The Effect of Gardner's Theory of Multiple Intelligences on Reading and Spelling Non-Phonetic Sight Words

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Abstract

The purpose of this study was to examine to impact of teaching dyslexic students ages seven to eleven sight words utilizing all of their intelligences (interpersonal, intrapersonal, linguistic, visual-spatial, musical, mathematical, and kinesthetic) as opposed to using a typical Orton Gillingham method (visual, kinesthetic, auditory, tactile). Although the null hypothesis was supported, there was significant increase in students' gains for reading and spelling sight words for both the control and experimental groups. Studies related to this topic should continue and should be conducted for longer periods of time, should utilize more students, and should cross examine scores with overall reading achievement.

CHAPTER I

INTRODUCTION

Dyslexia, as defined by the International Dyslexia Board of Directors (2012), is "a specific learning disability that is neurological in origin. It is characterized by difficulties with accurate and/ or fluent word recognition and by poor spelling and decoding abilities" (n.p). For the diagnosed dyslexic, many incredible strides in teaching have been made. Research states that dyslexic children should be taught using multisensory components and in a programmed, phonics-based instruction, utilizing an Orton Gillingham approach. With a typical Orton Gillingham routine, the average dyslexic can overcome challenges and learn to read and write.

However, some dyslexics are considered double deficit dyslexics, meaning that their working memory is also impaired. There is a considerable lack of research on this group and on ways to help this group of children progress under typical dyslexic education. Under the phonics curriculum, there is a piece of instruction that must be attacked by whole language instruction. These words that must be attacked are called sight words, and they are words that children cannot sound out with decoding utilizing phonics. When students are not able to read and spell these words, it hinders their reading fluency and prevents them from being able to read independently. These words must be linked into the memory and accessed with ease and familiarity. When a student is a double deficit dyslexic or has any type of memory difficulty, identifying these words becomes an increasingly frustrating task and creates yet another hurdle to overcome in order to read independently.

Watching many students struggle year after year with these words, the researcher began to investigate solutions. With such limited availability of research into memory issues and reading development, the researcher began to try her own solutions and began seeing notable

results. When these children were taught words utilizing their multiple intelligences (interpersonal, intrapersonal, linguistic, visual-spatial, musical, mathematical, and kinesthetic), they began to retain the words more quickly and easily.

The kinesthetic intelligence involves learning through movement; the mathematical intelligence is learning through reasoning and mathematical concepts; the musical intelligence is learning through sounds and with rhythms; the visual-spatial intelligence is learning through imagery and art; the linguistic intelligence is learning through language; the intrapersonal intelligence is learning through oneself and assessing one's abilities; and, lastly, the interpersonal intelligence is learning through interacting with others. Thus, the researcher decided to delve into the topic of multiple intelligences to see what types of solutions were out there and what solution might be created.

Statement of the Problem

The purpose of this study was to determine whether utilizing all of a student's intelligences could lead to memorizing more non-phonetic sight words for reading and spelling in isolation for dyslexic students.

Hypothesis

For this study, the researcher proposed the null hypothesis: There will be no statistically significant difference in the sight word acquisition between the control and experimental group on a pre/posttest analysis.

Operational Definitions

In this study the independent variable was *instructional method*. Instructional method was operationally defined as learning sight words through the use of tactile, kinesthetic, auditory, and

visual intelligences for the control group. By contrast, the experimental group utilized interpersonal, intrapersonal, linguistic, visual-spatial, musical, mathematical, and kinesthetic intelligences.

The dependent variable was the *Jemicy Red Word Test* which consisted of 200 of the most common sight words from lists such as the Dolch Sight Word List.

CHAPTER II

LITERATURE REVIEW

This literature review discusses the importance of attaining non-phonetic sight words in reading and spelling for students with dyslexia and examines the interventions in place for helping students retain and recall these words. The first section describes the decoding expectations and demands of any reader to recognize sight words and the usefulness of that skill in text. The second section illustrates the importance of spelling in the retention of sight words and the connection of sight words to reading. The third section depicts the dyslexic learner and the struggles that learner has with memory and sight words. The final section explores the research interventions including the use of Gardner's Theory of Multiple Intelligences.

The Reading Demands for Non-Phonetic Sight Words

Meadan, Stoner, and Parette (2008) define sight words as "words that are recognized without mediation or phonetic analysis [and] can be read from memory" (p. 47). Reading sight words is necessary for readers as they continue to gain independence in text. When students struggle with sight words, their reading fluency is degraded. As the "lack of fluency increases demands on other processes, such as working memory" (Mahone, 2011, n.p.) increase, resulting in comprehension difficulties because the "higher level processes have to compete with word decoding for the same time-limited resource" (Mahone, 2011, n.p.). Since sight word reading "refers not to a method of teaching reading but the process" (Ehri, 1995, p. 119) of assessing words in memory, the working memory component must be analyzed when creating a method for reading sight words.

Working memory is the mental clipboard for the temporary storage and manipulation of information as students read. Within working memory, there are two systems affecting the

retrieval of sight words. The first system is the visuo-spatial sketchpad, which allows the "construction and storage of visual images" (Masoura et al., 2006, p. 26). The second system is the central executive coordination system, which controls attention to tasks and works with the long term storage of information. If either system slows due to trouble recognizing the sight word or putting it in long term storage, then making meaning of the text becomes increasingly difficult. Working memory plays a crucial role in students' ability to access sight words and read fluently. Reading sight words cannot be analyzed in isolation from spelling due to the impact spelling sight words can have on reading.

The Special Role of Spelling in Reading

Orton (as cited in Schlagal, 2001) "observed many years ago that an inability to spell was treated as of minor importance," (p. 147–148) yet spelling affects many aspects of reading and writing fluency. Spelling instruction strategies evolved slowly over the past decade. During the first half of the twentieth century, all words were viewed as unpredictable and every word was memorized one by one. In the 1930's memory research began, and teachers initiated the use of new strategies like 'look, say, write, check.' According to this strategy, for each missed word, the student wrote it three to ten times. It was not until the 1950's and 1960's that teachers began to teach English words utilizing patterns and understanding that few words were truly sight words. In the 1980's and 1990's, there was an emphasis on students' developmental ages and their errors, such as the formation of strings of random letters when children are toddlers (Schalgal, 2001). Current research proves that spelling is "an essential and complex skill involving multiple components," (Nies & Belfiore, 2006, p. 163) and an improvement in spelling can be linked to an improvement in reading.

Although a large number of English words can be learned through the phonetic process, sight words still must be memorized. Students who struggle in both reading and spelling of sight words may be utilizing ineffective procedures to retain and recall words; therefore, research contends that teachers need to provide students with explicit instruction, multiple chances to practice, and direct feedback (Howard, DaDeppo, & Paz, 2008). Nies and Belfiore (2006) argue that teachers today must be careful to implement the necessary practice opportunities for students while avoiding too much repetition that may decrease motivation. Spelling and reading sight words requires multiple practice opportunities due to the memory component of sight words. Many students who have dyslexia also struggle with retaining sight words.

The Dyslexic Learner

According to the International Dyslexia Board of Directors (2012) and the National Institute of Child Health and Human Development, "Dyslexia is a specific learning disability that is neurological in origin. It is characterized by difficulties with accurate and/ or fluent word recognition and by poor spelling and decoding abilities" (n.p.). Students with dyslexia often have average or above average intelligence and achieve success in other fields. Their language disability is not the result of the environment or other handicapping conditions (Simmons, 1992). Many students with dyslexia also have deficits in rapid automatized naming which can impact processing speed, reading, writing fluency, and working memory (Mahone, 2011). These double deficit dyslexics have trouble with processing speeds and rapid naming tests as well as the general phonological problems. It is thought that these problems "lie specifically within the language-related brain circuits and particularly within the phonological processing systems of the brain" (Azar, 2000, p. 36). A typical dyslexic student will also not perform well on short-term

memory tasks that associate to working memory and may or may not be connected with his or her processing speed (Masoura et al., 2006).

The newest research states that there are several types of dyslexics (Reynolds, Vannest, & Feltcher-Janzen, 2013). Within the dyslexic title, students can be auditory-linguistic deficient, visual-spatial deficient, a mixed group, or unspecified. Given the many types of dyslexics, it is important that teachers are utilizing multiple strategies to help students read and spell sight words. Orton (as cited in Schlagal, 2001) believed that "spelling and reading were interconnected and that improvement in one domain could have effects in the other and that neither should be neglected" (p. 162) when teaching students with dyslexia.

Gardner's Theory of Multiple Intelligences and Current Research Practices

With so many types of students with dyslexia and many of these students with working memory challenges, it is ever more critical that teachers must be teaching reading and spelling of sight words in dynamic ways. Dyslexic students need to read and write sight words multiple times in numerous styles. Gardner (1993) proposes that all humans have seven different types of intelligences "that reflect different ways of interacting with the world" (Howard Gardner's Multiple Intelligence Theory, n.p.). These seven intelligences are linguistic, visual-spatial, logical-mathematical, musical, bodily-kinesthetic, interpersonal, and intrapersonal. Gardner (1983) postulates that these seven intelligences allow teachers to teach in seven different ways instead of in one way to have children access the information they are given. Within these seven, Gardner and Hatch (1989) state that "the powerful constraints that exist within the mind can be mobilized to introduce a particular concept in a way that children are most likely to learn it" (p. 5). Although Gardner (1983) uses the term 'intelligence,' many researchers suggest that a more accurate term would be learning styles. Thus far, current research explores linguistic,

mathematical, spatial, kinesthetic, and intrapersonal intelligences/learning styles in relation to sight words. The latest research argues that there are now nine intelligences; however, there is no research on sight words with connection to the naturalistic and existential intelligence.

Within the linguistic intelligence, there is research for three strategies for teaching non-phonetic sight words. A common linguistic practice is the 'look, cover, write' approach which can utilize paper or flashcards. This method "can foster automaticity by helping students read words accurately and quickly" (Monroe & Staunton, 2000, n.p.), but this strategy lends itself to the linguistic intelligence heavily and can lack motivating incentives. This approach can also lack engagement, and thus a student could be rote memorizing words that are not being stored in long-term memory due to a lack of interest or analysis of the word.

A more engaging linguistic strategy occurs when teachers utilize mnemonic devices to help students remember difficult spellings. One such mnemonic is for the word 'because' and the mnemonic is 'boys eat candied apples under silly elephants.' Howard et al. (2008) integrate mnemonics/acoustic poems, pictures, and stories for primary school dyslexics to help build the bridge between working memory and access to sight words. A teacher introduces the mnemonic device about the elephant with a picture of the entire mnemonic device, and as the child colors the picture, the student can help finish the story about why the elephant is so close to the boys and why the boys eat apples. After the student completes the drawing and the story, the child will trace the letters of the sight word and repeat the story again. The next day, the students utilize the story to write the word and use it in a sentence. Due to students' difficulties with working memory, the story allows students to access the word linguistically and creates engaging incentives to remember the word with help from the story and picture. One drawback, however, is that this strategy took 34–40 minutes for two days for each sight word learned. Students rated

that they "believed they could remember how to spell more" (Howard et al., 2008, p. 7) using this method. So although there are three researched strategies for the linguistic learner, one strategy is not engaging and the other is time consuming for teachers. More research needs to be conducted for the linguistic learner when it comes to sight words.

The linguistic strategy of creating a mnemonic and relating a picture or story can also help students with the visual-spatial intelligence. The creation of pictures and picture clues helps relieve the visual learner by "providing one additional source of information from which the beginner can sample as he/she reads" (Meadan et al., 2008, p. 47). Meadan et al. (2008) believe that adding pictures to sight words can help with readers' automaticity. Next to each sight word, the picture would remind students of that word, and they would be able to continuously see that word and begin to recognize it. This strategy can use the mnemonic picture created with Gardner's (1993) strategy, a student's self-created picture, or the computer-generated picture to help the reader. Gardner (1993) found that the repeated exposure to that word with the picture clue leads to more fluent reading; however, there are mixed reviews about this strategy. There is a lack of testing with picture clues to corroborate whether the student can read the word or if the student is dependent upon the clue.

Another approach is writing the words in the air and visualizing the word. When students must write the word in the air, they hold a visual representation of the word and can manipulate the sequence of letters in their minds. This ability to write the word in the air shows the students' ability to hold that word in their long-term storage and use their working memory to manipulate it in the moment. Many programs for dyslexics, such as Project Read and Lindamood Bell's Seeing Stars (Bell, 2001) use this approach.

Allowing students to write in the air is also tapping into students' kinesthetic intelligence with the engagement of their gross motor coordination. There are three current research studies addressing a student's kinesthetic intelligence with regard to memorizing sight words. Many educators get stuck on the first strategy involving the tactile piece, which involves having students trace in sand, on sandpaper, with glitter, or even on beans glued to a card (Monroe & Staunton, 2000). Students have motivation to use a multitude of textiles and art supplies while they are also storing the letters in their brain as they trace the word. The second kinesthetic approach is having students tap out the letters of the words on their arms, legs, or tables (Schlagal, 2001). For example, if students were tapping out the word 'the,' they would start tapping near their shoulders and work toward their wrists, tapping three times for the letters 't', 'h,' 'e.' In the program Seeing Stars, students also use color boards where they can tap each letter of the word on a different color square. Once again, they must be combining their visual system with their kinesthetic system to promote long-term storage of the sight word (Bell, 2001).

The last researched strategy for kinesthetic learners is learning through sign language. The printed word is introduced with the signs for the letters as well as a picture or an object. The idea is that the students will recognize not only the sign but the printed word as well. Not only do the students need to attend to the information both kinesthetically and visually, but "signs are vivid, dramatic, and fascinating which increases motivation" (Brennan & Miller, 2000, p. 147). The kinesthetic field is most researched and applied in the classroom because it is fairly easy to implement, creates engagement, and addresses the developmental need of most children to attack words through movement.

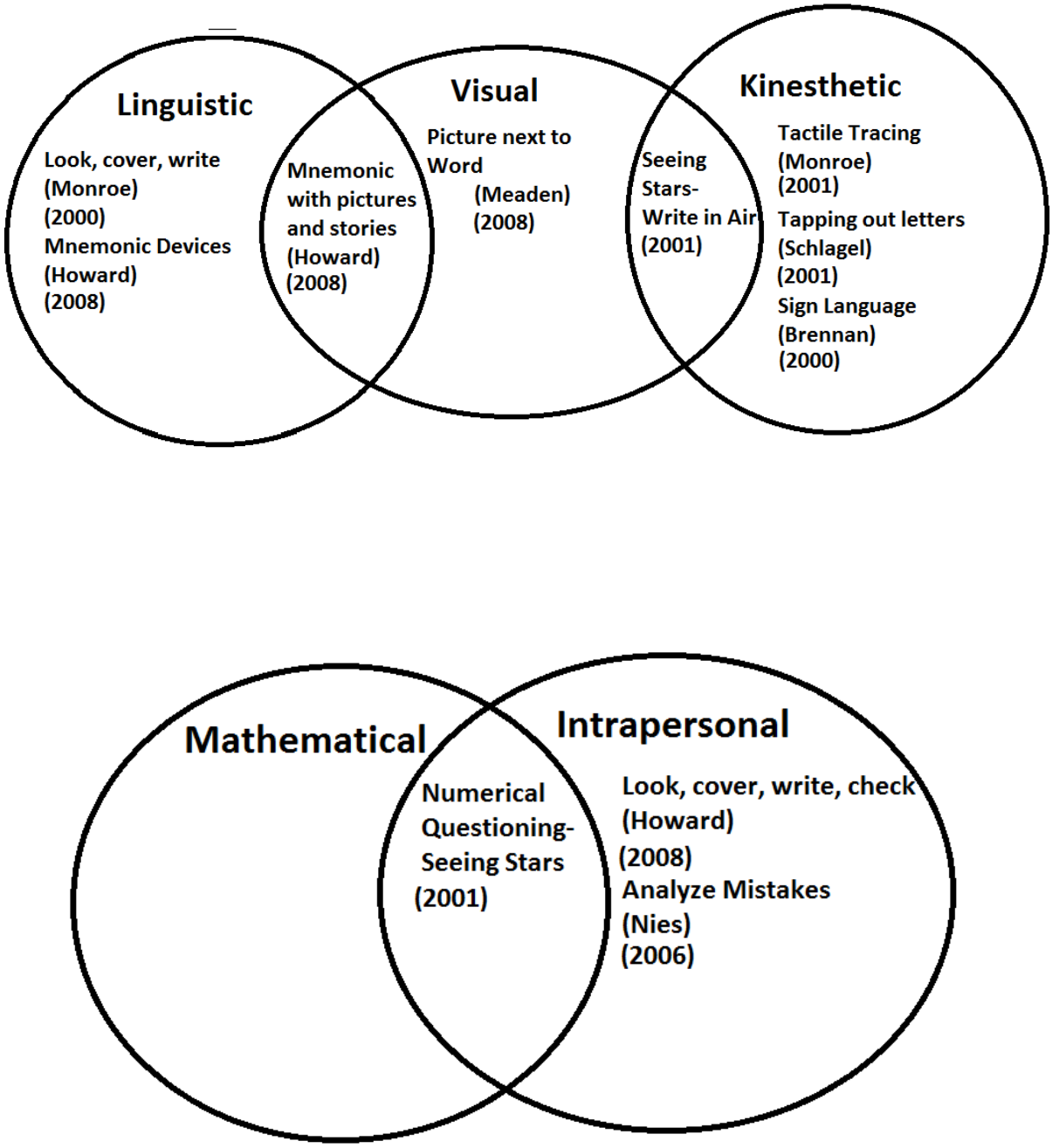
In today's educational world, many teachers hear that students should be utilizing self-correction and their intrapersonal intelligence, but only one study researched self-correction with

sight words. A classic application of intrapersonal intelligence and sight words is using the 'look, cover, write, check' method. In this method, students look at the printed word, cover the printed word or flip over the notecard, practice writing the letters in the order they remember, and then look at the printed word to check for correctness. When students do not write the word correctly, they can analyze the mistake. Students can check for a misplaced letter, omissions, or additions (Howard et al., 2008). Nies and Belfiore (2006) conclude that students' self-correction allows for students to retain sight words faster and when "procedures for handling errors are in place, errors can serve as an effective learning opportunity" (p. 169).

Bell (2001) combines the intrapersonal with the mathematical in a questioning technique. In Seeing Stars, the teacher asks the students a series of questions, such as "What is the 3rd letter in the word?" to have students recognize the order of the letters as well as to provide a way for students to find their mistakes and fix them. This allows students to self-correct and to learn a method for analyzing the sequence of letters (Bell, 2001). There is still much research that needs to be done in the mathematical and intrapersonal fields as they are connected to sight words.

Figure 1

Visual Representation of Current Research into Learning Styles and Sight Word Recognition



Conclusion

In today's world, "a large stable sight vocabulary continues to be the hallmark of a successful reader" (Johnston, 1998, p. 666). A stable sight vocabulary allows the student to read independently and creates a fluent reader who is free to comprehend. Since sight words are connected to memory, it is important that explicit and intensive instruction in both reading and spelling occurs. For a student with dyslexia, the process of learning sight words may require extensive repetition in multiple ways due to the weakness both in working memory and in proper storage of the information. The bulk of the current studies show high retention rates for the kinesthetic and visual models. However, current research is still lacking regarding the advantages of interpersonal intelligence and musical intelligence when teaching sight words. As noted above, there is very little research into the linguistic, mathematical, and intrapersonal intelligences and their connection to sight words. Lastly, there is no research on the effects of utilizing all seven intelligences for retaining sight words or memory information at all.

CHAPTER III

METHODS

Design

A quasi-experimental pre/posttest design with an experimental group and a control group was used to conduct this study. The independent variable was the type of instruction each group received. In this study, the dependent variable was the number of sight words students identified as assessed by the *Jemicy Red Word Test*. Both groups received 12 weeks of instruction three times a week for five minutes each session. The type of instruction in those five minute sessions was different for the control and experimental groups.

In the experimental group, the teacher chose the type of intelligence (musical, spatial, interpersonal, intrapersonal, linguistic, mathematical, and kinesthetic) she wanted to use. Then she consulted a table that matched the intelligence type with different activities involving sight words and that intelligence (See Appendix A). For example, if the teacher wanted to utilize the musical intelligence, she referred to the musical box, which gave her the option of using activities such as drumming the letters in words, rapping the letters, singing the letters, tapping them with sticks, or creating a boots-dance with the words. The teacher utilized these intelligence activity boxes, making sure that she taught with a strategy addressing every intelligence before repeating.

Participants

The participants in this study consisted of 15 students between the ages of seven and twelve from one private school in Baltimore, Maryland with students with language difficulties. All students have dyslexia and all were White. All students were behind grade level with regard to reading and spelling sight words. There were eight students in the experimental group and

seven students in the control group. The control group had four boys and four girls, and the experimental group had two boys and five girls.

Instrument

The test that was used was the *Jemicy Red Word Test*. This was a list created by the Jemicy School from lists such as the Dolch Sight Word and Project Read's Sight Word sequence list to assess students' ability to read and spell commonly seen sight words. Students were asked to spell the list of words on Day 1 and read the list on Day 2. Responses were recorded on a checklist.

Procedure

In January, the *Jemicy Red Word Test* was given to the students, and they were subsequently assessed on which words they could read and spell. At the conclusion of testing, the examiner counted how many words the student could both read and spell correctly and recorded this on the checklist table. Following this assessment, all students received 12 weeks of sight word instruction three times a week for five minutes. Both the experimental and control groups had five sections, so students received one-to-one instruction or instruction with a ratio of two students to one teacher.

Control Group

In the control group, the participants received instruction in the Orton Gillingham approach to learning, which is based around the tactile, kinesthetic, visual, and auditory styles. The control group's activities and time on each task was recorded based on how much time the task took, what type of task it was, and which words were worked on. The control group averaged five minutes on each task, but on some days the activity took two minutes and on other

days the activity took seven minutes. The types of activities used were tracing in the air, tracing in sand, utilizing glitter for tactile resistance, spelling on paper, and closing eyes and visualizing the word in the air.

Experimental Group

The experimental group completed its sessions utilizing the kinesthetic, interpersonal, intrapersonal, musical, visual-spatial, mathematical, and linguistic intelligences. The experimental group utilized a five-minute timer and stopped activities after five minutes. The activity was always used as the warm-up to the class period. In the experimental group, the students cycled through the types of intelligences (kinesthetic, interpersonal, intrapersonal, visual-spatial, musical, mathematical, and linguistic). Within each intelligence, there was a list of activities that were deemed appropriate to teach sight words and address that learning style (See Appendix A).

For example, in the musical category, the activities included drumming the letters of the word, tapping with drumstick/cups, rapping the word, creating a song with the letters of the word, or creating a step dance with the letters. Once the teacher chose one activity from the musical category, the teacher then chose a different intelligence box and picked a new activity such as the intrapersonal or kinesthetic activities. After all seven intelligences boxes had been chosen, the teacher started again, picking from any intelligence box. There was no specific order that the teacher followed when choosing which intelligence as long as all seven were chosen. Appendix A displays the types of intelligences and activities the teacher chose. Since no group followed the same exact series of activities in a specific order, Appendix A shows the exact series of activities each group of students in the experiment group received.

At the end of the twelve weeks, students received the *Jemicy Red Word Test* assessment again and were assessed on the number of sight words they could read and spell correctly.

CHAPTER IV

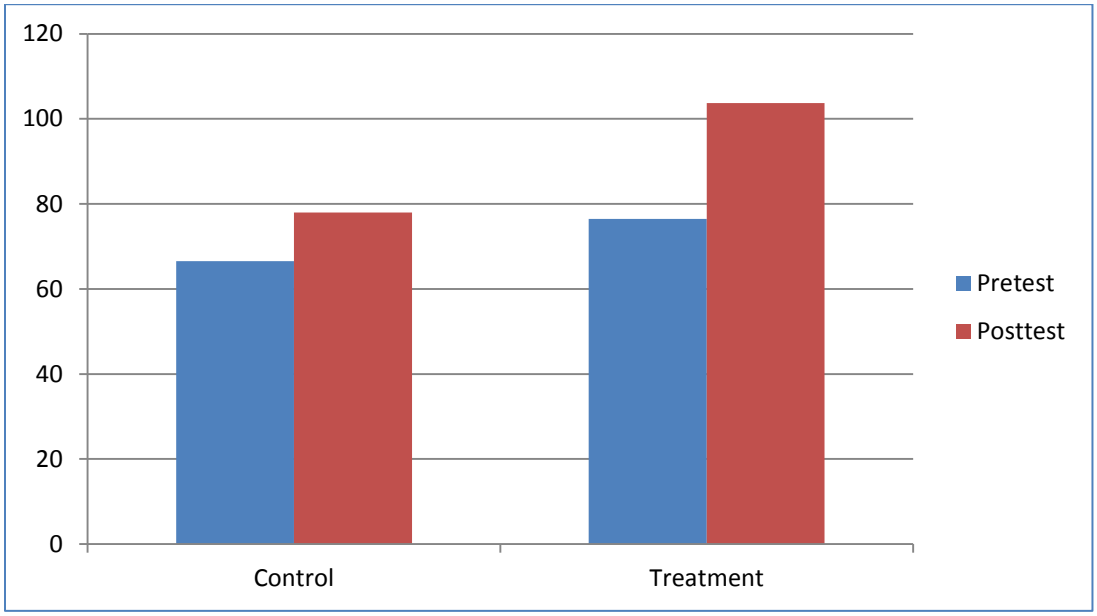
RESULTS

The analysis compared the results from the pre- and posttest on the *Jemicy Red Word Test*. The results conclude that there was no significant difference between the pretest and posttest scores of the control and treatment group. The control group obtained a t score of t (13)= .471, p= .65, whereas the treatment group obtained a t score t (13)=1.038, p=.32. There was no significant difference between scores obtained by the treatment and control groups on the posttest.

Although the null hypothesis was supported by the non-significant difference in group performance, the groups individually broke the null hypothesis in that both groups significantly improved their reading and spelling of sight words. There was a significant difference between pre- and posttest results for the control group; mean pretest score of 66.50 significantly increased to 76.50 on the posttest, t (7)=-5.345, p<.05. There was also a significant difference between the pre- and posttest results for the treatment group; the mean pretest score of 76.50 significantly increased to 103.71 on the posttest, t(6)=-6.292, p<.05 (Figure 1). Therefore, although the difference between the groups was not significant, the groups individually created significant improvements in the students' reading and spelling abilities.

Figure 1

Mean Pre- and Posttest Scores for the Control and Treatment Group



CHAPTER V

DISCUSSION

The null hypothesis in this study was supported because there was no statistically significant difference in the sight word acquisition between the control and experimental group on a pre/posttest analysis. The data collected does show, however, that there was statistical increase in scores for each individual group.

Implications of the Study

The results of this study suggest that further examination of differentiated strategies should continue. Since the null hypothesis was rejected when looking at the groups' individual performance and there was an increase in test performance for both groups, further long range research should occur. Because both groups demonstrated dramatic improvement, the treatment did not prove to be as effective in and of itself. These results suggest that teaching students with dyslexia in a mutlisensory, small group atmosphere will create large increases in their ability to learn to read and spell. Although one approach utilized all the avenues a student can learn through, the structured approach which utilizes multiple ways to teach does not show statically significant results when compared to making sure students are still learning with a multisensory approach.

Theoretical Consequences

Among students in this study, there were large differences in beginning scores, ages, and independent reading levels of learners. Some students began the study only reading six words

and grew to 14, whereas others began at 30 words and grew to 104. The difference in the starting points may have created problems with statistical analysis.

Threats to Validity

During the three months of this study, there were numerous snow days which created a disruption in the continuity of teaching. Although the students still received all the days of treatment and the control group received the same number of days with sight words, the regular instruction of the reading class was hindered. There was also differential selection for sampling because students were selected from two existing groups: the researcher's classroom and another teacher's classroom. Also within this study, the students could have made associations with words on the test due to the short time period between testing.

Connections to Previous Research

Since all the other studies focused on one particular activity such as creating poems for the sight words letters, this study supports that combining all of the successful strategies researched creates success as well. Strategies such as Howard et al.'s (2008) mnemonic devices with pictures and Brennan and Miller's (2000) sign language, when completed for a shorter amount of time than the original study and combined with numerous other strategies, still obtained significant results. The researcher also utilized Meaden et al.'s (2008) picture next to word strategy, Linda Mood Bell's (2001) writing in the air and numerical questioning, Schlagel's (2001) tapping out letters, Monroe and Staunton's (2000) tactile tracing, Brennan and Miller's (2000) sign language, Howard et al.'s (2008) look-cover-write-check strategy, and Nies and Belfiore's (2006) analyzing mistakes strategy; however, the strategies were not utilized

individually as in any of the original studies. All of the studies from Chapter II were incorporated within this study but not completed in isolation, and they were still productive and created statistically significant results.

Implications for Future Research

Due to the small numbers of students utilized in this study, future research needs to be conducted with a larger sample of students. The study would also benefit from running for a longer period of time to account for the drastic changes over the entire year that a child can make using both strategies. Within this study, there were students who begin reading only five or six sight words and some who started reading thirty sight words, so future studies would be well advised to use two groups that are created within the study: one with beginner readers and another with a group of intermediate readers. In addition to utilizing two groups, future studies should also study the students' ability to read independently at the beginning and end of the study. Based on the reading changes in this study, the researcher's hypothesis is that, although the beginner readers increased by fewer numbers of sight words, this greatly impacted their ability to read text on their own. In contrast, the intermediate readers who gained copious amounts of red words were able to improve their reading fluency and comprehension due to the ease of the reading.

Conclusion

This study left options for many future research projects. In part perhaps due to the short duration of the current study, statistically significant results between groups did not occur; however, future studies with some alterations in sample size and testing choices may

demonstrate significant results. The researcher learned that more testing needs to occur for this group of students who is impacted by dyslexia and memory issues. Hopefully,
this study will open the minds of educators to the many ways students learn and to the impact of teaching to the whole child. As John Dewey (n.d.) said, “If we teach today’s students as we taught yesterday’s, we rob them of tomorrow” (n.p).

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Appendix A: Red Word Activities for Types of Intelligences

Kinesthetic

trampoline

write in air/bubbles/windows

tactile trace

tap out letters

sign language

creation with clay/muscles

write across wall/table

Intrapersonal (self)

look, cover, write, check

make a movie/powerpoint/collage/viz

Musical

drum letters

tap with drum sticks/cups

rap them

sing about them

boots- step dance

Visual-Spatial

pictures next to word

write in air

Pictures in words (Where)

magnets missing letters

chalkboards/large writing surfaces

outline shape of the word

Interpersonal

demonstrate tricks to others
hand on top of stick, trace
model with powerpoint,
movie, etc

Mathematical

number of letters in words
and placement in word questioning
alphabetic ordering
red words with shapes attached

Linguistic

look, cover, write
mnemonic device/pictures
saying word different (BEAUtiful)

Ssample Student 1		
Set 1:	Set 3:	Set 5:
drum letters	chalkboards/large writing surfaces	mnemonic device/pictures
red words with shapes attached	rap them	sign language
make a movie/powerpoint/collage/viz	demonstrate tricks to others	alphabetic ordering
trampoline	number of letters in words	make a movie/powerpoint/collage/viz
write in air	look, cover, write	model with powerpoint,
model with powerpoint,	write in air/bubbles/windows	magnets missing letters
mnemonic device/pictures	make a movie/powerpoint/collage/viz	boots- step dance
Set 2:	Set 4:	Set 6:
tactile trace	look, cover, write, check	Pictures in words (Where)
magnets missing letters	mnemonic device/pictures	write across wall/table
hand on top of stick, trace	pictures next to word	red words with shapes attached
tap with drum sticks/cups	red words with shapes attached	saying word different (BEAUtiful)
red words with shapes attached	sing about them	look, cover, write, check
look, cover, write, check	hand on top of stick, trace	drum letters
mnemonic device/pictures	creation with clay/muscles	hand on top of stick, trace