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The effects of self-monitoring, an action list, and graphing on on-task behavior

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THE EFFECTS OF SELF-MONITORING, AN ACTION LIST, AND GRAPHING ON ON-TASK BEHAVIOR

by
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ABSTRACT

The Effects of Self-Monitoring, An Action List
and Graphing On On-Task Behavior
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1 May 1998
Advisor: Dr. S. Jay Kuder,
Special Education

The purpose of this study was to determine if self-monitoring, graphing of on-task behavior time, and the use of a predetermined written action list with self-evaluation of adherence to that action list would increase on-task behavior time during independent study time. The hypothesis was that students in the supplemental instruction program would decrease their incidences of off-task behavior by bringing a predetermined written action list with them to class, self-evaluating adherence to their action list, self-monitoring and graphing their on-task behavior time.

The fifteen students who participated in this study are students who attend Delsea Regional High School, located in Franklinville, New Jersey. Students were instructed on compiling an action list, self-monitoring procedures, and graphing techniques. Students were given practice periods filling out the monitoring forms before data was collected. Their final scores were compared to baseline data. The study included a baseline phase, three intervention phases, three fading phases, and a post observation phase. The results indicated an increase in on-task behavior during all three interventions with the most significant increase occurring during the audio cue intervention.

MINI-ABSTRACT

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Students with Learning Disabilities attending a supplemental instruction class on a daily basis were spending a large percentage of their study time engaged in off-task behaviors. An intervention combining the use of a predetermined written action list, self-evaluation, self-monitoring and graphing of on-task behavior time was implemented.

The results showed that on-task behavior time increased from baseline in all phases except Post. Behavior list behaviors decreased from baseline throughout the majority of the study.

TABLE OF CONTENTS

LIST OF TABLES AND GRAPHS

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CHAPTER I

THE PROBLEM

Introduction

Time is a nonreplenishable resource for humans. Once time passes us, it can no longer be used. As we grow older and our schedules become more demanding, effective time management is paramount to success. Many high school students view time as unimportant. They feel they have all of the time in the world to accomplish whatever demands are placed upon them. In this philosophy they are quite wrong. They adhere more to the theory never do today what you can put off until tomorrow. Unfortunately, when tomorrow arrives, it becomes today. Therefore, important issues are left incomplete or not begun at all.

I teach a supplemental support class to classified students and non-classified students with 504 accommodation plans. One component of the support class is to try to teach the students to establish priorities, set goals and utilize time productively. They attend this support class for a forty-two minute period each school day. Utilizing this forty-two minute period productively is a challenge some of my students are unable to

meet. A percentage of my students are able to be productive if they have actual written tasks to accomplish. These same students, however, when faced with independent study time opportunity are unable to stay on task in a productive manner. Their off-task behaviors create a classroom environment that is not conducive to work.

Nelson, 1977, defines self-monitoring of behavior as an individual's assessment and recording of the occurrence or nonoccurrence of a target behavior (Harris et al. 1994). Hughes, Korinck, and Gorman, 1991, believe the ability to manage one's own behavior gives students the power they need to be successful independently. This success should be evident across settings, such as home, school and community (Carpenter & McKee-Higgins 1996). We can help students with disabilities as they mainstream into regular education classrooms by using self-monitoring. Since self-monitoring involves the student in managing their own behavior, it is a skill that will be beneficial in the mainstreamed regular education classroom (Prater 1994).

Problem Statement

Will the use of a predetermined written action list, self-evaluation of adherence to that action list, self-monitoring and graphing of on-task behavior time result in a decrease in off-task behavior time?

Hypothesis

Students in the supplemental instruction program will decrease their incidences of off-task behavior by bringing a predetermined written action list with them to class, self-evaluating adherence to their action list, self-monitoring and graphing their on-task behaviors.

Purpose

The purpose of this study is to decide if self-monitoring and graphing of on-task behavior time and use of a predetermined written action list with self-evaluation of adherence to that action list will decrease off task behaviors during independent work time. The study will involve two classes of high school students during their supplemental instruction period. This supplemental instruction is an open resource center. Each class comprises eight to twelve students. A baseline of each student's on-task behaviors will be established during a one-week period.

This study is important to any teacher overseeing independent learning time of students. Some students are not aware of how much time they use in a nonproductive way. With the philosophy in education emphasizing cooperative learning groups and independent study activities, being able to focus and the productive use of the time allotted to accomplish tasks is critical for students. Constant verbal reminders from the teacher to get back on task usually result in an argument from the student claiming they are on task. The reminders also interrupt the work atmosphere and thought patterns for other students who are engaged in active learning activities. This study is especially important to me because of the format of the supplemental program. Students need to be able to use their time in a productive, unobtrusive way. My attention is divided by the number of students in the class period and their individual educational needs. Too much valuable time is lost bringing students back on task.

Overview

Chapter Two will be a review of the literature on self-monitoring, self-evaluation,

and graphing. Chapter Three will address the design of the study. Chapter Four will contain an analysis of the data gathered. Chapter Five will provide a summary and conclusion of the study.

CHAPTER II

REVIEW OF THE LITERATURE

Definition

Nelson and Hayes, 1981, define self-monitoring as what occurs when an individual assesses whether or not a target behavior has occurred and then records the results in some manner. Harris and Pressley, 1991, state that self-monitoring belongs to the cognitive-behavioral interventions because it encapsulates elements of behavioral, cognitive, and developmental approaches to behavior change (Rankin & Reid 1995). Self-monitoring is a combination of self-assessment and self-recording. When using a self-monitoring procedure, the student will self assess if a behavior has occurred and record the results (Prater 1994).

Rationale

According to the United States Department of Education, 1990, a high percentage of students with learning disabilities spend more than 80% of their time in the regular education classroom (Reid 1996). Less than 1% of public school students are identified as having emotional or behavioral disorders. We are currently educating these students in

separate classes and facilities. If the current trend toward total inclusion continues, regular education teachers must meet the needs of these students. Over the past 30 years, many studies have shown 6% - 10% of children and youth have emotional problems that seriously impede their development. Treatment is required if these students are to be successful in school and society. According to federal data, 70% - 80% of children in need of mental health service do not receive appropriate care (Kauffman 1995). Interventions, such as SM (self-monitoring), that have the potential to increase a student's productivity is a valuable tool considering the current trend toward inclusion. SM has been shown to increase time on-task in the regular education classroom (Maag et al. 1993). Historically, the ability to regulate one's own behavior is invaluable, states Mahoney and Thoresen, 1974. As such, according to Kanfer, 1977, it has both individual and group survival value. Lloyd and Landrum, 1990; Mace and Kratochwill, 1988 feel self-monitoring is an intervention that would help students with learning disabilities gain this valuable asset.

The single most common dependent variable reported in self-monitoring intervention is on-task behavior (Reid 1996). According to Zimmerman and Schink, 1989, the ability to self-regulate has always been deemed important and valuable. More recently the ability to self-regulate is viewed as a critical component of a child's development and learning (Harris et al. 1994). Self-control, according to Rosenbaum and Baker, 1984, is maintaining goal-directed behavior in an environment that may be conflicting and non supporting. Self-monitoring, self-evaluation and self-reinforcement are considered the three main components of self-control (Trammel et al. 1994).

Graham et al., 1992, feel self-monitoring may serve as a guide for task performance, increasing engagement and enabling independent performance (Reid 1996). The rationale for attention monitoring is the belief that increasing an individual's on-task behavior will result in improved academic performance (Harris et al. 1994).

Mace and Kratochwill, 1988, report that self-monitoring techniques are used by a variety of people to better regulate their behaviors regarding various activities and/or behaviors (Harris et al. 1994). Behaviors that impede a student's learning and the routine of the classroom present problems for teachers (Storey & Lawry 1994).

Zigmond, Kerr and Schaeffer, 1988, found the acquisition of classroom survival skills was of equal importance to academic competence for students with learning disabilities to be successful in the mainstreamed classroom. These survival skills became more critical in the secondary level for students' success. The subjects used for this study were 36 students who were classified as LD (Learning Disabled). The students attended three public high schools located in a large northeastern urban district. There were 28 males and eight females in grades nine through 11 involved. These particular students were chosen based upon recommendation from the LD teachers. The end of the year records indicated an average grade point average of 1.16 on a 4-point scale.

This district places LD students in resource centers for one or two periods each day where they receive instruction for English and/or math. The remaining five or six periods each day are spent in the mainstream classrooms. The students were observed in 23 different mainstream classes.

Students who were classified as ED (Emotionally Disturbed) who were in the

same mainstream classes as the LD students were used by the observers as a comparison group. The rationale for this was that LD and ED students are often labeled mildly handicapped, and LD and ED students share many of the same mainstream classes for approximately the same amount of time where EMR (Educable Mentally Retarded) students are not included. The comparison group was chosen by teacher identification. It consisted of eight ED students, seven males and one female. Three were ninth graders, three were tenth graders, one was an eleventh grader, and one was a twelfth grader. They had a grade point average of 1.25 on a 4-point scale according to end of the school year records.

A second comparison group was the control group. These students were chosen at random by the observer which resulted in 23 different students, one from each class.

Data collection was done by using observations recording event and intervals. For the attendance variable students were given two points if they arrived to class before or during the late bell or if the student arrived with a signed pass. Students received one point if they arrived after the late bell and no points if they were absent. This could not be done with the control group due to the random selection process. For the variable of being prepared, the student received one, two, or three points depending upon the number of items they brought with them. The targeted items were: a writing implement (pen or pencil), paper (a notebook, pad of paper, or piece of paper), and a textbook relevant to that class. They were given no points if they brought no material.

Interval recordings counted the students' on-task behaviors and event recordings totaled the number of teacher-student-interactions. A recording protocol using a 30-

minute cassette recording was used. During the initial 10 seconds of the 15-second interval the observer scanned the target students. The next five seconds were used by the observer to record T(teacher directed activity), I(student directed activity); and the type of activity each student was involved in: R(reading), Wr(writing), T(talking), L(listening), F(off-task/quiet), D(off-task/disruptive), M(management), or W(waiting). The teachers' requests such as "Get out your books" was coded P(procedural) or "What is a verb?" coded I(informational). The target students' behaviors were indicated by +(for the appropriate response) or P(passive noncompliance) or A(active noncompliance). Unsolicited comments which were content appropriate were also recorded using a V, and unsolicited questions which were appropriate were recorded using a Q.

Observers were trained and participated in discussions of definitions of the terms being used. They also completed exercises from a training manual containing simulated examples of classroom experiences. They also practiced using the audiotape and slashing codes at the appropriate intervals.

The results of the study showed that LD students generally earned an average of 1.31 for coming to class on time. LD students usually had between one and two of the three necessary "pieces of school equipment." They were on-task about 56.6% of the time. Procedural requests by teachers averaged about two per period and the LD students complied with 1.35 requests. Teachers asked LD students for information about eight times per period and usually the requests went unanswered. Results for the comparison groups were not too different. The control students were on-task 58.8% and the ED students were on-task 58.8%. Compliance requests for these groups also showed no

significant differences from the LD results.

Synder and Bambara found the following in their research: Salend and Salend, 1986; Williams, Walker, Holmes, Todis, and Fabre, 1989; Zigmond, Kerr, Brown, and Harris, 1984, found the following skills are necessary for the success of secondary students: daily class attendance, punctuality, adequate preparation for the daily lesson, following and meeting due dates, being able to follow written and oral directions, and addressing teachers in an appropriate manner. Schaeffer, Zigmond, Kerr, and Farra, 1990, concluded that students with learning disabilities have great difficulty with these targeted behaviors. The students' inconsistencies with these targeted behaviors often lead to failure in the mainstream setting.

Schumaker and Deshler, 1988, state that although secondary level teachers fully expect these targeted behaviors to be acquired and mastered, they are not usually willing to teach these skills, or make modifications for students with learning disabilities in their classrooms. Hallahan and Sapona, 1983; Hughes, Korinek, and Gorman, 1991; Hughes, Ruhl, and Misra, 1989; Nelson, Smith, Young, and Dodd, 1991; Snider, 1987, proport that self-management interventions are consistent with the expectations of secondary-level teachers. The emphasis is on the student to assume responsibility for his or her learning and behaviors.

Self-management can reduce teacher time demands as they design it to be student directed and maintained. Self-management procedures have been effective with students with learning disabilities in promoting a range of both academic and social behaviors (Synder & Bambara 1997). Finally, and perhaps most important, self-management

procedures facilitate generalization and transference across settings.

Self-management techniques, including SM, are preferred techniques for behavior modification because the procedures move the students away from an external behavior control to an internal behavior control. These techniques allow the student to become more involved and be more responsible for their behavior. Behaviors can be individualized to be monitored as each students' needs dictate as shown by Prater, Joy, Chilman, Temple, and Miller, 1991, when they taught SM procedures to five different students. The students were secondary-level with learning disabilities. They gave each student his or her own descriptions of on-task behavior.

According to Blick and Test, 1987, and McLaughlin, 1984, classroom teachers prefer self-management procedures because they are techniques that are easy to start, require a minimal amount of the teacher's time and can be applied in a way that will not interfere with the regular school work. Disruptive behaviors are typically handled with behavior management programs such as token economy systems or continency contracts. These programs require reinforcers and observation checks by the teacher. Rather than relying upon these types of behavior modification programs, if the students were taught to self-monitor their behavior, less of the teacher's time was spent recording behavior. There have been studies such as Lalli and Shapiro, 1990; Hogan and Prater, 1993; Prater, Hogan, and Miller, 1992, that have shown the effectiveness of SM on increasing on-task behavior without the additional use of contingent reinforcement (Prater 1994).

Grahm, Harris, & Reid, 1992, feel SM can give students new ways of thinking about their behavior. SM also reinforces the idea that behavior is under an individual's

internal control instead of an external control (Rankin & Reid 1995). According to Colvin et al., 1993, an instructional approach, which includes prompts and monitoring, to addressing behavior management is similar to addressing a student's academic behaviors. The emphasis is giving students opportunities to learn and practice acceptable behaviors instead of focusing on negative consequences. Use of an instructional approach to handle behavior concerns provides the foundation for the creation of a positive learning climate that will motivate students to learn (Carpenter & McKee-Higgins).

Over the past 30 years, the effectiveness of separate placement for students with learning disabilities has been discussed. Research has failed to prove separate placement as more beneficial than the student remaining in the regular education classroom. Separate class programs have probably failed to produce the anticipated results because they have not met the high standards that were described for the ideal separate placement program.

Special education classes, at times, consist of activities to develop basic literacy and numerical skills. These classes sometimes lack coherence. Often the variety of resources and information that is available in the regular education classroom is missing in the special education classroom. Usually, the special education curriculum is not coordinated or correlated with the regular education curriculum. At times, instead of providing additional education, the special education class is offering replacement teaching (McLeskey & Waldron 1996). SM can help students with learning disabilities stay in regular education classes. An adolescent with learning disabilities who had been taught a SM procedure in the resource room applied this procedure in the regular

education classroom. Significant increases resulted in both on-task behavior and spelling accuracy increased by 20% (Prater et al. 1992).

Research on memory, metacognition, and personal control has led some to refer to the child with learning disabilities as a passive learner. This type of child lacks the strategies needed for attacking academic problems. The child with leaning disabilities tends to exhibit learned helplessness, not have an adequate idea of what strategies are available for problem solving, and is unable to produce appropriate learning strategies spontaneously. SM is a useful intervention because it actively engages the child in the process (Hallahan & Sapona 1983).

Richey and McKinney, 1978, found students with learning disabilities to be more distractible. Feagans and McKinney, 1981, found students with learning disabilities spend more time off-task than on-task. Sherry, 1982, found students with learning disabilities engage in more non-task-orientated behaviors (Zigmond et al. 1988). Licht, 1983; Wiederholt, 1974, both state SM should prove useful to students with learning disabilities because these students experience difficulty in attention and staying on task (Harris et al. 1994).

The use of SM can buffer environmental factors such as more appealing behaviors and competing conditions that can interfere with task performance. The SM intervention may provide the catalyst to on-task behavior. Of twenty-three experiments studied, twenty-two used on-task behavior as a dependent variable. Of these twenty-two experiments, twenty-one reported increases in on-task behavior as a result of SMA (self-monitoring for attention) and/or SMP (self-monitoring for performance).

Adult or teacher initiated assistance in redirecting students to get on-task was displayed by Rooney and Hallahan, 1988 using SMA intervention. Fuchs, Fuchs, and Bahr, 1990; Fuchs, Fuchs, Bahr, Fernstorm, and Stecher, 1990; investigated the use of SM as a major component in intervention with difficult to teach students in the regular education classroom. They found an increase in the frequency of targeted behaviors and the teachers' perceptions of the students' manageability and their tolerance with these students increased. Teachers viewed these interventions as feasible and practical for classroom use. Based upon Keogh's 1983 study, it was viewed that time a student spends on-task is perceived as teachableness. Hallahan and Lloyd, 1987, feel SM can be a useful intervention to increase on-task time (Reid 1996). The effectiveness of SM has been adequately researched with elementary children. The secondary student has not been given as much attention. Secondary students tend to resist adult supervision and need to be able to manage their time and learning activities to be successful. Therefore, more research is needed with secondary students as subjects (Trammel et al. 1994).

Procedure

On-task behavior and academic responding have been the two main areas of research in relation to SM and students with learning disabilities. Early research conducted by Broden, Hall, and Mitts, 1971; Glynn and Thomas, 1974; Glynn, Thomas, and Shee, 1973, used SM in the classroom to decrease disruptive behaviors by increasing on-task behaviors. They recorded SMA on tally sheets and students graphed their results daily. Using SM with students with learning disabilities has resulted in meaningful increases of attention (Rankin & Reid 1995).

Most of the literature studied such as McDougall & Brady 1995, Prater 1994, and Storey & Lawry 1994, used the SMA procedures developed by Hallahan and colleagues at the University of Virginia (Reid 1996). This method uses an auditory tone at random intervals. When the students hear the tone, they ask themselves if they are demonstrating the targeted behavior. They then check off "yes" if they are or " no" if they are not (Prater 1994). SM is an intervention run by the student. Therefore, it is critical that the student sees the value in mastering the process and is cooperative with the procedure (Rankin & Reid 1995). Dunlap, Koegel and Koegel, 1991, state that awareness of a target behavior may influence its occurrence. Identifying the targeted behavior is difficult to teach students. Extra training in discriminating target behaviors increased on-task behavior according to Marshall, Lloyd, and Hallahan, 1993 (Reid 1996). Hughes, et al., 1989, found if recording was not effective, some form of self-reinforcement may be required. As Dunlap et al., 1991, found, SM requires less teacher supervision than teacher directed strategies (Harris et al. 1994).

SM procedures must be taught to the students (Prater 1994). During the instructional phase of SM, being very specific about the target behavior is important. Students need to fully understand what they are being asked to evaluate. "On-task" is not specific enough for student assessment. Specific behaviors, such as: "sitting in my seat," "planning my work," etc. must be used to establish what "on-task" behavior means (Rankin & Reid 1995). The teacher should present and model the procedures for the students. After the modeling is completed, the students should have a practice time. This is when the students' accuracy should be assessed. An 80% agreement between the

students' assessment and the teacher's is preferred before the student is considered trained (Prater 1994). Students should be asked to self-assess without self-recording results. If the target behavior remains constant, the student should then be instructed to self-assess "when you think of it."

It is recommended that the following steps be followed during the instructional phase of the SM procedures. First, the target behavior must be clearly defined. Second, the target behavior must be discriminated. Finally, the SM procedures themselves must be explained. The teacher must explain when and where the SM will take place and teach the actual procedure (Rankin & Reid 1995).

Effects of self-monitoring for academic accuracy and achievement

Non-disabled students:

For students who are not succeeding academically and/or behaviorally, the use of SM should be a viable intervention. Research supports the effectiveness of SM for both academic and behavioral gains (Prater 1994). The differential aspects found between SMA (self-monitoring for attention) and SMP (self-monitoring for performance) are too small to affect academic achievement. Lloyd et al., 1989; Lloyd and Landrum, 1990; concur with this finding (Hallahan et al. 1982). Seventeen experiments have addressed the effects of SMP. Hallahan, Lloyd, Kneedler, and Marshall, 1982, found increases in the rate of correct math responses. Heins, Lloyd, and Hallahan, 1986, found increases in the number of correctly written numbers on a math task. Roberts and Nelson, 1981, combined SMP with SMA and reported increases in the rate of completion of math problems. Harris's 1986b study found increases in the number of correct spelling

practices using both SMP alone and combined with SMA. Harris et al., 1994, replicated these results. Reid and Harris, 1993, found use of SMP resulted in an increase in the number of correct spelling practices. Lloyd et al., 1989, combined SMA and SMP during math tasks resulting in an increase in the number of correct movements per minute (Reid 1996). Glomb and West, 1990, reported an increase in homework assignments completed and the quality of creative writing assignments when SMA procedures were used with high school students (McDougall & Brady 1995).

According to Mercer and Mercer, 1993, time engaged in academic tasks correlates with high rates of achievement (Trammel et al. 1994). Dunlap and Dunlap, 1989, along with Reid and Harris, 1993, show that the use of a strategy along with SM technique may be more effective than SM alone. Malone and Mastropieri's 1992 study, compared the effects on reading comprehension using a combination of a summarization strategy and a SM technique and a summarization strategy alone. On a generalization task, the students using the combination intervention outperformed the other group.

Graham and Harris, 1989, found no difference in the use of self-regulation techniques within the framework of self-regulated strategy development with a story grammar strategy. Sawyer et al., 1992, found that the full self-regulated strategy development showed increased generalization. Using SM techniques in a drill and practice regime has met the goal of increasing fluency of a previously mastered skill. To continue using SM this way could result in trivializing SM. Graham et al., 1992, feels guiding task performance, monitoring performance, increasing engagement, and enabling independent performance may be other valuable functions of SM (Reid 1996).

Students with learning-disabilities:

Difficulty in getting and staying on-task is the major reason for failure among students with learning disabilities. SM has been effective in increasing both attention and academic performance (Rankin & Reid 1995). SM of on-task behavior using audio cues improved the performance of elementary students with learning disabilities in math. SM of academic accuracy and SM of academic productivity using audio cues were a bit more effective than the SMA (Maag et al. 1993). Carr and Punzo, 1993, found an increase in academic accuracy and productivity in reading, math and spelling when SMA and SMP were used with middle school students with behavioral disorders (McDougall & Brady 1995).

Reid and Harris, 1993, addressed the effects of SM on new learning with students with learning disabilities. The number of words spelled correctly on a weekly spelling list were compared with the spelling strategy alone, spelling strategy with SMA, and spelling strategy with SMP. The spelling strategy and SMA showed an increase over the strategy alone. SMA and strategy resulted in fewer correctly spelled words than strategy alone. SMA resulted in lower maintenance than both the strategy alone and the strategy and SMP. Therefore, there is a little evidence to suggest that SM can affect new learning (Reid 1996).

The next study reviewed concerned a population of young students with severe behavior disorders. The time-on-task dependent variable was delimited to activate academic engaged time. Academic acquisition was a measurable outcome. External reinforcement was restricted. Only SM was used. A multiple-baseline-across-subjects

design was used with response generalization probes. The sessions were daily eight minute study periods during spelling class. Participants studied their spelling words for eight minutes preceding their regular spelling lesson during baseline. During intervention, the use of an audio-cued SM was added to regular baseline procedures. Students used SM forms and cassette players with prerecorded cassettes and headphones that cued them. The students were also seated in carrels. The primary dependent variable was academic time on-task with spelling acquisition being the secondary dependent variable. Academic time on-task was measured using a whole interval recording system. An oral quiz, immediately following daily sessions, yielded the spelling acquisition based upon the percentage of correctly spelled words. Every fourth session, written tests were administered to ascertain generalization to written response. The results of this study extend previous findings that the use of a behavioral self control intervention increased students' time on-task and academic productivity during maintenance and fluency tasks. Students showed higher levels of time on-task and increased consistency of performance (McDougall & Brady 1995).

Another study reviewed used an eight-year-old male with learning disabilities as the subject. Direct observations and completed math worksheets provided data. A time-sampling technique was used to collect data on on-task behavior time. Observations were made every four seconds. The number of math problems measured academic productivity completed, not accuracy.

There were two methods of intervention: self-assessment and teacher assessment. During the self-assessment phase, the audio tone procedures used by Hallahan et al.,

1979, were used. During teacher-assessment, when the tone sounded, the student would look at the teacher who would determine whether the student had been attending. The teacher would signal the student and the student would record the teacher's assessment. These two alternating methods were used to compare the effects of self-assessment. Baseline data was accrued for eight days. Day nine, self-assessment and self-recording were introduced. Days 10, 13, 15, 19, 20, 22, and 24 were the same as day nine. Teacher assessment was introduced on day 11 and occurred on days 12, 14, 16, 17, 18, 21, 23, and 25. Neither condition would be in effect for more than three consecutive days. After an analysis of the effects of the two assessment conditions, a reversal was implemented. No self-recording was used for nine consecutive days, duplicating baseline conditions. Audio cues were not used on days 40 through 45. During sessions 46 through 48, observations were made only once per week. There was a lapse of one month between observations 48 and 49.

There were immediate and dramatic increases in on-task time with both methods used. The SM showed more of a gain , however, than the teacher monitored. Productivity also showed gains with both methods used. The conclusion reached was the SM method showed more of a gain in both on-task time and productivity possibly because SM prompts self-evaluative skills and teacher monitoring does not activate self-reinforced behaviors. Teachers also preferred the SM as it was less disruptive to class time and took less teacher time to implement (Hallahan et al. 1982). Also, in another study, the use of SMA intervention resulted in an increase in the number of math problems completed by two students with learning disabilities (KiGangi et al. 1991).

Reid and Harris, 1993, state that there is no evidence to suggest which variable, attention or performance, through SM, will result in more production. Based upon Rooney, Polloway and Hallahan's 1985 study of attention versus performance monitoring with low IQ students with learning disabilities during math seatwork, there was no difference between on-task behavior and the number of problems solved correctly. Harris's 1986 study compares the effects of attention versus performance monitoring on spelling performance of students with learning disabilities. Only a slight difference was evident in terms of on-task behavior. Lloyd et al.'s 1989 results studying the effectiveness of attention versus performance monitoring during math seatwork with students with learning disabilities and of students with behavior disorders showed neither intervention superior to the other. Finally, Reid and Harris, 1993 study compared the effectiveness of attention versus performance monitoring on the spelling performance of students with learning disabilities. Again, no differences were found between the two interventions in terms of on-task behavior. The 1985 study conducted by Rumsey and Ballard found a combination of attention and performance monitoring increased on-task behavior and the length of stories written by students with behavior problems. Students with learning disabilities usually produce a small amount of content when writing according to Graham and Harris, 1992 (Harris et al. 1994).

The following study involved the use of audio-cue during SM for on-task behavior. The student who participated in this study was seven years old with learning disabilities. He was taught to self-monitor his on-task behavior each time he heard the audio cue. Two dependent variables were measured: on-task behavior and academic

productivity. The academic productivity was based upon the rate of percent correct during handwriting and math. An experimental design of a multiple baseline across responses and reversal designs was used. Six conditions were used (ABABCD): A-baseline; B-self-monitoring with the tape; C-self-monitoring without the tape; D-self-praise. The teacher followed Mahoney's procedure used in 1977.

The student's on-task behavior increased dramatically during SM in both handwriting and math. On-task behavior was maintained at high levels during fading. After one month they maintained a high level of attention during math. Productivity also increased.

A second experiment was conducted using a teacher's aide to teach children to use SM during small group instruction. The children used a wrist counter in place of a recording sheet to monitor their on-task behavior time. Six conditions were maintained (ABABCD): A-baseline; B-self-recording; C-self-monitoring without the wrist counter; D-self praise without tape or wrist counter.

Again, SM led to attention increases. High levels of attention were maintained for six weeks following the intervention. Data-based conclusions include increases in attentional behavior with use of SMA; increases in academic productivity with use of SMA; the cue tone is necessary initially; no back up reinforcers were necessary to produce results; and maintenance of effects was demonstrated for up to two and one half months following the intervention. SMA does result in increased attention and productivity (Hallahan & Sapona 1983).

The next study involves a ninth-grade male, 14 years old, classified as learning

disabled. He was taught to use a SM procedure to improve both his on-task behavior and his academic achievement. He was taught the procedure in his resource classroom. They then taught the student to apply the same self-monitoring procedure to his mainstreamed math class. According to Prater et al., 1992, the student from his resource setting transferred the skill successfully to the regular education setting (Prater 1994).

Self-management training intervention to improve the survival skills of secondary level students with learning disabilities was the focus of the next study. In order to increase specific classroom preparedness, to promote generalization to the mainstream setting, and to facilitate maintenance of the skills, training was conducted by the teacher. The students were taught to self-manage. The components included problem identification, goal setting, self-monitoring, self-evaluation, and self-reinforcement.

A checklist was comprised measuring seven behaviors considered important for classroom survival. The checklist of behaviors follows: 1-arrives to class on time; 2-ready for class to begin; 3-has a writing tool; 4- has paper; 5-has book needed; 6-has homework handed in on time; 7-completes homework.

Social validity was measured in three ways. First was a measure of the student's progress. The second was a comparison of performance with non-disabled peers. The third measure was an assessment of student satisfaction ascertained through a teacher questionnaire and interviews.

Problem identification, goal setting, self-monitoring, self-evaluation, and self-reinforcement were the components of the self-management plan. The special education teacher trained the students in the self-management procedures. During training, the

students' current behaviors were analyzed, a new strategy was described, the teacher modeled the procedure, verbal rehearsals occurred, and students were permitted to practice with actual materials.

The first intervention phase was a two-step process. First, the student was trained to use the self-management plan and the second phase involved monitoring of the students' implementation of their plan. On the first two days of intervention, the teacher introduced the self-management plan and provided rational. Discussions were generated emphasizing the importance of the students accepting responsibility for their own behaviors. Freedom was lauded as the final objective of increased student responsibility and control.

On the third and fourth days of intervention the students were trained to use the self-management plan that involved the SM checklist and student log. The students were guided in identifying problem areas in their current behavior. They then asked the students to verbalize their goal of the expected behavior and record the goal on the bottom of the SM form. In SM, the students checked off their compliance with the stated survival skills. Self-evaluation occurred when students totaled the number of behaviors they had completed successfully. They then asked the students to respond in written format to these topics: "What I did successfully to meet my goal.", "What I didn't do successfully to meet my goal." and "What I need to do to be more efficient."

A Likert-type scale ranging from 0 (least satisfaction) to 5 (greatest satisfaction) was used by the students during self-reinforcement to record their level of satisfaction with their efforts. On the fifth day, the students verbally rehearsed their self-management

plan and were provided with guided practice and verbal feedback from the teacher. Monitoring began on day six. Each student met with the teacher for a 15 to 20 minute period each day. The student reviewed his or her SM form and completed the student log. The teacher provided verbal praise and suggestions for meeting goals not yet attained.

Intervention I continued until the students showed 100% of the behaviors on the checklist for three consecutive days. Intervention II trained the students to generalize their acquired skills to the mainstreamed classes. At the beginning of the week, the students would fill out a new monitoring form for each class setting. The student would set a new goal based upon his self-evaluation from the previous week. Daily monitoring and weekly goal setting continued until the student successfully mastered targeted behaviors for a least five consecutive days.

Fading I required the students to use all the components of the self-management plan, but the students met with the teacher every other day. During Fading II the students still met with the teacher every other day, but the written components were condensed into one simplified form. Finally in Fading III the student met with the teacher once a week until he or she displayed consistent performance in seven of eight sessions.

During maintenance, the teacher met with the student once a week. The student was now given a choice to stop all written components of the plan. The study showed increased student performance during each phase of the interventions. The students, themselves, rated the intervention a "4" or "5" for being satisfied with the progress they made (Synder & Bambara 1997).

Next the effectiveness of SM procedures on students increasing completion of their homework was reported. Eight secondary students were involved in the intervention. All of the students had learning disabilities. The students' ages ranged from 13 to 16 years of age and attended grades seven through ten. A multiple baseline design was used. The students were required to complete assignment sheets that recorded the total number of assignments and the total number of assignments completed. The students then graphed their performance. The increase of completed assignments seems to have been affected by goal-setting and self-graphing. To complete the assignment sheet properly, modeling and guided practice strategies was used by the teacher.

The SM intervention began after baseline for each student was obtained. The SM continued for 11 consecutive school days. Bubble gum was used each day as a reinforcer for the first ten days the assignment sheets correlated with the teacher's records. Each student graphed their homework data. The graphs for three day intervals were displayed in the resource room. During the final phase they removed the assignment sheet and graphing.

SM resulted in increased completion of homework assignments. The increased amount remained during self-graphing and the goal-setting phase. They observed maintenance for up to 110 days following fading. Students themselves felt the assignment sheets helped them to increase their homework completion (Trammel et al. 1994).

Effects of self-monitoring on on-task behavior

Non-disabled students:

An analysis of the multiple disruptive behaviors of a kindergarten student was the next study reviewed. An intervention combining SM with reinforcement was implemented. Because assessment determined that the kindergarten student engaged in disruptive behavior to gain attention, a self-management program was designed that reinforced desired behaviors. The procedure used was as follows. When the audio tone was heard, if the kindergarten student was engaged in appropriate behavior, he was instructed, by his teacher, to draw a happy face. This enabled the student to be actively involved in the procedure. The number of disruptive behaviors decreased and was replaced by appropriate behaviors (Storey & Lawry 1994).

According to a study conducted by Hughes and Hendrickson, 1987, SM procedures improved the skills for students whom their teachers had targeted as at-risk for school failure and students who were not considered at-risk. Both groups of students showed significant gain in attending behaviors with the use of the SM procedures (Prater 1994).

An adaptation of individual SM to increase self-control in a group of students at-risk was termed whole class monitoring. Whole class monitoring involves frequent evenly spaced behavior checks, an operant response to a signal, and self-reporting. To implement this experiment the class schedule needed to be adjusted so students would know what activities preceded behavior checks. Next a cue was employed. An alarm on a computer set rang at 30 minute intervals. A tracking sheet was used to reflect the class schedule. The students were asked to raise the sheet when they heard the audio cue.

Emphasis should be placed on honest, accurate recording. The mark the student

gives himself should never be changed. The time between behavior checks should be increased as the intervention continues. This begins the fading. On-task time was greatly increased through use of this whole class intervention (Romer 1997).

Another study utilized the whole class in the intervention. Students were asked before each activity time, the number of off-task behaviors that would be acceptable. They recorded the goal and the actual number of off-task behaviors that occurred on a chart. When they obtained a group goal, a check was placed on the chart. Reinforcers were also used to encourage targeted behaviors. Group off-task behaviors decreased (Carpenter & McKee-Higgins 1996).

Self-management procedures were also found successful in helping children who were experiencing difficulty during recess time. Recess requires more individual self-control of behavior. This is congruent with the idea of SM. This study used a peer-mediated approach to the self-management procedure. Children have greater access to their peers than adults during recess. According to Fowler, 1984, and Greenwood and Hopp, 1981, self-management procedures that encourage use of peers facilitate a generalization of behavior change. Also, based on Rosenbaum and Drabman's, 1979, research with disruptive children, shifting control from the student to the teacher may result in high incidences of undesirable behaviors. Lastly, Smith et al., 1992, used a form of peer-mediated self-evaluation to facilitate gains from special education settings to regular education settings (Nelson et al. 1995). Ninness, Fuerst, Rutherford, and Glenn, 1991, used a multi component SM intervention combined with token reinforcement with junior high students during unsupervised periods. They also found a decrease in off-task

behavior (McDougall & Brady 1995).

Learning disabled students:

Harris, et al. 1994, attempted to extend and replicate his 1986 study. The students involved were fourth and fifth grade students with learning disabilities. These students were chosen because of their difficulty completing assignments and attending. On-task behavior was defined as occurring when the following conditions were met: A-eyes were focused on spelling list, practice, paper, or SM sheet; B-any step in the spelling procedure was performed; C-students asked for assistance from the teacher. Behavior was measured using three second intervals during the final ten minutes of the spelling period. Academic performance was defined as the total number of words written correctly from the weekly spelling list. This was done during the daily practice session.

At the end of the study, student interviews were conducted by the classroom teacher. Data was obtained on the students' perceived efficacy, preferences, and any other feedback. The only difference between the attention monitoring from Harris, 1986 was the inclusion of graphing. Students graphed their number of " yes" responses at the end of each session. Both interventions, SMA and SMP had a positive impact on the students. All students increased their on-task time.

The second experiment results correlated with the first. Use of either intervention had positive effects on the students' writing performance. SMP appeared to result in longer and better stories written. On-task behavior time also increased for all students (Harris et al. 1994).

Prater, Plank, and Miller, 1991, demonstrated the effectiveness of SM for on-task

behavior with a 13-year-old male student classified emotionally disturbed. On-task behaviors were defined for the student. Once baseline data was recorded, the student was taught the SM procedures. Prater, Plank, and Miller used the auditory tone cure for two minute intervals over a thirty minute span of time. The student, upon hearing the tone, would ask himself, if he was on-task and record accordingly. They faded the time between audio intervals from two to three to five minute intervals. During the last phase the audio prompt was removed completely. Only the SM sheet was still used. The study proved the SM produced a positive increase in on-task behavior even after fading and the removal of audio prompts. This study did utilize reinforcers with the SM procedures.

Another study, using a 15-year-old student classified as behaviorally disordered was reviewed. They taught this student to use a combination of SM with self-instruction to eliminate disruptive behaviors. They taught the student the procedure in the resource center. After fading had occurred in the resource center, they instructed the student to use the strategy in the regular education classroom whenever he felt angry or frustrated. According to Hogan, and Parter, 1993, transference occurred and the student was successful in eliminating disruptive behaviors in both settings (Prater 1994).

The next study viewed attempted to characterize the behavior of students who have learning disabilities in their mainstream academic classes. These students were compared with a control group of non-handicapped peers. They also compared these students with a small group of students with the classification of emotionally disturbed who were in the same class.

Data from this study concluded the students with learning disabilities are passive

learners who come to class unprepared or ill prepared; spend approximately 40% of the class time engaged in off-task behaviors; follow procedure if the teacher directs it; avoid volunteering information; and seldom answer a question (Zigmond et al. 1988).

Finally, the last study used subjects who were secondary level students in three different classes. The class "A" was a class on economics and government. The students' ages ranged from 15 to 17 years old. Class "B": was studying learning strategies, writing and reading skills. Their ages ranged from 14 to 17 years old. Class "C" was studying materials to pass the state required reading proficiency test. These students' ages ranged from 16 to 18 years old. Only four target students were chosen from each class based upon teachers' recommendations for exhibiting varieties of off-task behaviors disruptive to others in the class. All students were involved in SM process, but only four from each class were considered the target students.

On-task behavior was defined as looking at a movie or the teacher; talking with the teacher; reading materials that were assigned; and working on a written assignment. Data was collected for the 40 minutes in the middle of each 55 minute period.
A multiple-baseline design across the groups was used. The students were given two different monitoring sheets. Both sheets had the target behaviors listed. The students were required to put a "+" if they were on-task and a "0" if they were not.

Throughout all the interventions an audio tone would chime every five minutes for the teacher to use to record the target behaviors. The students were told the tone was a new teaching method the teacher was using and were asked to ignore it.

Training on the SM procedure preceded the first intervention. Discussions were

held defining 'on-task' behavior and the importance to the student of exhibiting on-task behavior. Baseline data was gathered for five days before the interventions began. During Intervention I, every five minutes a verbal cue "record" was emitted. For a two-day period, students were reminded by the teacher to record "+" if they were actively engaged and a "0" if they were not. Accuracy and honesty of recording were encouraged and praised. The teacher continued to record at both the audio tone and the verbal cue "record."

During Intervention II, the verbal cue "record" was emitted in ten minute intervals. Again verbal reminders were given by the teacher for two days and the teacher continued to record on the tone and the verbal "record."

During Intervention III, fading began of the verbal cue. The verbal cue "record" was emitted at twenty and forty minute times. A visual reminder with a clock was written on the monitoring forms at ten and thirty minute times. Reminders were still given and the teachers recording method remained the same.

Intervention IV had no audio cue. The monitoring sheets had visual clock reminders at ten-minute intervals. Behavior and accuracy reminders were still given. The teacher's tone continued to play as the teacher continued the five minute recordings.

Data collected revealed a direct relationship between SM and increased time-on-task. The students' increased on-task behaviors maintained at a level of 80% to 91%. The results indicate that the students continued to record with the absence of the verbal cue "record." (Blick & Test 1987).

Concluding comments on effectiveness of self-monitoring interventions

All students, those with and without disabilities, benefit from the use of pro active behavior management programs. They are an effective means of responding to the diverse needs of a diverse student population (Carpenter & McKee-Higgins 1996). The effect of self-monitoring on on-task behavior has been demonstrated across many age levels and different instructional settings: Hallahan et al., 1981; Harris, 1986b; Harris et al, 1994 (Exp. 1); Lloyd et al., 1989, all show durable effects that have been maintained for several months (Reid 1996). Briggs, et al., 1990, study of adolescents who used walkmen to provide cues, found the individuals generalized their use of SM to other tasks and maintained high performance levels for four weeks after completing SM training. Misra, 1992, also found generalization occurred for adults with mild mental retardation who had used SM to improve their social skills (McDougall & Brady 1995). Hughes et al., 1989, state many SM interventions include external management components involving the teacher. This can influence how well generalization will occur. Baer, 1984, states this causes student to not really become self-sufficient (Synder & Bambara 1997). Cole and Bambara, 1992, state that documented evidence for promoting generalization as a result of self-management is limited. Blanford and Lloyd, 1987; Ellis, Deshler, and Schumaker, 1989; Smith, Young, West, Morgan, and Rhode, 1988 found that students with mild disabilities do not automatically transfer their new skills to a new setting. Rhode, Morgan, and Young, 1983, suggest if generalization did not occur, that the regular education teacher might have to cue or monitor the students' progress in their classrooms. Smith et al., 1988, state if the teacher is not vested in the procedure, facilitation will not occur. Ellis et al., 1989, suggest using a pro active approach. While

teaching the student the SM procedures, training for generalization should be concurrent. Expectations of transference of the targeted behaviors to other settings should be clearly stated to the student. The special education teacher or support person can provide positive feedback, correction if needed, and support (Synder & Bambara 1997).

SM with students with learning disabilities can now be viewed as a mature intervention. There is sufficient evidence that supports the positive effects of SM on both on-task behavior and productivity. There are enough studies using SM to provide a useful guide for those wishing to implement the intervention.

The value the individual places on the targeted behavior may directly affect SM outcomes (Reid 1996). Harris, 1982 states students should be taught effective study techniques before SM techniques so they will use time they gain by increased on-task behavior in a productive way (Harris et al. 1994). To insure the result of SM (internalization) is successful, the teacher must turn as much responsibility of the intervention to the student as soon as possible. If the student is actively involved in evaluating and setting goals, he will be the best judge of when the external supports (SM sheets) can be removed.

Harris, 1986b; Lloyd, Bateman, Landrum, and Hallahan, 1989; Reid and Harris, 1993; and Roberts and Nelson, 1981, all demonstrate the effectiveness of SM for academic performance improvement with students with learning disabilities. In SMP variable the students are required to self-assess their productivity by charting the number of correct responses. The effectiveness of the SM intervention can be ascertained by the students' ongoing records (Rankin & Reid 1995).

CHAPTER III

DESIGN OF THE STUDY

Population for this study

The population for this study is students receiving supplemental instruction one period per day. The students are in grades nine through 12 at Delsea Regional High School. There are approximately 1100 students attending the high school. Of this total, about 30% receive special education services.

Students for this study include seven students in Class A. Class A is composed of three female and four male students. Four of the students are in the tenth grade. Three of the students are in the eleventh grade. One eleventh grade student (student 6) is classified PI (perceptually impaired). She is 17 years of age. She is mainstreamed for all academic subjects with the exception of math. Word recognition skills are satisfactory and stronger than her comprehension skills. Improvement is needed in better sentence structure and quality of expression. Basic math facts have been mastered but difficulty is experienced in remembering sequence in multi step problems. Cognitive function is within average range. The next eleventh grade female student (student 5) is also 17 years

old. She is classified PI. Literal reading comprehension is satisfactory; however, difficulty is found with inferential and critical comprehension. She experiences difficulty with higher order thinking skills. She receives math instruction in the resource center. All other instruction is in the mainstreamed classes. The last female student (student 1) is in the tenth grade. She is 15 years old. She is classified PI. Her reading decoding skills are fair. Her comprehension skills aided by constant repetition are strong. Her math skills are satisfactory. She is mainstreamed for social studies, academic biology, English, math, and all electives. Instruction in reading and writing is received in the resource center. The only eleventh grade male student (student 3) is 17 years old. He is classified CH (Communication Handicapped). His hyperactivity, which manifests verbally, limits his success in school. A good sight vocabulary, word recognition, and oral comprehension are learning strengths. Reading skills remain weak. Math skills are satisfactory but his impulsivity impedes his success. He receives health, reading and writing, and English in the resource center. All other instruction is received in the mainstream. The first tenth grade male student (student 4) is 16 years old. He is classified PI. He functions within the low average range of cognitive abilities. He has weaknesses in vocabulary, storytelling, and long term memory. His strengths include short term memory, attention and reading comprehension. He receives math, and reading and writing instruction in the resource center. All other instruction is in the mainstream classes. The second tenth grade male student (student 7) is 16 years old. He is classified PI. Relative strengths are his reading decoding and comprehension skills. Inability to complete homework and project work has impeded his success in mainstream

classes. He receives math, and reading and writing instruction in the resource center. All other instruction is in the mainstream class. The last tenth grade student (student 2) is 16 years old. He is classified PI. Math concepts and computational skills are satisfactory. Written language skills need developing. Inability to remain focused and on-task interferes with academic success. He receives math instruction in the resource center. All other instruction is received in the mainstream classes.

Class B is comprised of eight students. There are two female and six male students. There are two twelfth graders, two eleventh graders, and four tenth graders. The first female student (student 1) is a 17-year-old eleventh grader. She is classified PI. Basic facts in math have been mastered, but difficulty is experienced in multi step procedures. Literal reading comprehension is satisfactory, but difficulty is experienced with inferential and critical comprehension. Written language is impeded by difficulty in sequencing organized paragraphs. She also experiences great difficulty in testing. She receives instruction in all mainstream academic classes. The second female student (student 6) is a 15-year-old tenth grader. She is classified PI. Math skills are weak. She learns best when information is presented in chunks. She receives math and reading and writing instruction in the resource center. She receives all other instruction in the mainstream classes. The first male student (student 5) is an 18-year-old senior. He is classified PI. He has good reading decoding and literal comprehension skills. He has difficulty with both inferential and critical thinking comprehension skills. His basic math acquisition is satisfactory. He receives instruction in reading and writing, health, and math in the resource center. All other instruction is in the mainstream classes. The

second male student (student 7) is a 17-year-old senior. He is classified PI and dyslexic. His math ability is excellent. His reading comprehension skills are good. His written skills are satisfactory but could use improvement in appropriate mechanics and usage. He receives instruction in all mainstream classes. The next eleventh grade student is a 17-year-old male (student 4). He is classified PI. Motivation and confidence play a major role in his academic success. As soon as he starts to feel challenged, he wants to change courses to something less difficult. He receives instruction in all mainstream classes. The next male student (student 3) is a 15-year-old in the tenth grade. He is classified PI. He is diagnosed with ADHD. He is currently on Ritalin therapy. Reading comprehension is satisfactory but can cause some difficulties for him. His math skills are good. He has difficulty transferring his thoughts to written form. He receives instruction in all mainstream classes. The next male student (student 2) is a 16-year-old tenth grader. He is classified ED (Emotionally Disturbed). He functions within the average to high average range in many subject areas. His academic success is impeded by latenesses, cuts, and oppositional behavior. He receives all instruction in mainstream classes. The next tenth grade male (student 8) is 15 years old. He is classified PI. He has good reading decoding and comprehension skills. He has difficulty with written language. He also has difficulty with math. He is self-motivated and goal directed toward college. He receives all instruction in the mainstream classes.

Experimental site

Delsea Regional High School is located in Franklinville, New Jersey. Both Franklin Township and Elk Township students attend Delsea. The area is mainly rural

with much of it farmland. The economic status of the majority of the students is low. The following is the composite of the student population: 80% Caucasian, 15% African-American, and 5% Hispanic and Asian. The students represented in this study are composed of: 77% Caucasian, 14% African-American, and 9% Hispanic .

Method of sample selection

The 15 students selected for this study are taught by the researcher of this study. Two classes with a total of 15 students participated in this study. The two classes receive supplemental instruction in the Resource Center one period each day. They receive individual tutorial assistance where individual needs indicate. The mean age for Class A is 16.28 years and for Class B it is 16.25 years.

Procedure

The researcher compared the results between baseline data and the data obtained during three different types of interventions. Baseline data was collected for five consecutive school days. Using an average of six five-minute intervals, the researcher used a check off method to indicate if the students were on or off task at the time of the observation.

After baseline data was collected, for five consecutive school days, using time in a productive manner was discussed. Explicit examples of "useful" versus "not useful" were generated and listed on the board. The importance of using all available time was discussed. Responses were elicited from students on why it is important to use time beneficially. The term "Action List" was defined. Formulating and using an action list was discussed as a strategy for utilizing time in a productive and on-task manner.

Appropriate action lists were created, discussed and practiced. Benefits of a written action list were discussed.

The self-monitoring procedure was then introduced and explained. The researcher modeled the procedure for the students. The students practiced the procedure for three days before data was collected by the students.

Intervention I involved self-monitoring to assess possession and use of a written action list. This phase continued for eight consecutive school days. The students used a modified version of a behavior check list (Appendix A). The following behaviors are included on the check list:

1. I brought a written action list to class.
2. I brought my assignment book to class.
3. I brought a pen or pencil to class.
4. I brought the text books I need to class.
5. I did everything on my action list.
6. My action list provided work for the entire period.
7. I worked the entire class period.
8. I stayed in my seat the entire period.
9. I was quiet the entire period.
10. I finished my work and then read quietly.

The students were instructed to fill out their "point sheets" as they always had, but for this interval of time "honesty" not "behaviors" was being awarded points which would transfer to their grade. Items one through four were filled in immediately upon arriving

in the classroom. The students were instructed to fill in items five through ten upon teacher direction at the end of the class period. Each item on the list was awarded ten points. The students' grade was based upon the number of times their "yes" or "no" check matched the researchers. The purpose of attributing points to "honesty" versus "behaviors" was to encourage honest self-recording and evaluation on the part of the students without fear of negative repercussions.

After eight days of this procedure, "on-task" behaviors were discussed and listed on the board. For the purpose of this experiment "on-task" behavior was defined in the following five categories. The first category, " work," was defined as actively doing back work from their classroom work folders, a written academic assignment, or homework. The second category, "study," was defined as rereading an academic subject area text book, rereading class notes, rewriting class notes, or preparing for an upcoming test. The third category was staying in their assigned seats. The fourth category of "on-task" behavior was receiving tutoring from the teacher. The last category was participating in approved peer tutoring. This phase of the experiment continued for nine days. The students were given an amended "Behavior List" which added "I filled in the **entire** form for the **appropriate** day" and "I arrived to class on time" and "I placed my folder back into the class folder." "I did everything on my action list" was eliminated (Appendix B).

On the tenth day, Intervention II was explained, modeled and practiced by the students for one class period. This intervention involved the use of an audio-cue to monitor on-task behavior. The students received a second monitoring sheet to record

"yes" or "no" to the question "Am I on task?" each time they heard the audio-cue. The first behavior check list which was given to the students during Intervention I was still being used. The students were concurrently using the behavior check list to monitor use of a written action list and the on-task check list to monitor with the audio cue.

Nine days following Intervention II, Intervention III began. This was the graphing phase of the experiment. Graphing procedures were taught and modeled by the researcher. This intervention was added to Intervention I and Intervention II. The students were asked to graph the number of "yes" responses on their "on-task" sheets and plot the dot on their graphs. They were then instructed to count the number of "yes" responses from their "behavior lists" and plot the dot on their graphs. The researcher demonstrated the graphing procedure on the board each day while providing step by step directions and individual assistance as needed.

After ten consecutive school days Fading I began. Students were instructed to stop self-monitoring on the possession of a written action list. The students were still expected to have a written or mental action list, but they did not have to produce it to receive the credit on the behavior check list.

Fading II began five days later. The audio-cue was stopped. Students were instructed to monitor their on-task behavior only when "you think of it." The researcher provided verbal prompts several times a class period.

After five consecutive school days, Fading III was implemented. Students were instructed to stop graphing their "yes" responses. The final stage, Post, began five days later. Students were instructed to stop all written self-monitoring procedures. During all

fading stages the researcher continued to record data on on-task behavior for an average of six five-minute intervals each class period.

CHAPTER IV

ANALYSIS OF THE DATA

The purpose of this study was to determine the effects of self-monitoring, the use of a predetermined written action list, and graphing of on-task behaviors occurring during independent work time on on-task behavior time. The population of this study consisted of two classes of high school students during their supplemental instruction period. Class A comprised seven students who remained in this section of supplemental instruction from the beginning until the end of the study. Class B comprised eight students who remained in this section of supplemental instruction from the beginning until the end of the study.

TABLE 1: Mean Scores on On-task & Behavior list Variables

Variable	Pre	Intervention Phase			Fading Phase			Post
		AL	AC	G	AL	AC	G	
OT	40	47	62	52	78	50	45	34
BL	78	55	71	68	80	74	70	56

The mean scores obtained throughout the study for the on-task variable (OT) and the behavior list variable (BL) are listed in Table 1. Graph 1, found on page 66,

provides graphic representation in a vertical bar graph format of OT mean percentages and BL mean percentages. The mean score for on-task behavior decreased from the baseline score of 40% to the post observation score of 34%. The mean score for the behavior list also decreased from the baseline score of 78% to the post observation score of 56%. The highest mean score obtained for on-task behavior (78%) and behavior list behavior (80%) was during the Fading Action List Phase. The next highest score obtained for the On-Task variable was during the Intervention II phase or the AC (Audio-Cue) phase (62%). This was followed by the Intervention III phase or the G (Graphing) phase (52%), the Fading II phase or the F-AC (Fading Audio Cue) phase (50%), the Intervention I phase or the AL (Action List) phase (47%), the Fading III phase or the F-G (Fading Graphing) phase (45%) and finally the Post observation or Post phase (34%).

The highest BL (Behavior List) percentage occurred during the Fading Action List Phase (80%), followed by Pre Phase (78%), Fading Audio Cue Phase (74%), Audio Cue Phase (71%), Fading Graphing Phase (70%), Graphing Phase (68%), Post Phase (56%) and finally the Action List Phase (55%). A " T- Test" was performed on the BL variable with the Action List and Audio Cue conditions. A statistically significant increase was determined ($t=3.6$ $p<.01$). When comparing the OT variable with the Fading Action List and Fading Audio Cue conditions, a significant decrease was determined ($t=4.2$ $p<.01$). All other differences were not statistically significant.

The data for this study was obtained from both the researcher's and the students' daily observations and monitoring check lists. Table 2 and Table 3 lists each student's identity as a combination letter and number. All students comprising Class A are

indicated A1 through A7. All students comprising Class B are indicated B1 through B8. Of the 15 students who participated in this study, PI (Perceptually Impaired) is the category represented the most with 13 students being classified PI. Only one student is classified CH (Communicationally Handicapped) and one student is classified ED (Emotionally Disturbed). Four of the students who are classified PI also experience difficulty with staying focused. One of the students who is classified PI is also dyslexic.

Table 2: Pre, Post and Intervention Data on On-task & Behavior list Variables

Students	Pre		Action List		Audio Cue		Graphing		Post	
	OT	BL	OT	BL	OT	BL	OT	BL	OT	BL
A1	66	93	87	90	97	88	94	87	57	77
A2	18	61	15	43	82	80	65	62	5	48
A3	35	62	34	66	51	78	49	76	14	48
A4	36	80	33	55	68	67	45	75	36	50
A5	8	65	24	61	82	88	74	88	38	61
A6	39	72	38	58	39	52	14	51	17	35
A7	30	65	43	61	37	54	33	55	0	27
B1	14	91	6	65	46	46	6	69	8	69
B2	0	60	14	18	50	48	44	43	3	43
B3	42		66	56	64	72	47	58	0	22
B4	68	98	66	79	37	63	22	53	95	75
B5	0	83	48	50	82	71	65	78	90	88
B6	75	65	50	17	44	56	13	38	26	67
B7	100	100	73	63	94	94	100	97	38	56
B8	62	100	72	70	100	87	100	84	79	83

Table 2 lists the data obtained during the baseline observation period, the three intervention phases, and the final fading phase which was the post observation phase.

The first column identifies each student by class and number. The second column provides pre observation data on the percentage of on-task behaviors and the percentage of behavior list behaviors completed. The third column represents data obtained during the Intervention I phase, the use of a predetermined written action list. This was the phase where the students received instruction on "useful" versus "non useful" use of time and were given the strategy of compiling an action list to promote "useful" use of time. The OT category indicates the percentage of on-task behaviors and the BL category indicates the percentage of behavior list behaviors completed.

The third column indicates data obtained during the Intervention II Phase. This was the phase where the students were instructed to check "yes" or "no" to the question, "Am I On Task?" each time they heard the audio cue. The on-task behaviors had been discussed and listed on the board for the students' use. Periodically, the students were reminded of what constituted "on-task" behavior.

The fourth column indicates data obtained during the Intervention III Phase. During this phase the students were asked to graph the number of "yes" responses from both their "On-Task" forms (see Appendix A on page 62) and their "Behavior List" forms (see Appendix B on page 63). They were given instruction and assistance as needed on graphing procedures. The last column indicates data obtained during the Post Phase of this study. This was the phase where all interventions had been faded.

Table 3 lists the data obtained during the pre observation period, fading phases, and the post observation period of the study.

Table 3: Pre, Post, and Fading Data for On-task & Behavior list Variables

Students	Pre		Fading Action List		Fading Audio Cue		Fading Graphing		Post	
	OT	BL	OT	BL	OT	BL	OT	BL	OT	BL
A1	66	93	100	92	100	94	66	82	57	77
A2	18	61	100	79	93	94	62	75	5	48
A3	35	62	86	83	36	56	15	58	14	48
A4	36	80			0	72	84	92	36	50
A5	8	65	78	89	76	100	61	72	38	61
A6	39	72	73	64	68	58	53	69	17	35
A7	30	65	58	64	0	29	48	58	0	27
B1	14	91	43	73	43	79	0	67	6	65
B2	0	60	50	46	6	42	13	43	3	43
B3	42		70	79	65	69	31	55	0	22
B4	68	98	67	92	15	92	47	79	95	75
B5	0	83	75	89	49	69	48	69	90	88
B6	75	65	90	83	70	85	72	70	26	67
B7	100	100	100	96	75	92	33	80	38	56
B8	62	100	100	96	59	79	69	85	79	83

Column 1 lists the students by class and number. Column 2 lists the data obtained during the pre observation period of this study. Column 3 indicates Fading I, which was discontinuing the use of a written action list. During this phase the students no longer had to show the researcher their written action list to receive point credit on the "Behavior List." Use of a written action list was still encouraged but no longer mandatory. Audio cue monitoring and graphing of "yes" responses were still occurring. Column 4 lists the data obtained during the Fading II Phase. Audio cue monitoring stopped. The students no longer received the audio cue to remind them to stay on task. They were asked to monitor if they were on task as they remembered. The graphing of

"yes" responses still continued. Column 5 lists the data obtained during the Fading III Phase. Graphing of "yes" responses stopped. The students were still monitoring with their "Behavior List" and " On-Task List" but were no longer required to graph their responses. All monitoring was being done only as the students thought of it. The last column indicates data gathered during the post observation period. The post observation period was the final week of the study when all written monitoring stopped. Students no longer had to monitor their on task behavior.

Table 4 Percentage Gains & Losses

S	Pre		Post		Action List		Audio Cue		Graphing		Fading Action List		Fading Audio Cue		Fading Graphing	
	OT	BL	OT	BL	OT	BL	OT	BL	OT	BL	OT	BL	OT	BL	OT	BL
A1	66	93	-9	-16	+21	-3	+31	-5	+28	-6	+34	-1	+34	+5	0	-11
A2	18	61	-13	-13	-3	-18	+64	+19	+47	+1	+82	+18	+75	+33	+44	+14
A3	35	62	-21	-14	-1	+4	+16	+16	+14	+14	+51	+21	+1	-6	-19	-4
A4	36	80	0	-30	-3	-25	+32	-13	+9	-5	X	X	-36	-8	+48	+12
A5	8	65	-30	-4	+16	-4	+74	+23	+66	+23	+70	+24	+68	+35	+53	+7
A6	39	72	-22	-37	-1	-14	0	-20	-25	-21	+34	-8	+29	-14	+17	-3
A7	30	65	-30	-38	+13	-4	+7	-11	+3	-10	+28	-1	-30	-36	+18	-7
B1	14	91	-8	-26	+32	-45	-8	-22	-6	-22	+29	-18	+29	-12	-14	-24
B2	0	60	+3	-17	+14	-42	+50	-12	+44	-17	+50	-14	+6	-18	+13	-17
B3	42	X	-42	X	+24	X	+22	X	+5	X	+28	X	+23	X	-11	X
B4	68	98	+27	-23	-2	-19	-31	-35	-46	-45	-1	-6	-53	-6	-21	-19
B5	0	83	+90	+5	+48	-33	+82	-12	+65	-5	+75	+6	+49	-14	+48	-14
B6	75	65	-49	+2	-25	-48	-31	-9	-62	-27	+15	+18	-5	+20	-33	+5
B7	100	100	-62	-44	-27	-37	-6	-6	0	-3	0	-4	-25	-8	-67	-20
B8	62	100	+17	-17	+10	-30	+38	-13	+38	-16	+38	-4	-3	-21	+7	-15

Table 4 represents the percentage gains and losses for OT (on-task behavior) and BL (behavior list behavior) throughout the study. The gains are indicated by a "+" sign before the amount of the gain. The losses are indicated by a "-" before the amount of the

loss. Each student is once again represented by a combination of "A" or "B" and a number.

Only 27% of the population maintained an increase in on-task behavior during the Post phase of the study. Even less of the population, 14%, showed an increase in behavior list behavior during the Post phase of the study. One student maintained their on-task behavior during Post which had been established during Baseline. Class A had a 0% increase in on-task behavior during the Post phase of the study. Class B had a 50% increase in on-task behavior during the Post phase. Class A also had a 0% increase in behavior list behavior during the Post phase. Class B showed a 29% increase during the Post phase.

Student B5 showed the highest increase in OT from Baseline of 0% to Post of 90%. The Intervention II phase, audio cue, was the most effective for this student (82%). Student B4 showed the next highest gain of 27%. This gain was evident only during the Post phase. During all other phases this student experienced percentage losses. For BL during the Post phase, this student had a 23% decrease. The next student, B8, had a 17% increase. This student experienced a 38% gain during Intervention II (Audio Cue), Intervention III (Graphing) and the Fading I (Action List) phase. This student experienced a 17% decrease in BL during the Post phase. Student B2 saw a slight increase in OT during Post (3%). Highest gains were experienced during both Audio Cue and Fading Action List (50%). A 44% increase was seen during Graphing phase. This student had a loss of 17% for BL during Post. Student A4 remained the same during Post as during Baseline with 36% on-task behavior. The greatest gain experienced was during

the Fading III (Graphing) phase at 48%. The next highest gain for this student was during the Audio Cue phase (32%). The Graphing phase also saw a positive gain (9%) for this student. The BL during Post for this student was a loss of 30%. All other phases experienced loss also.

CHAPTER V

SUMMARY AND CONCLUSION

Summary

Life today is very challenging. One of life's biggest challenges is the organization of time, energy and resources. Many individuals experience difficulty in time management. This seems to be especially true of young adults between the ages of thirteen and nineteen. The skill of time management must be taught; it is not inherent. Management of unstructured, independent study time has proven especially challenging to some special needs population.

The single most common variable reported in self-monitoring interventions is on-task behavior (Reid 1996). This researcher felt if the special needs students of this study, who were predominately PI, were made more aware of how they were using their study time, that they would make a more concerted effort to use their time productively.

The hypothesis for this study was that students in the supplemental instruction program would decrease their incidences of off-task behavior by bringing a predetermined written action list with them to class, self-evaluating adherence to their

action list, self-monitoring and graphing their on-task behaviors.

The literature review of this study included studies which reported self-monitoring as a useful strategy in helping students manages their own behavior. With the management of their own behavior, students would be more likely to be successful in mainstream settings. Reid (1996) states that according to the United States Department of Education, 1990, a high percentage of students with learning disabilities spend more than 80% of their time in the regular education classes. (Rankin & Reid 1995) stated that students needed to believe in the relevance and importance of what they were doing to be successful. Harris, 1982 states students should be taught effective study techniques before self-monitoring techniques so they will use time they gain by increased on-task behavior in a productive way (Harris et al. 1994).

All three interventions, the written action list, audio cue, and graphing on-task behaviors, were effective in increasing on-task behavior time. The most effective was the audio cue. In all phases where the audio cue was being utilized the students' on-task behaviors were higher than in phases were the audio cue was not present. The three interventions were not effective in increasing behavior list behaviors until the first fading phase began. At this point in the study, all three interventions were being used concurrently.

The mean percentage for on-task behavior (OT) was higher than baseline during all phases of the study except the Post phase. This phase realized a 6% decrease in on-task behavior. The mean percentage for behavior list behavior (BL) realized a decrease during all phases of this study except during the Fading I phase, Fading of the Action List

(F-AL). During Fading Action List, a slight increase of 2% was actualized. The hypothesis of this study was supported for the on-task variable but not significantly for the behavior list variable. The use of a predetermined written action list, the ALcondition (+3%) was not as effective to the on-task variable as was the audio cue (AC)condition (+22%). The graphing (G)condition (+12%) was only slightly more effective than the action list condition and less effective than the addition of the audio cue condition. The most significant increase in on-task behavior occurred during the Fading Action List Phase (+38%). This was followed by Audio Cue Phase (+22%), then Graphing Phase (+12%), Fading Audio Cue Phase (+10%), Action List Phase (+7%), and lastly the Fading Graphing Phase (+5%). The behavior list behavior variable realized mostly losses. The only increase occurred during the Fading Action List Phase (2%). The remaining losses were the Action List Phase (23%), Post Phase (22%), Graphing Phase (10%), Fading Graphing Phase (8%), Audio Cue Phase (7%), and lastly the Fading Audio Cue Phase (4%).

While gathering baseline data, many of my students became suspicious. I was not giving them any verbal cues to return to task, stop talking, etc. They kept asking me what was wrong. Finally, after the week of gathering baseline data was over, I explained to the students why I had not been responding to their off-task behaviors. I was honest with them and told them that with their permission, I was going to use them for my thesis. Most of my students know that I am a graduate student. At first, they demanded to know why they had been chosen. They wanted to know if it was because they were the stupidest. I told them I had chosen my two classes who were least productive on a

consistent basis.

In the beginning many of the students who participated in this study were amused that I was "teaching" them. In their minds, unless a structured lesson is presented there is no teaching taking place. The format of the supplemental program requires me to tutor individuals as needed on many varied skills. There is no time for structured lessons. While trying to explain the purpose of the intervention, the students were cooperative.

It is hard to determine if the on-task behavior results were as high as they could have been. Many factors limited the success of this self-monitoring intervention. First, and most importantly was the structure of the class. I could not stop providing the services needed from the supplemental program to insure the maximum results of the self-monitoring. During the course of the study, several students were assigned research papers from their English classes. They needed to utilize the supplemental time for library research. This diminished the time spent in the supplemental classroom during the interventions.

Secondly, as research has proven, and as indicated earlier in this study, strategies need to be taught if the maximum study potential is to be realized from increased on-task time. The structure and the individual needs of the students in the supplemental program prohibit this. Sufficient time is not available to teach the strategies needed.

Another factor which affected this study was the relevance the students felt for the goal of increasing productive use of independent study time. Most still felt if they did not have a written task to do, they were justified in nonproductive use of this period of time. Again, there was not enough time to try to elaborate and extend upon the necessities of

different types of studying.

The first limitation of this study was the changing student population. Some students left the classes and others entered. Their data was not reported or tabulated into the data of the study, but their behaviors definitely affected the classes' behavior as a group. This is another factor that remains out of my control. Learning disabled students tend to have much mobility in their schedules during the course of a school year.

Another limitation of this study was time. I would have preferred to use a percentage gain as an indicator to continue from one phase to the next instead of calendar days. This, however, was not possible.

The final limitation of this study was the " Behavior List Behaviors." This was an adaptation from a point sheet the students were familiar with and had been using all year. In retrospect, I feel the sheet addressed too many behaviors and should have been limited to just the target behaviors involving the action list.

Researchers who conduct follow up studies involving the use of a predetermined action list, audio cue, and graphing on-task behaviors to increase on-task behavior time should make sure that each variable is tested separately. Once each variable has been tested and data collected, that variable should be discontinued. This would allow a more valid result for each variable. After all variables have been tested separately, the variables may be combined to see if increased on-task behavior results.

Students participating in future studies should be given more opportunities and examples to practice on-task behaviors before data is collected. Verbal cues and praise when on-task behavior occurs will serve to help students be more aware. Once students

are able to clearly differentiate between on-task and off-task behavior all verbal cues and praise should be discontinued and only the self-monitoring employed.

Conclusion

This study examined the effects of the use of a predetermined action list, audio-cue, and graphing of on-task behaviors on the percentage of on-task behavior during independent study time. The results of the study were supportive of the OT (on-task) variable but not significantly supportive for the BL (behavior list) variable. The highest mean percentage occurred during the Fading Action List Phase. The study was in progress for 17 days when the Fading Action List Phase occurred. A higher mean percentage was evident while an audio cue remained in place during all phases of the study. This suggests to the researcher that learning disabled students, especially those who have difficulty focusing and paying attention need some type of ongoing audio cues or prompt to remain on-task. Although the self-monitoring was effective, it was the most effective while an audio-cue remained in place.

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WORKS CITED

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APPENDICES

APPENDIX A

SELF-EVALUATION FORM

ON-TASK BEHAVIOR LIST	NO	YES
1. I brought a written action list to class.		
2. I brought my assignment book **filled out** to class.		
3. I brought a pen or pencil that works to class.		
4. I brought the text books I need to class.		
5. I did everything on my action list.		
6. My action list provided work for the **entire period.**		
7. I worked the **entire class** period.		
8. I stayed in my seat the entire period.		
9. I was quiet the entire period.		
10. I finished my work, or worked all period, and then read quietly		

APPENDIX B
SELF-EVALUATION FORM

NAME_____ **PER**_____ **WEEK BEGINNING**_____

DIRECTIONS: Fill in a **"Y"** for **yes** or a **"N"** for **no**. Each "**Y**" is worth 10 points. Each "**N**" is worth 0 points.

BEHAVIORS	**M**	**T**	**W**	**R**	**F**
1. I filled in **entire** form for the **appropriate** day.					
2. I arrived to class on time.					
3. I brought my assignment book to class **filled in.**					
4. I brought my written action list to class.					
5. I brought a pen or pencil to class that writes.					
6. I brought books and materials I needed to class.					
7. My action list provided work for the **entire** period.					
8. I worked the **entire** class period.					
9. I stayed in my seat the entire class period					
10. I was quiet the entire class period.					
11. I worked 30 minutes and then read quietly.					
12. I placed my folder back into the class folder.					
TOTAL TASK POINTS EARNED					

ASSIGNMENT BOOK

	POINTS	**M**	**T**	**W**	**R**	**F**
1. I filled in **all** subjects	**100**					
2. I filled in **some** subjects	**50**					
3. I filled in **no** subjects	**0**					

Appendix C

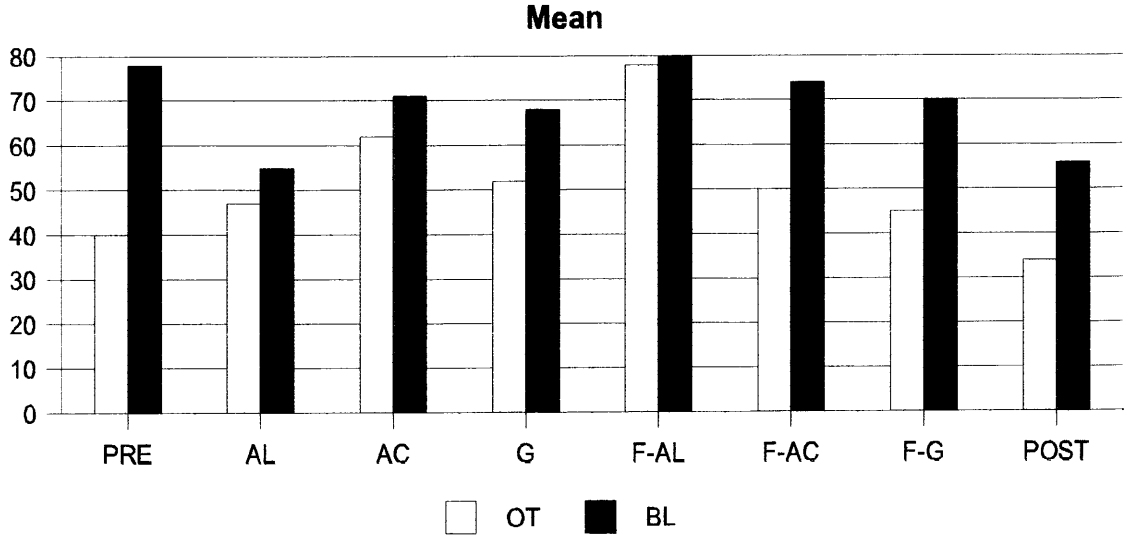
SELF-MONITORING OF ON-TASK TIME
When you hear the bell, check the appropriate box.

TIMES THE BELL RINGS	YES	NO
1 Am I on task?		
2 Am I on task?		
3 Am I on task?		
4 Am I on task?		
5 Am I on task?		
6 Am I on task?		
7 Am I on task?		
8 Am I on task?		

SELF-MONITORING OF ON-TASK TIME
When you hear the bell, check the appropriate box.

TIMES THE BELL RINGS	YES	NO
1 Am I on task?		
2 Am I on task?		
3 Am I on task?		
4 Am I on task?		
5 Am I on task?		
6 Am I on task?		
7 Am I on task?		
8 Am I on task?		

GRAPHS



VARIABLES

OT=On-Task Behavior

BL=Behavior List Behaviors

CONDITIONS

AL=Action List Intervention

AC=Audio Cue Intervention

G=Graphing Intervention

F-AL=Fading Action List

F-AC=Fading Audio Cue

F-G= Fading Graphing

BIOGRAPHICAL DATA

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