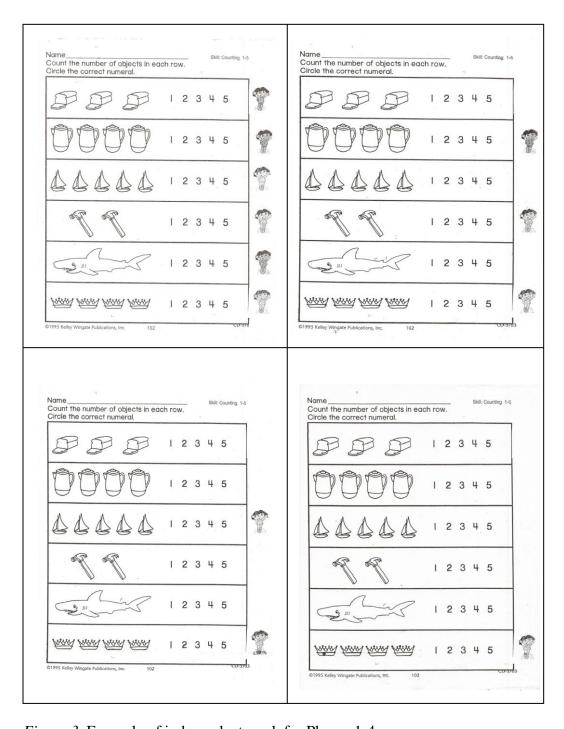|	
Student:	Date:
Began work:	Completed work:
Standing up out of seat	
Raising hand	
Talking to another student	
Talking to teacher	
Hands on teacher/student	
Misc. off task behavior	

Figure 2. Data collection chart

Figure 3. Example of independent work for Phases 1-4

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APPENDIX A

IRB HUMAN SUBJECTS APPROVAL

To:	Kathleen Mccoy
	ED
From:	Mark Roosa, Chair
	Soc Beh IRB
Date:	01/08/2010
Committee Action:	**Exemption Granted**
IRB Action Date:	01/08/2010
IRB Protocol #:	1001004670
Study Title:	Effects of Self-Monitoring Strategies on Independent Work Behavior

The above-referenced protocol is considered exempt after review by the Institutional Review Board pursuant to Federal regulations, 45 CFR Part 46.101(b)(1) .

This part of the federal regulations requires that the information be recorded by investigators in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects.   It is necessary that the information obtained not be such that if disclosed outside the research, it could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.

You should retain a copy of this letter for your records.

APPENDIX B

INSTRUCTION SCRIPT

1. Tell: you are going to learn how to self-monitor while you work.
2. Show: self-monitor visual cue.
3. Tell: this picture (of Dora the Explorer/SpongeBob Squarepants) shows me that it is time to stop working and self-monitor.
4. Show: self-monitoring chart.
5. Tell: when I self-monitor, I put a sticker on this chart.
6. Tell: when you see Dora the Explorer/SpongeBob Squarepants, I stop working and put a sticker on my chart.
7. Tell: after I put a sticker on my chart, I go back to my work.
8. Tell: watch me.
9. Show: work on a problem.
10. Tell: I am doing my work.
11. Show: see the self-monitor cue.
12. Tell: I see Dora the Explorer/SpongeBob Squarepants. It is time to give myself a sticker.
13. Show: stop work; take a sticker and place it on the self-monitoring chart.
14. Tell: I am putting a sticker here because I have finished some work.
15. Show: go back to the worksheet and start next problem.
16. Tell: after I put a sticker on my chart, it is time to work.
17. Tell: now let practice together.
18. *Walk through steps 10-17 with the student self-monitoring.*
19. Tell: now show me how you self-monitor.
20. *Watch student walk through steps 10-17 independently; prompt when necessary.*

APPENDIX C

PARENTAL CONSENT

EFFECTS OF SELF-MONITORING STRATEGIES ON

INDEPENDENT WORK BEHAVIOR

PARENTAL LETTER OF PERMISSION

Dear Parent:

I am a graduate student under the direction of Professor McCoy in the College of Education at Arizona State University. I am conducting a research study to determine the effect of a self-monitoring strategy on behavior of students with mild disabilities, being educated in a self-contained setting, during independent work time.

I am inviting your child's participation, which will involve participating in a typical classroom intervention for two weeks. Your child's participation in this study is voluntary. If you choose not to have your child participate or to withdraw your child from the study at any time, there will be no penalty. Likewise, if your child chooses not to participate or to withdraw from the study at any time, there will be no penalty. The results of the research study may be published, but your child's name will not be used.

Although there may be no direct benefit to your child, the possible benefit of your child's participation is increased independent on-task skills. This will positively impact your child's academic and behavior functioning. There are no foreseeable risks or discomforts to your child's participation.

In order to maintain confidentiality during research, data will coded by number rather than using names. Responses will be confidential. The results of this study may be used in reports, presentations, or publications but your child's name will not be used.

If you have any questions concerning the research study or your child's participation in this study, please call me at (480) 812-6140.

Sincerely,

Jenn Coughlin

By signing below, you are giving consent for your child _____ (Child's name) to participate in the above study.

_____   _____   ____

Signature   Printed Name   Date

If you have any questions about you or your child's rights as a subject/participant in this research, or if you feel you or your child have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the Office of Research Integrity and Assurance, at (480) 965-6788.

APPENDIX D

INFORMED CONSENT

Effects of Self-Monitoring Strategies on Independent Work Behavior

My mom and dad said that it is okay for me to take part in a project about doing work on my own.

I will be asked to keep track of all the work I am doing on my own.

I am taking part because I want to. I know that I can stop at any time if I want to and it will be okay if I want to stop.

_____

  _____

Sign Your Name Here   Print Your Name Here

_____

Date