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Organization strategies to enhance math performance of high school students with attention deficit disorders

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ORGANIZATION STRATEGIES TO ENHANCE MATH PERFORMANCE OF

HIGH SCHOOL STUDENTS WITH ATTENTION DEFICIT DISORDERS

by
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A Thesis

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Thesis Chair: Dr. S. Jay Kuder, Ed.D.

Dedication

I dedicate this manuscript to my guardian angel, Jukawanna Nicole Holland

Acknowledgements

I would like to express my sincere appreciation to my daughter, Alexis, for her love and support throughout my educational career.

Abstract

Martina Wilkerson
ORGANIZATION STRATEGIES TO ENHANCE MATH PERFORMANCE OF
HIGH SCHOOL STUDENTS WITH ATTENTION DEFICIT DISORDERS
2012/13
Dr. Jay Kuder, Ph.D.
Master of Arts in Learning Disabilities

Will the use of organizational strategies and tools improve overall academic performance for students with attention deficit disorders in a high school resource room math setting? The student participants in this study were taught to use organizational strategies and tools including an assignment completion strategy, a task analysis, and notebook checks to improve their classroom participation, assignment completion, and assessment scores. The overall results indicate that the students slightly improved their academic performance upon the implementation of organizational strategies and tools. Of the data reported, 37% of the students with ADHD and 40% of students without ADHD showed improvement because of the implemented interventions. The results indicate that students with ADHD have the potential to show growth with the proper implementation of specific strategy instruction. The organization of the classroom structure can affect the organization of the students with attention deficit disorders within the classroom setting. Teaching students to be better organized can enhance academic performance in the areas of assignment completion and assessment scores.

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Chapter 1

Introduction

Teaching math to students with disabilities, particularly those with attention deficit disorders, can be quite a challenge. Math is a core content subject that is essential for success in school and life beyond school. As a teacher, I often find myself stressing the fact that "math is everywhere around you" in an effort to encourage my students to see the importance of learning math and express how vital math is to their future, regardless to their future goals. With most of the students I have taught, they have expressed fear or a negative attitude towards their ability to be successful in math, which makes teaching the subject more difficult.

Although I have employed what I viewed to be effective teaching techniques, several of my students, especially those with attention deficit disorders continue to struggle be successful. One of the reasons I discovered as a source of their lack of success was their disorganization. The students often fail to complete assignments, turn in assignments, and have low scores on math assessment.

This year I decided to try something new to help my students become more organized, which I hoped would ultimately improve their overall academic performance. I incorporated the use of interactive notebooks, which is an idea I received from a colleague who teaches science. The notebook is set up in input (teacher-supplied information) and out (student work) format, with the use of a table of contents to keep the contents organized and easy to locate. The students also use a folder to organize additional reference and assessment materials. In addition to the notebook, I still utilize the TGIF strategy and integrate technology, however, several students are still struggling

to be successful, as evidenced by the mid marking period progress evaluation. I decided to use this study as a tool to infuse new strategies into my classroom setting that will aide in making the strategies already in place more effective. In order to do so, I will implement task specific strategies that will improve student organization and motivation, thereby, improving their overall academic performance in the areas of class participation, assignment completion, and assessment scores.

Research Question

Will the use of organizational strategies and tools (entrance/exit tickets, assignment completion strategy, task analysis, and notebook checks) improve academic performance (assignment completion and assessment scores) for students with attention deficit disorders in a high school resource room, setting? An additional question this study will attempt to answer is whether improvements in student learning will be evident in other classes. The use of reinforcers may be utilized in the beginning stages to motivate the students to put the strategies to work. Surveys will be given to other content area teachers to see if the students are carrying the strategies over into their other classes, thereby, improving their school performance as a whole.

It is hypothesized that, if students with attention deficit disorders in a high school resource room setting are taught task specific learning strategies for organization, then they will improve their academic performance in the areas of assignment completion and assessment scores because they will see the rewards of their active involvement in their learning. They will learn, under the teacher's use of specific learning strategies, how to take responsibility for their learning. Students will gain motivation for learning when they see the effects of incorporating these strategies into their everyday learning, which

they can use across the curriculum resulting in improved class participation, assignment completion, and assessment scores in their other classrooms.

This topic is of great importance to me, and should be to other educators and parents, because we want our students/children to be successful in school despite the barriers, some out of their control, that may interfere with their learning. In addition to ensuring that my students retain the subject matter being taught, I believe is it also my responsibility to teach them appropriate organization skills that will ultimately teach them note-taking, test taking, and study skills. Students with attention deficit disorders may experience difficulties with the aforementioned skills. As a result of this study, I hope to show that the implementation of task specific strategies targeting specific desired behaviors will result in improved academic performance for my students who with attention deficit disorders. In addition, those students who may not have an attention deficit disorder, but other factors contributing to their lack of organization and/or overall academic performance, will benefit from the implementation of these strategies.

Key Terms

TGIF Strategy:

Teacher Directed Instruction – teacher presents pre-requisite skills, new information, vocabulary, and models examples/non-examples while asking questions to assess for understanding of the material presented.

Guided Practice Activities – the teacher guides the students through the process of completing a desired task; providing several opportunities for the students to practice the new skills.

Independent Practice Activities – students take on primary role in their learning at this point; the teacher is still available for consultation, but provides less guidance allowing the students to independently master the desired skill.

Final Assessment – this usually takes the form of a summative evaluation of the skills taught. It may be a teacher or district made assessment that measures the students' ability to move on to the next goal. Although final assessments are crucial to measure, mastery it is important for teachers to engage in ongoing assessment during the teaching process.

Implications

Teaching students how to learn is a cumbersome task. Prior to teaching the specific content goals that the students must master, the teacher should teach the students strategies that will assist in the success of their learning. Learning strategies may improve academic performance and encourage consistent structure and motivation or the student to carry over into their other classes. Proper implementation of task specific strategies should yield results that are evident shortly after implementation as well as later.

Summary

Students with attention deficit disorders have difficulties with organization, which subsequently affects assignment completion and assessment scores. This study will focus on the use of organizational strategies and tools (entrance/exit tickets, assignment completion strategy, task analysis, notebook checks) for students with attention deficit disorders to improve academic performance (assignment completion and assessment scores) in a high school resource room setting. If these students are taught task specific learning strategies for organization, then they will improve their academic performance in the areas of assignment completion and assessment scores because they will see the

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rewards of their active involvement in their learning. They will learn, under the teacher's use of specific learning strategies, how to take responsibility for their learning. Students will gain motivation for learning when they see the effects of incorporating these strategies into their everyday learning, which they can use across the curriculum resulting in improved class participation, assignment completion, and assessment scores in their other classrooms.

Chapter 2

Review of Literature

<u>Students with Attention Deficit Disorders</u>

The art of teaching is not solely about teaching students to master content area goals. In addition to ensuring that students retain the subject matter being taught, teachers are also responsible to teach their students the appropriate skills needed to access the required core curriculum content. Critical life-skills and ones necessary to optimize academic development are organizational skills. These skills can enhance their note-taking, test taking, and study skills. Improving these skills should help the students improve their overall academic performance across the content areas.

Students with attention deficit disorders often exhibit these skill deficits. According to the American Psychiatric Association (1994), attention deficit disorders can present in three ways: inattentive, hyperactivity, or combined type. Attention Deficit Disorders are defined as "a persistent pattern of inattention, impulsivity, and/or hyperactivity-impulsivity that is more frequent and severe than is typically observed in individuals at a comparable level of development" (p. 78). The criteria to be diagnosed under one of these categories include disorganization, distractibility, forgetfulness, tendency to lose things, seeming not to listen, over activity, fidgetiness, excessive talkativeness, failure to remain seated, blurting things out, and interrupting (Cook, MD, 2005). Their inattentiveness, disorganization, and poor motivation interfere with their learning and academic performance. These students tend to have organizational difficulties, which often result in their losing, forgetting, or misplacing their work and materials; having messy work areas and book bags; and failing to complete their

assignments (Salend & Rohena, 2003). Although these characteristics are generalized,

educators must note that not all students with attention deficit disorders have the exact

same difficulties. Like the proverbial snowflakes, each child is different with a unique

pattern of strengths and struggles (Lavoie, 2007).

Organizational Problems for Students with ADHD

Various pieces of literature were reviewed that identified that students with

AD/HD often experience problems with organization. In an LD OnLine Exclusive article

(Lavoie, 2007), Mr. Lavoie, who is living with ADHD, offers critical information to

parents to help them understand the effects of their child's disorder. He notes that if there

were one single challenge that the majority of AD/HD children face, it would be a lack of

organizational skills. These children have limited and inefficient internal structure and are

unable to organize their belongings, prioritize their actions, allot their time efficiently and

meet deadlines. One of the most important things to understand about organizational

skills is the tremendous amount of frustration that this deficit causes. In speaking of his

experience with ADHD, Mr. Lavoie notes that the traditional, popular organizational

tools (i.e., to do lists, checklists, filing systems, and electronic calendars) did not work for

him. He would misplace the lists, lose the date books, and forget to get batteries for the

gadgets. He further stated that those with attentional problems view the world differently

than others and are extraordinarily visual. In order to organize things they have to be

"seen;" proving the widely recognized saying that if it is out of sight, it is out of mind.

Individuals with AD/HD are likely to develop their own unique system of organization

that works best for them, despite how their system might look in the eyes of others.

According to an article, Helping ADHD Students Get Organized for School, published on www.attitudemag.com, children with attention disorders have an impaired ability to organize, prioritize, and manage time because of neurological deficiencies that make it difficult for them to stay on top of their school assignments (ADDitude Editors, 1998-2010). Organizational problems can create havoc on these students' academic performance. One of the academic areas affected might include incomplete, forgotten, or misplaced assignments. Other areas may include inadequate time management, lack of prioritized task completion, or lost supplies needed to perform expected tasks. The neurological process that lets us organize, prioritize, and analyze is called "executive function." Children with attention deficit disorder and related neurological problems have impaired executive function skills due to abnormal dopamine levels in the frontal lobe of the brain (ADDitude Editors, 1998-2010). Attention deficit students may not be aware of the dynamics of their disorder, unless their parents or physician outlines them for them. If they are unaware of the complications of their disorder, they cannot understand how the slightest distraction can cause them to veer off from a given task.

In a study done at the Cincinnati Children's Hospital Medical Center (Langberg, Epstien, & Graham, 2008) it was reported that children with AD/HD often experience problems with organization, which remain prominent throughout their development. Organizational problems are most apparent in the school setting and result in impairments such as lost or forgotten homework assignments and inadequate study skills needed to be successful on assessments. Skills and strategy training interventions have been developed to address the organizational problems of children with ADHD. The patients at the hospital were taught systems for managing their time and materials more effectively.

Contingency management was often used in conjunction with organizational skills training to promote the use of organizational skills and their generalization. Organizational skills interventions were evaluated as standalone interventions and part of multicomponent interventions for children and adolescents with AD/HD. The interventions were associated with significant improvements in the organization of materials, homework management, time management, and planning. There was also some evidence to suggest that organizational improvements lead to reductions in ADHD symptoms and gains in academic functioning. Additional research using randomized controlled research designs and long-term follow-up evaluation was deemed necessary before organizational interventions could be considered established, evidence-based interventions for patients with AD/HD.

AboutOurKids.org (Abikoff, 2012) conducted an interview with Dr. Howard Abikoff regarding his study on ADHD and organizational skills. Along with his colleagues at the Child Study Center and Duke University, Dr. Abikoff conducted a pilot study on ADHD and organizational skills, which sought to improve skills in the areas of organization, time management, and planning (OTMP). Dr. Abikoff noted that not all students with ADHD have difficulty with OTMP, however many do. When he started his work in this area, ten years ago, he discovered that even when rewarded for performing specific tasks (contingency management), there were some children who still struggled with organizational skills. His dissatisfaction with the results encouraged him to take a different approach to help these children develop the skills they needed to perform the desired behaviors.

The first thing Dr. Abikoff did was develop a rating scale that could be used by parents, teachers and students, the Children's Organizational Skills Scale, to identify and measure the types of organizational difficulties the children were experiencing. Next, he received funding that allowed him to conduct his study, which focused on skills building. Dr. Abikoff recognized that the students who were not being successful did not know how to perform the OTMP behaviors. To assist students in performing these behaviors he developed an intervention involving skills-based training. They study included only children with both ADHD and organizational skills deficits that were interfering with their performance in the school and home settings. The first thing discovered in the study was that the skill building process required regular opportunities for the child to practice the skills and receive feedback on their performance. The approach used to implement the intervention was a procedure referred to as task analysis. Dr. Abikoff and his team considered what they wanted the child to be able to accomplish and then worked backwards to identify the actions needed to be done to achieve the desired results. Their approach was to have the children practice and learn specific skills that they would be able to build on. They worked with each child, twenty total, twice a week on materials management, time management, planning, and organizing actions. They also developed materials, techniques, and procedures to support the skills based on a systematic approach they were implementing. They informed the parents and teachers on the skills focused on in their sessions to encourage reinforcement of the skills in multiple settings. Dr. Abikoff reported that the goal of the pilot study was to develop a skills based treatment that was easy to deliver and measure. According to feedback received from parents and teachers,

stating that the students showed significant improvement in their organizational

functioning, they study met the goal.

After the (uncontrolled) pilot study, Dr. Abikoff sought to expand his research

and conduct a larger study with a control group. The current study included 180 third

through fifth grade children with ADHD and OTMP deficits. Including a control group of

children not treated at all, controls time and multiple assessments that may result in

changes in behavior not associated with treatment. Instead of focusing on the skill deficit

itself, the focus was on a performance deficit. If there is a performance deficit the child

possesses the knowledge and skills, however, they are not performing them when needed.

Unlike the process used when focusing on the skills deficit itself, Dr. Abikoff used

contingency management to assist with working with children with performance deficits

associated with organizational skills.

Finally, and very significant to this study which includes high school students, Dr.

Abikoff reported that organizational skills deficits tend to worsen over time as the

children get older. The demands for organization, planning, and effective management of

time and materials increase in the upper levels of their education. Deficits in these areas

interfere with their functioning and they become overwhelmed with the multi-tasking

demands in the school setting.

Teaching Task-Specific Learning Strategies

Because organizational skills may be difficult for students with attention deficit

disorders, it is imperative to provide them with strategies and tools to assist in helping

them become more organized. Strategy instruction is supported by years of quality

research and supplies students, with and without ADHD, tools and techniques that

efficient learners use to understand, learn, and integrate new skills. Multiple opportunities to practice the skills and integrating new information with information they already know make it easier to generalize the material in different situations and settings (Luke, 2006). Some tools considered to assist with organization were using notebooks, folders, sticky notes, checklists, highlighters, assignment books and /or daily planners. Frequent checks would ensure the accuracy of use of these tools.

Learning strategies typically consist of a series of overt (observable) and covert (internal verbal) steps learners follow as they complete a specific task or solve a particular problem (Hughes C. A., 2011). Learning strategies allow the learner to think about their learning while they are processing and applying the information needed for the specific academic or sometimes social task. Successful learners have the ability to use cognitive and metacognitive processes to follow instructions and execute the steps needed to complete a given task. These processes also require them to evaluate their process for completing tasks and decide if they were effective in reaching their desired goal. While it is suspected that successful learners will have an array of effective learning strategies that they can apply with little effort, students with attention deficits may have trouble doing the same (Deshler, 2005). Students with AD/HD are required to participate in the same learning experiences as their peers who do not have AD/HD. Hughes (2011) states that these students are expected to *acquire* information, skills, and knowledge presented in a variety of formats. They are expected to be able to *store* the newly acquired knowledge and retain it to enhance their understanding of the material. Finally, they are expected to *demonstrate* a thorough understanding of the material taught in the form of various written and oral assignments and assessments. As this research indicates,

there are a significant number of students with attention deficits that do not have the skill set or strategy characteristics of successful learners. For this reason, it is important for teachers to instruct these students using explicit learning strategies.

Is it safe to hypothesize that most teachers provide explicit learning strategy instruction to their students? As previously stated in the Abikoff interview, during the course of their education students receive explicit learning strategy instruction for skills needed to maximize their success and build lifelong learners. So why do students with attention deficits struggle to perform, with knowledge of these skills and strategies, as their non-disabled peers? There are several possible explanations for the lack of strategy and skill learning in these students. One reason may simply be that students with attention deficits are not using the strategies effectively. Teachers present their students with strategies for learning in an effort to make the learning process enjoyable and easily attainable. All students, including those with attention deficits, are taught learning strategies; however, the students with attention deficits may not know how and when to use specific strategies. Another reason may be that the students lack the ability to use their prior knowledge when faced with new skills. The students may have knowledge related to the current task, but they do not make the connection between what they know and what they are being required to do (Hughes C. A., 2011). Another reason, which is the one on which this paper will focus, is that students with attention deficits lack organizational skills and strategies needed for completing assignments and preparing for assessments, which ultimately affects their academic performance. Students with attention deficits may exhibit a variety of problems when it comes to assignment completion (Hughes, Ruhl, Schumaker, & Deshler, 2002). Some of the problems listed in

the Hughes study included, but were not limited to, not understanding the teacher's expectations, not using their time wisely, not evaluating the assignment in terms of what needs to be done and what materials are needed to complete the task, and time management. In summary, as noted in Charles Hughes' review of previous research on this issue, students with organization deficits have difficulty being active, organized, strategic learners (Hughes C. A., 2011).

<u>Assignment Completion Strategy</u>

Lack of organization poses a threat to multiple areas of a child's education. One area greatly affected by the lack of organization skills is assignment completion. Classwork and homework assignments are tools that teachers use to provide students with additional exposure and practice of skills taught during classroom instructional time. The four basic purposes of homework are practice (the most valuable in producing measurable academic gains for the purpose of building proficiency and maintaining mastery), preparation, study, and extend or elaborate (Ruhl & Hughes, 2005). Due to their difficulties with disorganization, distractibility, forgetfulness, tendency to lose things, seeming not to listen, over activity, fidgetiness, excessive talkativeness, failure to remain seated, blurting things out, and interrupting (Cook, MD, 2005), students with ADHD may experience difficulty completing assignments and understanding the benefit and impact they have on their overall academic success. Performing less than satisfactory on assignments can have a negative impact on students' grades (Hughes et al., 2002).

Teachers often use assignments as an informal assessment to gage student mastery of skills; therefore, assignment completion is a substantial component to their academic success. The *Assignment Completion Strategy* was designed to enable students

to complete and hand in assignments on time (Hughes C. , 2009). In a study focused on improving homework quality and completion, Hughes, Ruhl, Schumaker and Deshler (2002) instructed students, at the middle school level using the PROJECT strategy, which focuses on independent assignment completion. Specifically, the PROJECT strategy is an assignment completion strategy used to assist students with independently recording, monitoring, and completing assignments. Their study used nine middle school students who were classified with a learning disability. All participants were in a regular education setting for academics at least three periods a day. Students were referred to participate by their teachers based on their display of extreme difficulties in the areas of homework completion and organization as evidenced by baseline data collected over a two-month period. The strategy steps focus on the complete sequence of overt and cognitive behaviors involved in assignment completion, such as recording assignments quickly and accurately, analyzing assignments in terms of amount of time/effort needed, devising a plan for assignment completion based on this analysis, working on the assignment, and turning it in. The strategy also includes metacognitive behaviors such as self-monitoring, self-instruction, and self-evaluation. PROJECT, which students can use to remember the names of the steps so that they can instruct themselves on what to do next, is a mnemonic device that outlines the strategy steps which include Prepare Your Forms, Record and Ask, Organize (using BEST), Jump to It, Engage in the Work, Check Your Work, and Turn in Your Work. The steps focus on assignment completion and the self-regulation techniques: self-monitoring, self-instruction, and self-evaluation. Hughes et al. (2002) used a monthly planner, a weekly study schedule, and an assignment sheet to assist with

recording and monitoring assignments. If necessary, this study will modify the forms used in the Hughes study to fit the needs of the students including in the study.

In the first step, Prepare Your Forms, the students record the dates on the blank monthly planner and write in any special events. Students also fill in dates on the blank weekly study schedule to help plan when they will complete assignments, blocking off times when work cannot be completed. The second step, Record and Ask, requires the students to fill out the assignment sheet immediately after their teacher assigns an assignment. If a particular assignment is due later than the current week (i.e. a project), it is written onto their monthly planner. The third step, Organize, incorporates the BEST strategy (Break assignment into parts, Estimate the number of study sessions, Schedule the sessions on the weekly study schedule, and Take your materials home), which help the students prepare themselves for assignment completion. The fourth step, which is implemented at home, is Jump to It. In this step the students review the requirements for their assignment(s), get their materials needed to complete the assignment(s), and encourage themselves to perform well on the task. The fifth step, Engage in the Work, involves the students engaging in the assignment and seeking help if needed. The sixth step, Check Your Work, requires the students to review their work/check their answers for quality, accuracy and completion. Students are to ensure that they completed all requirements and components of the assignment(s). Students can be encouraged to utilize highlighters and/or sticky notes during stages that are completed at home to assist with organization (Stormont, 2008). The seventh and final step, Turn in Your Work, simply requires the students to check their weekly and monthly planners and submitting their work on time. The teacher kept record of the assignments given, their due dates, and if

the students turned them in on time or not at all. The information was be used to calculate the percentage of assignments completed and assignments completed on time. Checklists were used to evaluate assignment completion and quality of assignments completed. Teacher ratings and student interviews were also used to assess strategy effectiveness and student performance.

In the first stage of instruction, the assignment completion strategy steps were described to the students along with where, when, why, and how the strategy can be used. Students were required to take notes about the strategy steps during this stage. In the second stage of instruction, the use of all the steps of the strategy was modeled for students. During the third stage, students were engaged in verbal rehearsal activities to help them memorize the names of the strategy steps. In the fourth stage of instruction, the students practiced using the first three steps of the strategy. Six weeks after strategy instruction ended, the teacher asked to see the students' assignment notebooks, and the students' performance of the strategy steps in general education classes was scored for randomly selected weeks that occurred during the study. Results reported that on average, each student received nine assignments per week in the targeted classes. The types of assignments varied and included completing math and vocabulary worksheets, chapter questions, study guides, art projects, and book reports, making graphs, and bringing in newspaper/magazine articles on particular topics. Overall, students rarely used any of the strategy steps during baseline; only three students recorded anything in their notebooks. The nine students earned an average of 1.7 % of the points available per week; the three students who actually recorded something earned an average of 8 % of the points per week. During the instructional condition, the nine students earned an average of 28 % of

the points. During maintenance, they earned an average of 60 % of the points. During

baseline, the mean percentage of homework turned in on time was 43 %; the mean

percentage of all homework turned in was 54 %. Group means for the total percentages of

homework turned in on time and all homework turned in for the instructional condition

were 52 and 58 %, respectively, and for the maintenance condition were 64 and 70 %,

respectively.

The study concluded that the use of the PROJECT strategy yielded positive

results for teaching students to record, complete, and turn in assignments independently.

This study extends previous research by demonstrating that students can *independently*

perform strategy steps to record assignments given in their general education classes and

complete the assignments at home with no prompting from parents and teachers and

without the implementation of artificially contrived contingencies once they have learned

a set of organizational/self-management skills. Another conclusion was that students

could maintain their use of these skills over time. This study will take the components

outlined in the work completed by Hughes et al. (2002) to determine its effectiveness

with high school students with ADHD. To increase the effectiveness of the strategy, self-

management techniques were implemented to promote generalization across the content

areas, which will be assessed via contact with the students other teachers.

Self-Management to Promote Generalization

Hughes, Ruhl, Schumaker and Deshler (2002) concluded that, although effective,

the PROJECT strategy could have been more effective if generalization strategies had

been included. In an effort to assist in generalization, this study will incorporate self-

management interventions to help students take responsibility for their academic

performance. Research has shown that self-management interventions play a role in the promotion of generalization across classroom settings (Gureasko-Moore, Dupaul, & White, 2006). Gureasko-Moore et al., (2006) conducted a study on the effects of self-management with three, twelve-year-old, seventh-grade male students diagnosed with ADHD (rating scales and diagnostic interviews were used to confirm diagnosis) whose teacher reported they were insufficiently prepared for class (i.e. no pencil, notebook, or completed homework) and did not complete assigned tasks consistently. The team of researchers conducted self-management training sessions in a small room and observed their preparation skills within the classroom setting. Each participant received medication (which remained constant throughout the study) to alleviate their ADHD symptoms, although it was reported that it was not effective on improving the preparation behaviors. The researchers used a classroom behavior checklist (containing six items), completed by the teachers, to calculate the percentage of preparation skills. The intervention incorporated student training in self-management skills and monitoring their use of the skills. The process included training, monitoring, fading, and maintenance. The results indicated that the training was implemented as intended and successfully improved classroom preparations behaviors, which were maintained after the intervention faded over time. The study successfully extended the literature on ADHD by providing an intervention technique to assist in alleviating symptoms of the disorder. As opposed to other studies conducted in a clinical setting, this study focused on classroom preparations skills and behaviors. Self-management skills may be effective in promoting generalization for students in the high school setting who engage in different classes with different teachers. The skills learned through this strategy, in addition to previous

strategies learned, can enhance the preparation behaviors and student responsibility across classes. The results support the use of self-management as an effective intervention for students who exhibit organization and classroom preparation difficulties Gureasko-Moore et al., (2006).

The following year, Gureasko-Moore, DuPaul, and White (2007) conducted an additional study on self-management. The current study expanded the previous research and was designed to enhance classroom preparation behaviors and homework completion of six adolescent males, ages eleven to twelve) with ADHD. Unlike the previous study, the current study sought to ensure that the success of strategy implementation was not related to or enhanced by the use of medication (Gureasko-Moore, DuPaul, & White, 2007). The behaviors focused on in this study were arriving on time for instruction, being ready and prepared to begin class (seated, quiet), having paper and notebook, and having a pen or pencil. Students include in the study were said to have completed less than 60% of homework assignments. The training included self-monitoring and self-evaluating components, which helped the students monitor and record their behavior and recognize, correct, and improve behaviors that were problematic. Following the implementation of the intervention, participants rarely fell below 100% performance. This study addressed behaviors that often impede learning in students with ADHD and presented evidence that the implementation of a self-management intervention could be effective in promoting organization and significantly improving their academic achievement (Gureasko-Moore, DuPaul, & White, 2007).

Summary

Research shows that organizational skills are a significant deficit for students with attention disorders. Improving these skills should help the students improve their overall academic performance across the content areas and help prepare them for life after high school. The demands for organization, planning, and effective management of time and materials increase in the upper levels of their education. Deficits in these areas interfere with their functioning and they become overwhelmed with the multi-tasking demands in the school setting. Because organizational skills may be difficult for students with attention deficit disorders, it is imperative to provide them with strategies and tools to assist in helping them become more organized.

This study will focus on the use of organizational strategies and tools (i.e., entrance/exit tickets, assignment completion strategy, task analysis, notebook checks) for students with attention deficit disorders to improve academic performance (i.e., assignment completion and assessment scores) in a high school resource room setting. It is hypothesized that if these students are taught task specific learning strategies for organization, they will improve their academic performance in the areas of assignment completion and assessment scores because they will see the rewards of their active involvement in their learning. They will learn, under the teacher's use of specific learning strategies, how to take responsibility for their learning. Students will gain motivation for learning when they see the effects of incorporating these strategies into their everyday learning, which they can use across the curriculum resulting in improved class participation, assignment completion, and assessment scores in their other classrooms.

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Chapter 3

Methodology

This study focused on the use of organizational strategies and tools (i.e., entrance/exit tickets, assignment completion strategy, task analysis, notebook checks) for students with attention deficit disorders as a means to improve academic performance (i.e., assignment completion and assessment scores) in a high school resource room setting. It was hypothesized that if these students were taught task specific learning strategies for organization, then they would improve their academic performance in the areas of assignment completion and assessment scores because they would see the rewards of their active involvement in their learning. They would learn, under the teacher's use of specific learning strategies, how to take responsibility for their learning. Students would gain motivation for learning when they see the effects of incorporating these strategies into their everyday learning, which they can use across the curriculum resulting in an increase in assignment completion and improvement in assessment scores in their other classrooms.

Research Subjects

There were 47 participants in this study, distributed among five classrooms. The subjects range in age between 15 and 18 and grades 9 to 11. There were 22 females and 25 males. The subjects varied in racial diversity; there were 12 African Americans, one Hawaiian, 28 Hispanics, and six Caucasians. Of the 47 participants, 27 (57%) are diagnosed with an attention deficit disorder. The disabilities among the participants include two Auditory Impaired, three Communications Impaired, four Emotionally

Disturbed, one Multiply Disabled, 12 Other Health Impaired, and 25 Specific Learning Disabled.

<u>Research Setting</u>

The participants are enrolled in the Vineland Public School District located in Vineland, New Jersey. Within the district, there are a total of 19 schools (two preschool sites, eight elementary schools, four middle schools, one high school consisting of two campuses, and two alternative school sites). The district is an Abbott School District which provides high quality education for low-income families in a predominately minority environment. Free and reduced lunch programs are offered to families who meet particular household size/income guidelines outlined by the Federal Eligibility Income Chart, which is outlined on the school lunch application. Information for obtaining health insurance is also provided on the lunch application.

The participants are enrolled in a pullout resource room class setting for Math 10 (Geometry), which means that the participants are removed from the regular education setting and instructed in a smaller classroom setting. The maximum class size in this setting is 12 students and includes a special education teacher and paraprofessional.

<u>Materials and Instrument(s)</u>

Throughout this study, several critical materials were used. The teacher and students used notebooks, folders, teacher made warm-up activities, entrance/exit tickets, teacher/district made assessments, study guides, and assignment completion (PROJECT Strategy) materials, which included a monthly planner, weekly study schedule, and assignment sheet. The students' notebooks were used to record teacher provided notes and homework assignments. The students' folders were used to store reference sheets,

study guides, and materials needed for the PROJECT strategy mentioned above. The teacher started each class period with a warm-up for the students to complete, which consisted of one problem related to the prior day's lesson. The entrance/exit ticket was a checklist used to help the students start and finish class according to specific teacher guidelines. The students used the checklist to evaluate their preparation for class. The teacher used teacher-made and district assessments to evaluate the effectiveness of assignment completion, study guides, and the study schedule. The materials used in the PROJECT strategy assisted the students in managing, completing, and turning in short and long-term assignments. These materials also helped the students organize the time needed to complete assignments and study for assessments.

To measure the effectiveness of the organization strategies and tools used in this study, the participants' performance was recorded in terms of their preparation for class, assignment completion, and performance on assessments. The percentages are broken down by assignment completion (homework, classwork, and projects) and assessment scores (tests and quizzes).

Procedure

This study followed a pretest/posttest, group design. The subjects were observed in the same setting (resource room with a maximum of 12 students), focusing on the behavior of organization. Multiple interventions/treatments were used to improve organization among the subjects. Prior to this study, the participants were provided notebooks and folders to help them organize their notes, assignments, reference materials, study guides, and assessments. Baseline data of assignment completion and assessment scores was obtained during the first four months of school. The participants were guided

through the process of setting up their notebooks and folders and the teacher modeled

how and where to record their information. The notebook contained a table of contents to

assist the students with easy accessibility to notes and assignments. The folder was

labeled so the students knew what information to place in each of the pockets. The

students' notebooks and folders were checked weekly to ensure that they were up to date

and their table of contents was accurate. In reviewing the students' notebooks, it was

noted that a large percentage, about 60%, of the students were not maintaining their

notebook.

A week before dismissing for the winter break, the teacher talked to the student

participants about using new strategies and tools to help improve organization,

assignment completion, and assessment scores. In phase one, the students were

introduced to Entrance/Exit tickets (Figure 1) which required them to check off each step

required to get them prepared for class and organize their things at the end of class.

NAME: _____DATE: _____PER:_____

Entrance Ticket

____ I have my notebook out and ready to begin class.
  (**Open to next available page; ready to take notes/review HW, etc.**)
____ I have a pencil.
____ I have my homework out and ready to be checked (if assigned)
    ____ HW Is Completed ____Teacher/Aide Initials
____ I started/completed my warm up (if assigned)

_____ Student Initials   _____ Teacher/Aide Initials

Exit Ticket

____ I put all materials away (notebook, calculator, protractor, etc.)
____ I checked to make sure my textbook is **UNDER** my desk
  (**NOT** on the floor)
____ I recorded my homework assignment (if assigned)
____ I have study materials to study for test/quiz (if assigned)

_____ Student Initials   _____ Teacher/Aide Initials

Figure 1: Entrance/Exit Ticket

The teacher explained the procedure systematically and modeled it with the assistance of the classroom paraprofessional. The students were required to enter the classroom and start immediately on the Entrance/Exit Ticket and daily warm-up (if assigned). They were also required to have their homework out to be checked (if assigned) and their notebooks open ready to begin class. After enough time was provided to complete the warm up (time varied according to level of difficulty of the warm up) the teacher and/or paraprofessional checked each Entrance/Exit ticket for accuracy. If the students checked off something that was not accurate, an "X" would be marked to indicate the inaccuracy (for example, if they checked off that they completed their warm-up and the warm up was not done, an "X" would be marked in that area). At the end of the class period, the students were given time to complete the Entrance/Exit ticket, checking off that they put all their materials away, recorded their homework (if assigned), and/or had all materials needed to study (if applicable). Upon returning from winter break, the classes did practice trials of using intervention #1 (Entrance/Exit Ticket) to ensure that they were familiar with the new procedure. For the first four days, the teacher and/or aide reminded the student participants to complete their Entrance/Exit ticket by going through the steps required to be prepared for class. The following week, the participants received no prompts from the teacher or paraprofessional to complete the Entrance/Exit ticket. Daily logs were kept to record the completion and accuracy of the Entrance/Exit Ticket. After thirty days, recorded data was reviewed a documented. The review was conducted to see if there was improvement in assignment completion and/or assessment scores.

After the thirty-day review, the students were introduced to phase two of the intervention, which was the Assignment Completion strategy *PROJECT*. This strategy

focused on specific tasks involved in the process of completing an assignment. The tasks

included recording assignments, analyzing the assignment to determine the amount of

time needed to complete the assignment, pre-planning to complete assignments, actively

engaging in the assignment, and turning the assignment in. The strategy also incorporated

self-monitoring, self-instruction, and self-evaluation. *PROJECT* is a mnemonic device

(Figure 2) used to help the students remember the steps of the assignment completion

strategy; use of the mnemonic device allowed them to instruct themselves on what to do

next while engaged in the strategy.

PROJECT STRATEGY

Prepare your forms
Record and ask
Organize
> **B**reak the assignment into parts
> **E**stimate the number of study sessions
> **S**chedule the sessions
> **T**ake your materials home

Jump to it
Engage in the work
Check your work
Turn in your work

Figure 2: Project Strategy

As the students worked through the strategy, they completed a monthly planner (Figure 3) to plan long-term assignments and a weekly study schedule (Figure 4) to record and record daily assignment activities. Each form was thoroughly explained and an example of how to complete each form was modeled.

Monthly Planner

for the month of _____

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday

Figure 3 Monthly Planner

WEEKLY STUDY SCEDULE

Study Schedule for the Week of _____

Date							
Time	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8:00-8:30							
8:30-9:00							
9:00-9:30							
9:30-10:00							
10:00-10:30							
10:30-11:00							
11:00-11:30							
11:30-12:00							
12:00-12:30							
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4:00-4:30							
4:30-5:00							
5:00-5:30							
5:30-6:00							
6:00-6:30							
6:30-7:00							
7:00-7:30							
7:30-8:00							
8:00-8:30							
8:30-9:00							
9:00-9:30							
9:30-10:00							

Figure 4 Weekly Study Schedule

The Entrance/Exit ticket was revised (Figure 5) to add a section for the students to record whether or not they checked/added dates to their monthly calendar and/or weekly study schedule.

NAME: _____ DATE: _____ PER: _____

Entrance Ticket

____ I have my notebook **out** and ready to begin class.
 (**Open** to next available page; ready to take notes/review HW, etc.)
____ I have a pencil.
____ I have my homework out and ready to be checked (if assigned)
 _____ **HW Is Completed** _____ **Teacher/Aide Initials**
____ I started/completed my warm up (if assigned)
____ **I checked and/or added dates to assignment calendar.**

_____ Student Initials   _____ Teacher/Aide Initials

Exit Ticket

____ **I checked and/or added dates to assignment calendar.**
____ I put all materials away (notebook, calculator, protractor, etc.)
____ I checked to make sure my textbook is **UNDER** my desk
 (**NOT** on the floor)
____ I have study materials to study for test/quiz (if assigned)

_____ Student Initials   _____ Teacher/Aide Initials

Figure 5 Revised Entrance/Exit Ticket

The weekly study schedule and monthly calendar were checked weekly to encourage

accurate completion. Thirty days after the implementation of the assignment completion

strategy, student records were reviewed to check for improvement in assignment

completion and/or assessment scores. At that time, students who were actively using the

new strategy, as evidenced by the weekly document checks and classroom records, were

rewarded (they were given the choice of a free homework pass, computer use pass, or

snack pass). The reward was provided to encourage continued participation, as well as, to

motivate non-participating students to participate. For the purpose of this study, data was

collected for an additional fifteen days. After the fifteen days, which marked 45 days

after the implantation of *PROJECT*, student data was again reviewed and documented.

All collected data was organized and calculated for analysis of the effectiveness of the

interventions implemented.

Chapter 4

Results

Summary

      This pre-test/posttest, group design study focused on the use of organizational strategies and tools for students with attention deficit disorders to improve academic performance in a high school resource room setting. There were 47 participants, distributed among five classrooms. The research question to be answered was: Will the use of organizational strategies and tools (i.e., assignment completion strategy, task analysis, and notebook checks) improve academic performance (i.e., class participation, assignment completion and assessment scores) for students with attention deficit disorders in a high school resource room, setting? An additional question was whether improvements in student learning will be evident in other classes.

      The study consisted of baseline data and multiple intervention strategies and tools used to monitor student performance. To measure the effectiveness of the organization strategies and tools used in this study, the participants' performance was recorded in terms of their preparation for class, assignment completion, and performance on assessments. The percentages are broken down by assignment completion (which includes homework, classwork, and projects) and assessments (which includes tests and quizzes). Baseline data was obtained during the first four months (September – December) of school. Upon returning from winter break in January, the classes did practice trials of intervention #1 (Entrance/Exit Ticket) to ensure that they were familiar with the new procedure. Daily logs were kept to record the completion and accuracy of

the Entrance/Exit Ticket. After thirty days, recorded data was reviewed a documented to determine if there was improvement in assignment completion and/or assessment scores.

After the thirty-day review, the students were introduced to intervention #2, which was the Assignment Completion strategy *PROJECT*, that focused on specific tasks involved in the process of completing an assignment. The weekly study schedule and monthly calendar were checked weekly to encourage accurate completion. Thirty days after the implementation of the assignment completion strategy, student records were reviewed to check for improvement in assignment completion and/or assessment scores. For the purpose of this study, data was collected for an additional fifteen days. After the fifteen days, which marked 45 days after the implantation of *PROJECT*, student data was again reviewed and documented.
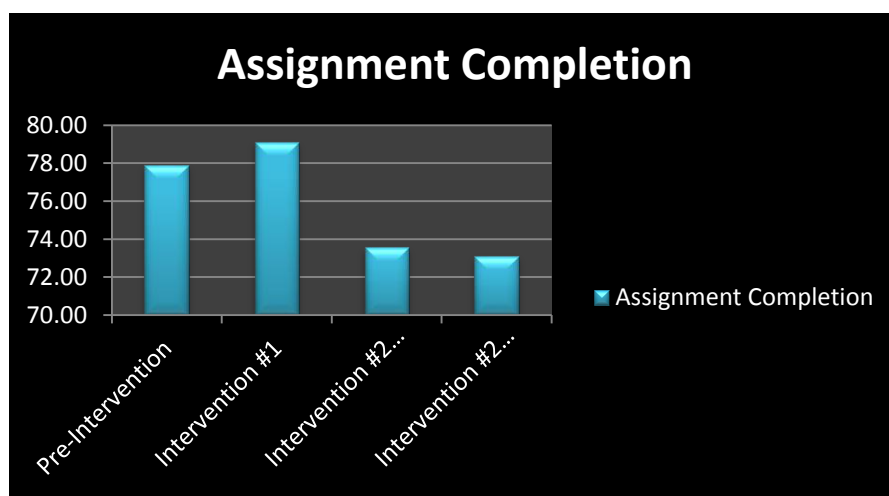
 Review of Results

Table 1 shows results of all students in the area of assignment completion, which includes homework, classwork, and projects.

Table 1: Assignment Completion

GROUP	Pre-Intervention	Intervention 1	Intervention 2 (30)	Intervention 2 (45)
TOTAL	78	79	74	73
ADHD	76	79	71	69
Non-ADHD	81	80	77	79

The mean performance of all student participants in the area of assignment completion is shown in Figure 7. Baseline data indicated that 78% of all the students were completing assignments. After intervention #1 (entrance/exit ticket) was implemented, assignment completion increased slightly to 79%. When compared to pre-intervention data, 27 students (16 of which are ADHD) had an increase in assignment completion, 19 had a decrease in assignment completion, and one remained steady. Thirty days after intervention #2 (assignment completion strategy *PROJECT)* was implemented, assignment completion decreased slightly to 74%. When compared to pre-intervention data, 19 students (10 of which are ADHD) increased their assignment completion, 25 decreased their assignment completion, and three remained steady. Forty-five days after intervention #2 was implemented assignment completion decreased slightly to 73%. When compared to pre-intervention data, 19 students (nine of which are ADHD) increased their assignment completion, 27 students decreased their assignment completion, and one remained steady.


Figure 6: Assignment Completion Results

Table 2 shows results of all students in the area of assessment performance, which includes tests and quizzes.

Table 2: Assessment Performance

GROUP	Pre-Intervention	Intervention 1	Intervention 2 (30)	Intervention 2 (45)
TOTAL	70	73	62	66
ADHD	70	74	65	69
Non-ADHD	70	72	59	63

Figure 7 displays the mean performance of all student participants in the area of assessment performance. Students were assessed on the knowledge of individual skills taught (quizzes) and the application of the skills throughout the chapter (tests). Baseline data indicates a mean score of 70% on classroom assessments. After intervention #1 was implemented, classroom assessments scores increased slightly to 73%. When compared to pre-intervention data, 25 students (15 of which are ADHD) had an increase in classroom assessment scores and 22 had a decrease in classroom assessment scores. Thirty days after intervention #2 was implemented, classroom assessment scores decreased to 62%. When compared to pre-intervention data, 16 (nine of which are ADHD) students increased their classroom assessment scores and 31 decreased their classroom assessment scores. Forty-five days after intervention #2 was implemented, classroom assessment scores decreased to 66%. When compared to pre-intervention data, 18 students (10 of which are ADHD) increased their classroom assessment scores, 27 students decreased their classroom assessment scores, and two remained steady.
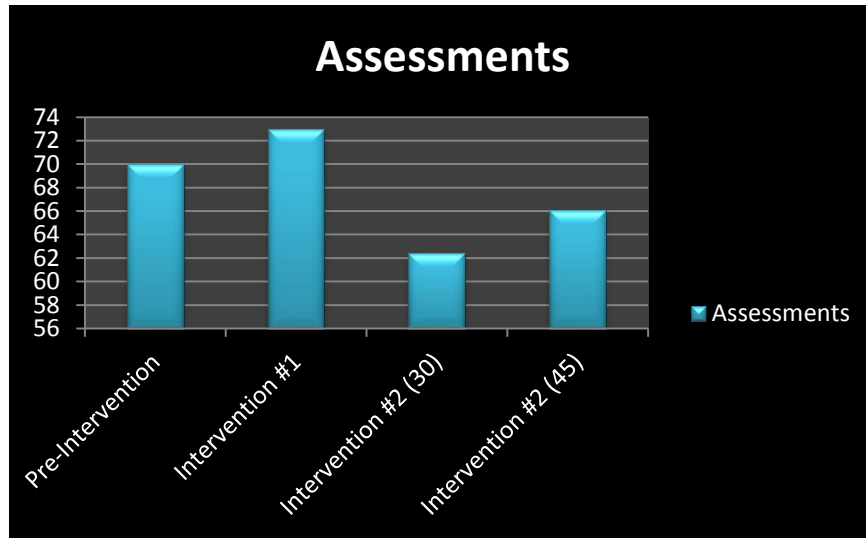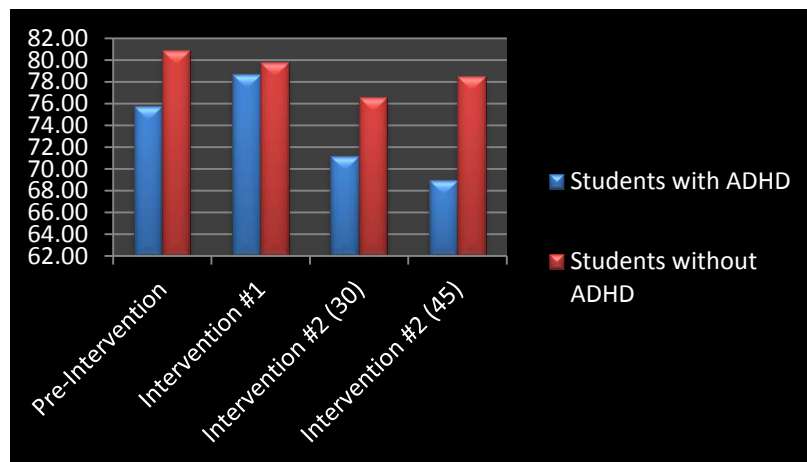
Figure 7: Classroom Assessment Results

To address the question proposed in this study, which related to the use of

organizational strategies and tools to improve academic performance for students with

attention deficit disorders, student data was sorted to compare the performance of

students with an attention deficit disorder to students without the presence of an attention

deficit disorder. Each student's IEP was reviewed and those identified as having ADHD

were compared to those whose IEP did not identify them as having ADHD.

Figure 8 displays the performance on assignment completion of students with and

without an attention deficit disorder. Baseline data for students with ADHD indicates that

76% were completing assignments. After intervention #1 (entrance/exit ticket) was

implemented, assignment completion increased slightly to 79%. When compared to pre-

intervention data, 16 students had an increase in assignment completion and 11 had a

decrease in assignment completion. Thirty days after intervention #2 (assignment

completion strategy *PROJECT)* was implemented, assignment completion decreased

slightly to 71%. When compared to pre-intervention data, 11 students increased their

assignment completion and 16 decreased their assignment completion. Forty-five days after intervention #2 was implemented assignment completion decreased to 69%. When compared to pre-intervention data, 10 students increased their assignment completion, 16 students decreased their assignment completion, and one remained steady.

Baseline data for students without ADHD indicates that 81% were completing assignments. After intervention #1 (entrance/exit ticket) was implemented, assignment completion decreased slightly to 80%. When compared to pre-intervention data, 10 students had an increase in assignment completion, nine had a decrease in assignment completion, and one remained steady. Thirty days after intervention #2 (assignment completion strategy *PROJECT)* was implemented, assignment completion decreased slightly to 77%. When compared to pre-intervention data, eight students increased their assignment completion, nine decreased their assignment completion, and three remained steady. Forty-five days after intervention #2 was implemented assignment completion decreased slightly to 79%. When compared to pre-intervention data, eight students increased their assignment completion and 12 decreased their assignment completion.


Figure 8: Assignment Completion Results (ADHD vs. Non-ADHD)

Figure 9 displays the performance on classroom assessments of students with and without an attention deficit disorder. Baseline data for students with ADHD indicates that they achieved a mean score of 70% on classroom assessments. After intervention #1 (entrance/exit ticket) was implemented, classroom assessments scores increased slightly to 74%. When compared to pre-intervention data, 15 students had an increase in classroom assessments scores and 11 had a decrease in classroom assessments scores. Thirty days after intervention #2 (assignment completion strategy *PROJECT)* was implemented, assignment completion decreased slightly to 65%. When compared to pre-intervention data, nine students increased their classroom assessments scores and 18 decreased their classroom assessments scores. Forty-five days after intervention #2 was implemented classroom assessments scores decreased slightly to 69%. When compared to pre-intervention data, 10 students increased their classroom assessments scores, 16 students decreased their classroom assessments scores, and one remained steady.

Baseline data for students without ADHD indicates a mean score of 70% on classroom assessments scores. After intervention #1 (entrance/exit ticket) was implemented, classroom assessments scores increased slightly to 72%. When compared to pre-intervention data, 10 students had an increase in classroom assessments scores and 10 had a decrease in classroom assessments scores. Thirty days after intervention #2 (assignment completion strategy *PROJECT)* was implemented, classroom assessments scores decreased to 59%. When compared to pre-intervention data, seven students increased their assignment completion and 13 decreased their classroom assessments scores. Forty-five days after intervention #2 was implemented assignment completion

decreased to 63%. When compared to pre-intervention data, seven students increased

their classroom assessments scores, 12 decreased, and one remained steady.
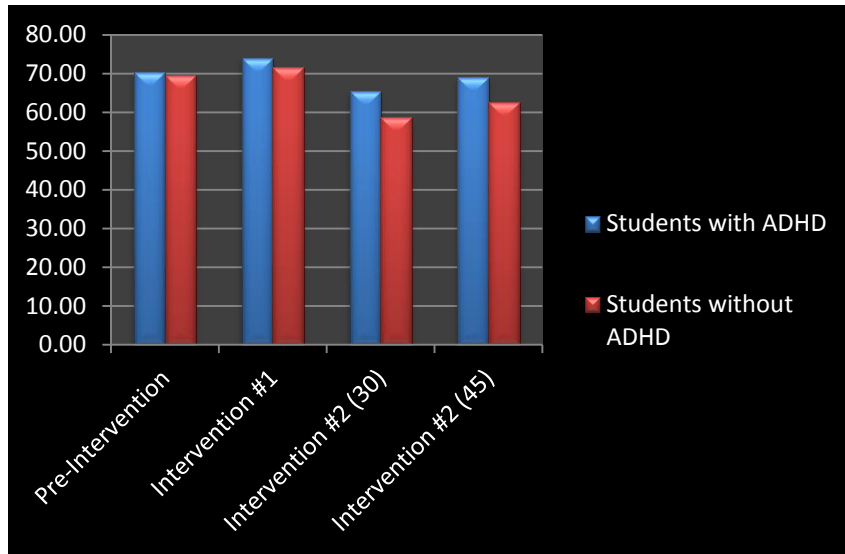
Figure 9: Classroom Assessment Results (ADHD vs. Non-ADHD)

Overall data results indicate that the student participants slightly improved their

academic performance upon the implementation of organizational strategies and tools.

Overall, 37% of the students with ADHD and 40% of students without ADHD showed

improvement because of the implemented interventions.

Chapter 5

Discussion

<u>Review</u>

This study focused on the use of organizational strategies and tools (i.e., assignment completion strategy, task analysis, notebook checks) for students with attention deficit disorders to improve academic performance (i.e., class participation, assignment completion, and assessment scores) in a high school resource room setting. It was hypothesized that if these students were taught task specific learning strategies for organization, then they would improve their academic performance in the areas of assignment completion and assessment scores. The anticipated outcome would be that their performance would increase because they would see the reward of their active involvement in their learning. Simultaneously, they would learn how to take responsibility for their learning. In addition, students would gain motivation for learning when they see the effects of incorporating these strategies into their everyday learning, which they can use across the curriculum.

<u>Summary of Results</u>

The results of this study show that, following the introduction of organizational and task specific strategies, the student participants displayed a slight increase in assignment completion and assessment scores between baseline and the implementation of the first intervention, which was using an Entrance/Exit Ticket. This tool required them to check off each step required to get them prepared for class and organize their things at the end of class. After a second intervention, the assignment completion strategy *PROJECT,* was introduced, a decrease in assignment completion and assessment scores

was evident. The tasks in this strategy included recording assignments, analyzing the assignment to determine the amount of time needed to complete the assignment, pre-planning to complete assignments, actively engaging in the assignment, and turning the assignment in. As the students worked through the strategy, they completed a monthly planner to plan long-term assignments and a weekly study schedule to record and record daily assignment activities. The strategy also incorporated self-monitoring, self-instruction, and self-evaluation.

As evidenced by the data collected the student participants with and without ADHD showed slight improvement in assignment completion and assessment performance after the interventions were implemented. Although there was a slight increase in performance after the first intervention was implemented, performance decreased after the second intervention was implemented. On assignment completion, sixteen of the students with ADHD showed improvement, while ten of the students without ADHD showed improvement between baseline and the first intervention. After the second intervention, only 10 of the students with ADHD and eight of the students without ADHD showed improvement between baseline and the second intervention. In assessment performance, fifteen of the students with ADHD showed improvement, while ten of the students without ADHD showed improvement between baseline and the first intervention. After the second intervention, only 10 of the students with ADHD and seven of the students without ADHD showed improvement between baseline and the second intervention.

Previous research studies focused on improving academic performance for students with ADHD by teaching task specific learning strategies in organizational and

self-management. Multiple opportunities to practice the skills and integrating new information with information they already know make it easier to generalize the material in different situations and settings (Luke, 2006). While it is suspected that successful learners will have an array of effective learning strategies that they can apply with little effort, students with attention deficits may have trouble doing the same (Deshler, 2005). The *Assignment Completion Strategy* was designed to enable students to complete and hand in assignments on time (Hughes C. , 2009). In a study focused on improving homework quality and completion, (Hughes, Ruhl, Schumaker, & Deshler, 2002) instructed students, at the middle school level using the PROJECT strategy, which focuses on independent assignment completion. The PROJECT strategy is an assignment completion strategy used to assist students with independently recording, monitoring, and completing assignments. Their study used nine middle school students who were classified with a learning disability. All participants were in a regular education setting for academics at least three periods a day. Students were referred to participate by their teachers based on their display of extreme difficulties in the areas of homework completion and organization as evidenced by baseline data collected over a two-month period. Hughes et al. (2002) used a monthly planner, a weekly study schedule, and an assignment sheet to assist with recording and monitoring assignments. The teacher kept a record of the assignments given, their due dates, and if the students turned them in on time or did not turn them in at all. The information was be used to calculate the percentage of assignments completed and assignments completed on time. Checklists were used to evaluate assignment completion and quality of assignments completed. Teacher ratings and student interviews were also used to assess strategy effectiveness and

student performance. The students in this study increased their assignment completion after using the monthly planner, weekly schedule, and assignment sheet. The study concluded that the use of the PROJECT strategy yielded positive results for teaching students to record, complete, and turn in assignments independently.

The current study concluded that the use of specific strategies, such as the *PROJECT* strategy, was minimally effective in teaching students with attention deficit disorders to improve organization skills, which in turn, affected their academic performance in the areas of assignment completion and assessment scores. Both previous and current research recognize the importance of implementing learning strategies, however the results of this current study were not impressive in previous studies. Previous studies implemented the strategy with middle school students in a regular education setting, while this study consisted of high school students in a special education setting. In the previous study, it was not clear what counted in the "homework" averages. In the present study, the assignment completion percentages were derived from an average of the students class work, homework, and projects completed. Results may have been different if assignment completion was only focused on "homework" assignments completed. In their research, Hughes, et al (2002) found that, although effective, the PROJECT strategy could have been more effective if generalization strategies had been included. Research has shown that self-management interventions play a role in the promotion of generalization across classroom settings (Gureasko-Moore, Dupaul, & White, 2006). The current study also recommends the implementation of specific self-management strategies to further increase the effectiveness of the strategies taught and promote generalization. The current study did not follow the process of the previous

study exactly, which could have also been a factor in the difference in the success rate. The limitations and future research practices are discussed in detail in the next section.

Limitations and Future Research

The results of this study, although small, support the original hypothesis. However there are several limitations to the study that need to be discussed. The first limitation is the possible presence of academic frustration. These students have been placed in a small group setting because they display significant weakness in the area of math, as evidenced in test results reported in their IEP's. These students range in ability level from third to sixth grade and are enrolled in a college level, math class, which follows the general education curriculum. There are seven out of the forty-seven participants enrolled in the class for a second year. These students did not meet the requirements of the course during the previous school year. Review of performance on assignments and assessments given provide evidence that the students have not mastered the skills presented. Providing students with instructional strategies in assignment completion will not allow them to experience success if they do not have the skill set needed to complete the assignments given. Emphasis should also be placed on other strategies needed for students to be successful on the assignments, which could be the focus of future studies. Lack of student academic success could be the result of the limitations due to their disability, lack of sufficient instructional strategies to master skills presented, or lack of motivation.

A second limitation of this study could have been student motivation. During the course of the study, the teacher had to provide motivation techniques (rewards, verbal praise, and private student conferences) to students that displayed a lack of motivation to

learn and be successful. Students appeared to lose their motivation or interest in the interventions after the introduction of the second intervention, which required the students to take more responsibility and perform additional tasks. Motivation was especially a factor for the seven students who are taking the course for the second time. These students have experienced failure in the past and it appears to have an influence on their current performance and level of motivation to overcome the past. Students may require instruction that is presented in various methods to gain and maintain interest. As previously noted, teaching strategies for assignment completion alone, without additional strategies, may not be sufficient to improve the desired results of this study. However, it is noted that during this study motivation was used and provided an influential component to a number of students who did not start successfully.

A third limitation of this study was student absenteeism. Within the forty-seven student participants, fourteen students have accumulated twenty or more absences from school. One of these fourteen has accumulated more than sixty absences. The other thirty-three students have absences ranging from five to sixteen days. If a student is not present to receive the instruction provided during their absence, they are going to have trouble when they return. If they are not willing to make sacrifices to allow them to make up for the instruction missed, they are going to continue to fall behind as the lessons progress. Unmotivated students will have difficulty catching up because of the lack of desire to do the work. In the math setting, it is difficult to move on to the next lesson, without mastering, or at least displaying some knowledge of the previous skills needed for the next lesson. For students with disabilities, particularly attention deficit disorders, this may be problematic.

Another limitation for this study was the time (when and duration) and manner in which the interventions were introduced, implemented, monitored, and results analyzed. The time provided to monitor and analyze the effectiveness of the interventions was restricted to accommodate the structure of this study. Students were set into a routine of learning activities at the time the new interventions were introduced. Desired results may have been significantly higher if the students were required to use the interventions at the beginning of the school year to assist with organization, assignment completion, and assessment performance.

A final limitation for this study was the lack of evidence for generalization. An attempt was made to obtain information from other subject area teachers regarding student performance, however, the responses were too minimal to determine if the students were using the strategies in other settings. Teachers reported that they were overwhelmed with the demands of their job and did not have the time to participate in this study.

Future studies might consider implementing other strategies (motivation, generalization, self-management, etc.) before introducing strategies to enhance student learning and success. The study could then compare the effects of teaching the strategies mentioned in this study in isolation to the effects of teaching them in conjunction with other strategies. Future studies may also consider implementing the interventions in this study for the duration of an academic year and measure student achievement. The results could then be analyzed and used to plan for the upcoming school year. Future studies might also compare the effects of teaching these strategies to individual students as

opposed to small groups of students. Additional studies might also focus on the types of students for who these strategies are effective.

As noted above, the interventions used in this study did not have a significant impact on improving student performance. Several limitations were addressed that require attention in order to enhance the effectiveness of the strategies in the future. Implications for a classroom that includes students with disabilities includes: making sure the strategies are simple and easy to follow, ensuring that strategies are not adding more work to what the students are already required to do, and designing strategies that the students feel will make their lives easier. Another implication is recognizing that the strategy may work for some students, but not others. This study found that the interventions used were not significantly effective with this group of students.

Conclusion

Overall data results indicate that the student participants slightly improved their academic performance upon the implementation of organizational strategies and tools. The effect, although short-term and small, was achieved in a relatively short period following the modeling and practicing of the strategies. Of the data reported, 37% of the students with ADHD and 40% of students without ADHD showed improvement because of the implemented interventions. The results indicate that students with ADHD have the potential to show growth with the proper implementation of specific strategy instruction. Students with and without an attention deficit disorder could have been more successful if they were provided with consistent routines and strategies at the beginning of the academic year. Future studies need to be conducted that focus on implementing other strategies (motivation, generalization, self-management, study skills, etc.), implementing

the interventions for the duration of an academic year, and the effects of teaching these strategies to individual students. The organization of the classroom structure can affect the organization of the students with attention deficit disorders within the classroom setting. Teaching these students to be better organized can enhance academic performance in the areas of assignment completion and assessment scores.

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