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The Effects of Direct Instruction of Vocabulary on High School Special Education Students' Reading Comprehension

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Abstract

This study focused on improving the reading comprehension levels of high school special education students through direct instruction of academic level vocabulary. This study was designed for eight special education students, attending a Midwestern public school who were considered special education. The intervention was conducted over a two week period for twenty five minute every other day using a vocabulary graphic organizer. Data measured the students' ability to answer implicit and explicit questions about text with and without look backs to the text. The students did not demonstrate a significant gain in reading comprehension skills after the vocabulary intervention.

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Chapter 1

Introduction

Vocabulary knowledge is the ability and knowledge to define a given word, then using this information to use the word in context or conversation. Vocabulary development is imperative for school aged children in order to further their reading skills and comprehension of text (D'Anna, Zechmeister, Hall, 1991). When students reach middle and high school, much of the vocabulary they learn is not used in their everyday lives. This vocabulary is referred to as academic vocabulary and is used in a wide array of academic areas (Cunningham & Moore, 1993).

This study examines effectiveness of direct instruction of academic vocabulary through graphic organizers to teach content area vocabulary to ninth grade special education students. The following section will detail the current research present, the connections and differences of this study to the research, the students that participated in the study, and connections to common core state standards.

Previous studies have found that vocabulary knowledge is linked to a student's reading comprehension level (Nelson & Stage, 2007). Reading comprehension is ability to gain and draw understanding from a text (Day& Park, 2005). Researchers have done prior research on the amount that vocabulary knowledge affects a student's reading comprehension (Yovanoff, Duesbery, Alonzo, & Tindal, 2005). Much of this research has been done on how a student's current level of vocabulary determines their reading comprehension level. The other research that has been completed, deals with the school wide vocabulary initiatives and the increase of the school populations' reading comprehension (McMillian, 2009). On the other hand, there has been research done on specific vocabulary strategies and teaching methods that work to increase

a student's vocabulary knowledge. However, there are few studies that have been done that research the link between a specific vocabulary strategy and a student's reading comprehension.

There are many teaching strategies, graphic organizers, and vocabulary curriculums that researchers have proposed. However, few have been directly linked to a student's reading comprehension level. This study examines the change in a student's reading comprehension before and after academic vocabulary is taught. Academic vocabulary will be directly taught through graphic organizers where students need to examine many aspects of the meaning of the word. These include the definition, characteristics, examples, and non-examples. After students are assessed on their reading comprehension level through the high school level QRI, they will be taught specific vocabulary words from the excerpt (Leslie & Caldwell, 2011). After they work closely with these words, they will be reassessed on their reading comprehension. This study is being done to link the instruction of vocabulary to increases in reading comprehension levels of special education students.

The students involved in the research were all ninth grade students in special education. All students were enrolled in a public school in Milwaukee, Wisconsin and were included 90% of time in the general education population. Their special education labels were a wide range that included, other health impairment, autism, learning disabled, and emotional behavioral. None of the students involved in the study were able to read independently at a high school level. However, their reading abilities ranged from slightly below grade level to significantly below.

The current common core state standards in ninth grade English/Language arts address the importance of vocabulary knowledge and attainment. The standard RL.9-10.4 deals with determining the meaning of a word in a text and the impact of that word on the overall meaning of the text. Similarly, the standard RI.9-10.4 addresses determining the meaning of a word and

finding its connotative meaning in relation to the text. The last state standard that addresses the importance of vocabulary is L.9-10.5 which states that students should demonstrate understanding of word meanings in writing. Vocabulary knowledge is imperative in ninth grade English/language arts in order to show proficiency (Common Core State Standards Initiative, 2015).

The next chapter delves into current literature and research on vocabulary and vocabulary instruction. Studies have found that vocabulary knowledge is linked to reading comprehension and that there are specific strategies or curriculums that work to better teach students vocabulary. Chapter 2 will present the literature vocabulary instruction, the influence of vocabulary on reading comprehension, and strategies for learning academic vocabulary.

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Chapter II

REVIEW OF LITERATURE

Vocabulary knowledge is the ability to define a word by providing a clear rationale for what the word means, then taking this word and using it in context of a text or speech. Students use vocabulary throughout a variety of grades and subjects areas. As a student grows and develops, their vocabulary is influenced as well (D'Anna, Zechmeister, Hall, 1991). The vocabulary acquisition of a student influences their reading comprehension (Nelson & Stage, 2007). Reading comprehension is the ability to draw meaning and understanding from text one has read (Day& Park, 2005). Vocabulary knowledge is one of the major contributing factors to a student's level of reading comprehension. In order to fully understand what is being read, students need to have base level knowledge of word meaning and vocabulary (Nelson & Stage, 2007).

As students progress in grade level, text becomes more complex in terms of vocabulary. There are three levels of vocabulary. The first level is basic vocabulary. In this level students are introduced to basic everyday words that are used often in daily conversation. Students learn this vocabulary during their "learning to read" phase of schooling. The next level of vocabulary, which is examined in this research, is academic vocabulary. These words are not necessarily content area specific, but are used throughout informational text and academic works. The acquisition and manipulation of academic words are one of the best indicators of student's progression in education. The last tier of vocabulary is content specific vocabulary. These words are found only in certain academic areas and normally not across multiple contents (Cunningham & Moore, 1993).

Students acquire basic vocabulary through instruction in “learning to read” and through daily conversations. However, for some students, the acquisition of this higher level academic vocabulary can be difficult because they do not use it every day. Therefore teachers and educators need to implement direct instruction models in order to teach and enforce this new level of vocabulary. Various strategies can affect a student’s ability to learn and use academic vocabulary. The purpose of many of these strategies is to help increase students’ reading comprehension levels (McMillian, 2009).

The purpose of this action research project is to determine the effects of direct instruction of academic vocabulary on a student’s reading comprehension level in ninth grade. The chapter summarizes studies that address the important questions pertaining to this action research project: What is academic vocabulary? How does vocabulary change as students progress in school? What strategies can be used in increase academic vocabulary? Does acquisition of academic vocabulary influence reading comprehension levels? The first section focuses on the instruction of vocabulary and how it influences different groups of students and standardized tests. The second section describes various strategies and instructional methods that can be used to teach academic vocabulary. The last section addresses how instruction of academic vocabulary affects students reading comprehension levels.

Vocabulary Instruction

Across content areas and grade levels, there is instruction in vocabulary. In order to take meaning for what a student has read, they need to have knowledge about what words mean (Nelson & Stage, 2007). Therefore, there have been a variety of studies conducted on how vocabulary instruction should be presented. However, instruction can vary depending on what

group of students being taught and why vocabulary is being taught. For example, vocabulary instruction often focuses on English Language Learners.

Importance of Vocabulary instruction for Bilingual Students

The study conducted by Lesaux, Kieffer, Faller, and Kelley (2010) researched the effects of a vocabulary program, Academic Language Instruction for All Students (ALIAS), on students that were English language learners. The purpose of the study was to determine whether the ALIAS vocabulary program would improve the reading comprehension of English Language Learner students. The researchers indicated three specific research questions for study. These included, what is the effect of the academic vocabulary program (ALIAS) on the vocabulary and comprehension skills of English language learners compared to that of English speaking peers, was the program implemented with fidelity by all teachers, and in what way was the instruction different from standard practice. From these questions, the researchers drew the hypothesis that the implementation of the vocabulary program, when done with fidelity, will positively impact English language learners' acquisition of academic vocabulary. The independent variable is the vocabulary program Academic Language Instruction for All Students. The dependent variable is the English language learners' level of acquisition of vocabulary.

The participants included 21 classes of students, taught by 19 teachers, 13 treatment classes, and 8 control groups. These classes were drawn from seven middle schools in a large urban district. It was decided amongst the teachers in the individual schools, which would be a part of the experimental group and which would be in the control. Of the 476 students in the classes, 346 were English language learners and 130 were native English speakers. The student sample was 53% female and the median age was 11 years, 11 months. Before the program, the students were given a pretest in vocabulary using the Stanford Achievement test – 10th edition,

reading vocabulary subset, and a test in reading comprehension using Gates-MacGinitie reading test – 4th edition: reading comprehension. The Stanford Achievement test measured vocabulary through, target word mastery, word association, morphological awareness, and word meaning in context. The Gates-MacGinitie examined comprehension through providing on grade level text passages and corresponding multiple choice questions. After the pretest, the students in the treatment classes were given instruction by their teacher in the intervention curriculum, text-based, language program ALIAS. This program was an 18-week intervention that had eight two-week units and two one-week reviews. All the lessons were 45 minutes in length. At the end of program students in the experimental and control groups were given the Stanford Achievement test, and the Gates-MacGinitie again as posttest measure.

The program resulted in significant effects on some aspects of vocabulary knowledge, including meanings of taught words ($d = 0.39$; $p < .0001$), morphological awareness ($d = 0.20$; $p = .0003$), and the word meanings as presented in expository text ($d = 0.20$; $p = .0227$).There was also marginally significant effects on the depth of word knowledge (d = 2.0, p =.0830) and reading comprehension (d = 0.15, p= .0569). There was no effect for norm-referenced vocabulary.

All students in middle school and high school are learning how to attack and manipulate academic language and vocabulary. Any student that is not a native English speaker will have a difficult time adjusting to the different vocabulary. However, the scores of the English language learners, in general improved in comparison to native English speakers scores. Therefore, the researchers were able to draw the conclusion that the ALIAS vocabulary program has moderate success in improving the reading comprehension of English Language Learners.

Vocabulary instruction is vital for students that are English Language Learners. This is only one of the many reasons that vocabulary is taught in school. Standardized tests across states use a certain level of academic vocabulary. In order to increase scores, schools have implemented vocabulary instruction into classroom (Lesaux, Kieffer, Faller, & Kelley, 2010).

Instruction and Standardized Test Scores

The research conducted by McMillen (2009), sought to look at the differences in standardized test scores between two years. After the first test, there was an academic vocabulary intervention put into place in the school. The study wanted to determine if there was any change made in the students reading scores before and after the treatment. There were four specific research questions. 1) What relationships existed between the reading scores on standardized tests of sophomores after teachers implemented the academic vocabulary program? 2) Did different demographic sub groups benefit more from this program than others? 3) Did teachers report changes in their knowledge of research-based vocabulary instruction? 4) Was there a relationship between the standardized reading scores and the knowledge of teachers about the vocabulary instruction? The hypothesis of the study was that if teachers had professional development by the principal on vocabulary interventions, there would be an improvement in student reading scores on the standardized test. The independent variable is the vocabulary intervention and the dependent variable is the students' reading scores on standardized tests.

The population was 1600 sophomore students and 175 teachers of a high school in Central Florida. They study took place over the course of the 2008-2009 school year. The school student population was 59% white, 12% African American, 26% Hispanic, 28% economically disadvantaged, 14% English Language learners, and 22% students with disabilities. These

students and teachers used a six step method to learn and retain academic vocabulary. The data was collected in the spring of 2008 and 2009, when the 9th and 10th grade students took the Florida Comprehensive Assessment Test. There was also a survey given to teachers entitled "Teacher Perceptions of Vocabulary Instruction." This was given before and after the treatment of the new vocabulary method.

The results determined that the relationship between reading scores on the standardized test after the teachers implemented the vocabulary program was significant. However, it was not significant in the expected direction as the test scores went down and did not increase. Similarly, the reading performance of all the identified subgroups dropped between the two tests. Also, there was a decrease in the number of teachers than completed the pretest (153) and those that completed the posttest (98). Therefore, many teachers did not report changes while using the vocabulary program. Coincidentally, there was then no relationship between the teacher surveys and the scores on the standardized tests. The study noted several limitations that could have led to these findings such as, differences in the difficulty of the test between the two years, larger teacher turnover rate, and new teachers that were unsure of implementation (McMillian, 2009).

Vocabulary instruction can also be related to a student's ability to fast map information. Fast mapping is the learning and retention of a new word after only one exposure to the word. This is particularly seen in language learning and development. The researchers in this study wanted to determine if this fast mapping ability and process was just as important for students with a specific language impairment when learning new words.

Vocabulary Instruction and Fast Mapping

The study conducted by Gray sought to evaluate the fast mapping performance of students with specific language impairments in relation to vocabulary developments and phonological memory (2006). The researchers wanted to understand the deficits that lead to a poor lexical acquisition of by researching the word learning process. Fast mapping is the first step in the word learning process that happens when a child encounters a word for the first time. A student creates a phonological representation for the word, creates a hypothesis about the meaning, and then creates link between the two. Researchers wanted to determine if there was a breakdown in this process for students with Specific Language Impairments. The hypothesis of the student was that students with a specific language impairment would lower phonological memory and vocabulary skills due to a lower fast mapping process when compared to normal language students. The independent variable was the fast mapping task administered to the student. The dependent variable was the students' fast mapping score.

The participants included fifty-three students diagnosed with a specific language impairment and fifty-three students with normal language acquisition. The groups both included fifteen three year olds, nine four year olds, fourteen five year olds, and fifteen six year olds. The students spoke English as their first language. In the Normal Language group, there was one African American, three Asian, eleven Hispanic, four Native American, and twenty-nine white students. For the specific language impairment group there was one African American, thee Asian, fifteen Hispanic, twenty-nine white students. Six students in this group reported 'other.' Students were recruited from public schools, clinic, and child care programs. Students were given tests to determine their ability in phonological memory and vocabulary measure. For the first three days of study, students completed assessments and the nonword repetition and the digit span tasks. The next day, the students completed a fast mapping task for one word set (A or

B). Then ten days later they completed it for the other set. There were three phases of the fast mapping. First, common objects were pulled from a bag and researchers modeled the name for the object. Then a comprehension probe was administered for each of the common and target objects. Finally, the researchers administered a production probe for the object asking "what's this?" Each correct response was given a score of one point.

The Normal Language group demonstrated a significantly better performance on vocabulary measures and phonological memory. For the fast mapping task though, only differed significantly at age five. Therefore, the phonological memory and receptive vocabulary did not predict fast mapping ability. Phonological development of Normal language students and students with a specific language impairment follows a similar trajectory. However, the Normal Language group showed significantly better scores. This is similar for receptive vocabulary. However, fast mapping abilities did not differ significantly between the two groups. This means that fast mapping ability does not determine phonological development or receptive vocabulary (Gray, 2006).

Gray studied the path that retention of learned vocabulary took (2006). However Sunbol and Schmitt sought to determine whether the instruction of vocabulary was entirely necessary for students learn and retain vocabulary they have read.

Direct Instruction of Vocabulary vs. Incidental Learning

The study conducted by Sunbol and Schmitt wanted to determine the effectiveness of direct teaching of new vocabulary after reading text (2010). The researchers sought to compare the direct instruction of vocabulary to simply incidental learning where students only read the text and constructed their own knowledge through context clues. The research question purposed was does direct instruction of vocabulary after reading have any effect on word knowledge when

compared to incidental learning? Researchers purposed the hypothesis that there would be no difference in the vocabulary ability between those students who were directly instructed and those that had only incidental learning. The independent variable was the type of vocabulary instruction the students received and the dependent variable is the score in the test the students received.

The participants were forty female students. They were all students at the Umm Al-Qura University of Medicine in Saudi Arabia. All students were native Arabic speakers who also learned English starting at the age of twelve and studied it for six to eight years. All women were first year students enrolled in either Pharmacology or Laboratory Medicine.

A seven hundred word excerpt was chosen from the students' coursework book The Language of Medicine in English. Out of the excerpt, there were twenty medical words chosen for the students to be tested on. Before reading, students were given a pretest of the word knowledge. Thirty eight of the participants did not know any of the words and two learners knew only one word each. The participants were then divided into two groups, those that were simply given the reading and then tested on the words, and those that were given the reading and direct instruction of the words before the test. There were three types of questions given the test, fill in the blank with the target word, fill in the blank for the target word meaning, and multiple choice.

The researchers found that students who were in the read only condition with incidental learning, scored low on both fill in the blank conditions for both the meaning recall (3% correct) and the target word recall (7% correct). However, the multiple choice, they scored slightly better (38% correct). Those students who were given instruction on the target words produced higher levels of mastery in all three questions (9% correct for word recall, 19% for meaning recall, and 53% on multiple choice). Researchers were able to then conclude that direct instruction of

vocabulary after reading does aid in vocabulary knowledge. Those students who receive direct instruction have an advantage over students that do not (Sunbol & Schmitt, 2010).

Vocabulary instruction is vital throughout a student's education. Direct instruction of vocabulary is used for various reasons. Instruction can be used to increase English Language Learners' vocabulary knowledge (Lesaux, Kieffer, Faller, & Kelley, 2010), or it can be used to increase vocabulary knowledge for state standardized tests with the hope of increasing scores (McMillian, 2007). Vocabulary instruction can also be used to stud and determine the fast mapping skills of students with specific language impairments (Gray, 2006). Lastly, Sunbol and Schmitt found that direct instruction of vocabulary does ultimately help reading vocabulary knowledge more than incidental learning. In order to implement this instruction, there are specific strategies used to increase vocabulary knowledge.

The Influence of Vocabulary on Comprehension

There are various factors that influence reading comprehension. One of the major factor that influences a student's ability to draw meaning from what they read is their vocabulary knowledge (Lubliner & Smetana, 2005).There have been several studies done on this topic of vocabulary and reading comprehension. However, the importance of vocabulary seems to shift as students progress in school. There is a shift from "learning to read" to "reading to learn." Vocabulary seems to play a much more pivotal role in the latter (Yovanoff, Duesbery, Alonzo, & Tindal, 2005).

Vocabulary Increasing Reading Comprehension Across Grade Levels

The research conducted by Yovanoff, Duesbery, Alonzo, and Tindal (2005), studied the importance of vocabulary and oral reading fluency on reading comprehension in different grades. There are two attributes that the researchers have found in literature that predict successful

readers. These include reading fluency and a high level vocabulary knowledge. The purpose of the research was to determine what the relationship is between the different variables of fluency, vocabulary, and comprehension, and how they are built together. The researchers wanted to determine if there was a shift from learning to read with a high emphasis on fluency to reading to learn with a high emphasis on vocabulary. The independent variable is the formal reading structure in each grade. The dependent variable is the regression coefficient. The researchers hypothesize that formal reading structure will diminish as the child gets older, therefore the regression coefficient for fluency should decrease, and in turn the complexity of written text increases and therefore the regression coefficient for vocabulary should increase.

There were five cross-sectional samples of students from grades 4-8. In grade 4 there were 981 students, grade five - 1.248, grade six - 1,248, grade seven – 1,248, and in grade eight there were 1,287. These students were all enrolled in a public school district in the Pacific Northwest. The researchers measured the students' oral reading fluency through a one minute reading of a grade level passage. The assessors marked the last word at the minute mark, counted the number of words, and subtracted any errors. The vocabulary for each grade level was measured using a student protocol with 70 items. Each word had multiple choice answers of the definition, a near definition, and a wrong definition. They analyzed the pilot data and came up with 50 adequately performing words and created two different forms of 25 each. In order to measure comprehension, the assessors used the same passage as the oral reading fluency. Students then had to answer questions about literal and inferential reading comprehension skills.

The researchers found that their hypothesis is supported. There seems to be a shift from "learning to read" to "reading to learn." Vocabulary regression coefficient increases while oral reading fluency decreases. In younger grades there is a high emphasis on oral reading fluency

while in the upper grades, there is a switch to vocabulary (Yovanoff, Duesbery, Alonzo, & Tindal, 2005).

Vocabulary instruction changes across grade levels along with the importance of vocabulary for reading comprehension (Yovanoff, Duesbery, Alonzo, & Tindal, 2005). Instruction in vocabulary also differs between schools. There is evidence that here needs to be more intense instruction in low performing urban schools (Lubliner & Smetana, 2005).

Vocabulary Increasing Reading Comprehension in Low Performing Schools

The research conducted by Lubliner and Smetana (2005) looked at a vocabulary and reading comprehension program that was implemented in a low performing urban school. The purpose was to determine if this program would increase student reading comprehension and vocabulary acquisition under natural classroom conditions. The study also sought to compare the achievement of the lower performing, title I school's fifth graders to fifth graders in an above average school before and after the intervention. The hypothesis is that through the use of the Comprehensive Vocabulary Development (CVD) metacognitive program, fifth grade students at a title I school would increase in reading comprehension and vocabulary acquisition in comparison to the above average students.

The students in the experimental group attended one of the lowest performing title I schools in California, located in a low-income urban area in Northern California. It was in the lowest 20th percentile of schools in the country based on student performance. There were 91 students in the 5th grade classes, however, only 77 participated in the instruction across three classrooms. Of these students, their scores on the previous year's standardized test were 5% advanced, 15% proficient, 20% basic, 15% below basic, and 45% far below basic. The

comparison group was a class of 34 students in a fifth grade class from an above-average performing school. This school was in the same district.

All three teachers taught the same material during their language arts block. Teachers were given a two hour training session Wednesday afternoons the month before implementation. The CVD program included 12 modules. Each CVD lesson was scripted and followed a similar format. Metacognitive tests, tests of reading comprehension, and vocabulary acquisition were administered three times during the study to the Title I students: in late September, in early January, and in early April. The control period extended for 12 weeks during the first half of the school year. There was an experimental group and control group within the title I school as well. Some classes received instruction in reading comprehension and vocabulary acquisition, while one class continued with normal instruction.

There was a narrowing of the achievement gap between the students who received the intervention and the above average children. On the other hand, there was an increasing gap between those students who did not receive the treatment and the control group that did not receive the intervention. Therefore, those students who received the intervention increased scores to be closer to students at the higher performing school, while students who did not have the intervention did not make gains in comparison to the high achieving school (Lubliner & Smetana, 2005).

While vocabulary level can affect reading comprehension, there are other aspects of finding reading comprehension level that must be considered. When determining a student's reading comprehension level, there are often questions about the story that are asked. Students need to answer these questions in order to determine if they understood the reading. There are

often unknown words in these questions that can affect reading comprehension. If a student does not know a word in the question, it is much harder to answer the question (Cunningham & Moore, 1993).

Vocabulary in Reading Comprehension Questions

The research done by Cunningham and Moore (1993), discussed whether the vocabulary in reading comprehension questions is independent of determining a students' reading comprehension. Reading comprehension has many different aspects. What a student can construct from a passage is affected by the student's prior knowledge and literacy skills. Academic vocabulary is sometimes used in comprehension questions, which can lead students to struggle with comprehension of a question. The purpose of the student is to see if there is link between vocabulary in reading comprehension questions and the students' reading comprehension level. The hypothesis is that an understanding of academic vocabulary increases students' ability to answer comprehension questions. The independent variable the comprehension question and the dependent variable is the students' understanding of academic vocabulary.

The participants in the study were 106 students. There were 31 fourth graders, 40 fifth graders, and 35 sixth graders. These students were all pulled from a small Midwestern elementary school. There were an equal number of boys and girls. Most of students were white and from a small rural town. Most of the students in the school scored average on the Iowa test of basic skills. Data collection on the students lasted three days. For the first day, half the students were given a particular passage and questions with basic vocabulary. The other half were given a passage with higher level academic vocabulary. The second day was similar, but the vocabulary was switched for each group. On the last day, students completed a cloze measure

on academic vocabulary. Each student answered ten question with academic vocabulary, and ten questions with everyday vocabulary. The questions were graded on a two point scale so half credit could be given for an answer.

Questions that contained academic vocabulary had an average of 7.6% lower scores than those with everyday vocabulary. This statistic was tested with a t test and found to be statistically significant. There was a moderate negative effect with the presence of academic vocabulary in comprehension questions. Therefore, it was determined that questions that contained higher level academic vocabulary, showed a lower level of comprehension for students then questions that contained everyday vocabulary (Cunningham & Moore, 1993).

Many studies examined the relationship between vocabulary and reading comprehension level in a student's native language. However, research is also interested in determining whether with relationship exists still in a student's second language (Sonbul & Schmitt, 2010).

Importance of Vocabulary Knowledge in Reading Comprehension of a Second Language

This study by Zhang and Annul, wanted to determine if vocabulary knowledge is as important in a second language as it is in a first language to a student's reading comprehension level (2008). There is little known about how vocabulary knowledge affects reading comprehension in a second language. Therefore, the researchers hoped to find if vocabulary knowledge in English affected reading comprehension as it does in a first language. The research questions included to what extent does the size of a student's vocabulary correlate with their reading comprehension level, and how does the level of vocabulary in an expository text affect a student's reading performance? The hypothesis given was, vocabulary knowledge will affect reading comprehension in a second language similarly to that of a first language. The

independent variable is the students' vocabulary knowledge and the dependent variable is their score on the vocabulary test.

The participants were thirty seven students from a secondary school in Singapore. All had completed six years of primary school in the Singapore education system and had been previously taught English in their curriculum. Students were first given the Vocabulary Levels Test to examine their range and breadth of vocabulary knowledge in English. A week after this test, the students' reading comprehension was assessed using the GCE 'O" Level English Language test. The test consisted of two parts, one with short answer questions and the other was a summary question. Lastly, in order to find the words the students struggled with, they were asked to circle any difficult words when reading the passage.

They researchers found that as a whole, the group had a relatively high level of knowledge of high frequency words, however, they struggled with lower frequency words. Beyond this, the research found a significant correlation between the student's vocabulary knowledge and their performance on the reading comprehension test. Last, the students' perception of difficult words in the passage did not correlate with their reading comprehension. The researchers were able to claim that vocabulary played a role in the reading comprehension level of a student's second language. The findings of the student also support the idea that vocabulary difficulty in a second language negatively affects a student's reading comprehension.

Vocabulary knowledge can greatly affect reading comprehension of students, especially in upper grade levels where there is a shift from "learning to read" to "reading to learn" (Yovanoff, Duesbery, Alonzo, & Tindal, 2005). Also, there is a greater need for direct vocabulary instruction in urban schools to increase reading comprehension (Lubliner & Smetana,

2005). Lastly, there is need to examine vocabulary in reading comprehension questions. Often comprehension questions have higher level vocabulary that makes it difficult for some students to answer (Cunningham & Moore, 1993). Lastly, this link between vocabulary knowledge and reading comprehension level carried over into the learning of a second language as well (Zhang & Annual, 2008). All of these factors can affect reading comprehension levels.

Strategies for Learning Academic Vocabulary

In education, there have been numerous strategies used to teach vocabulary. However, when educators are attempting to teach higher level, academic vocabulary, there are certain strategies that have been used that go more in depth into the meaning or attempt to teach the word in a different manner (Terril, Scruggs, & Mastropieri, 2004). These strategies are aimed at extracting meaning and in turn memorizing and internalizing the definition of the word.

Microconcord Strategy

The research done by Thurston and Candlin (1998) explored the use the Microconcord program to teach students academic vocabulary. The purpose of the research was to determine if using the Microconcord program to introduce students unfamiliar with the language of academic discourse to some of the most important, frequent, and significant vocabulary of English. The words in the program were broad and not specialized to a certain subject areas. The independent variable is the implementation of the Microconcord program. The dependent variable is the students' progress in retaining academic vocabulary. The hypothesis of the study was that the use of the Microconcord program would help both students and teachers better learn and teach academic vocabulary.

The participants of the study were teachers and students in Australia that were native and non-native speakers of English. Students were presented with multiple examples of vocabulary in context. Students then used the following steps to determine and remember the meaning of the word. 1) LOOK at key term and the word surrounding it. 2) FAMILIARIZE yourself with the patterns of language surrounding the key term. 3) PRACTICE the key terms without referring to the words surrounding it. 4) CREATE your own writing using the terms studied. Once piloting the program both teachers and students were given questionnaires about their experience with the program and if it was at all overall helpful to learning the meaning of the words.

Teachers and students who piloted the materials and the program commented that the materials are a helpful, innovative approach to vocabulary learning. The vast majority of the students indicated that they find the exercises very helpful or helpful. Teachers also said that the materials provide structure for their entire course. There is also some evidence from the surveys that students may benefit more from the material if it is presented in a teacher-mediated workshop format (Thurston & Candlin, 1998).

The Microconcord strategy attempts to take an unknown word and look at various aspects of that word. It aims to not only look at the patterns language around a word, but to also create and memorize meaning (Thurston & Candlin, 1998). Some strategies though aim to simply draw meaning through using context clues and the words surrounding the target vocabulary word. These strategies are embedded in the idea that many words have multiple meanings and can be used differently across various content areas. Through looking at the context, the multiple meanings can be seen (Nelson & Stage, 2007).

Contextually Based Multiple Meanings

The research done by Nelson and Stage (2007) examined the effects of vocabulary knowledge of words with multiple meanings on a student's reading comprehension. The main purpose of the study was to determine the effects of a contextually-based multiple meaning vocabulary instruction on a student's vocabulary knowledge and reading comprehension. The researchers hypothesized that the instruction of words with multiple meanings would increase a student's vocabulary knowledge and comprehension.

The participants in the study were composed of 134 third graders from eight different classrooms and 149 fifth graders from eight different classrooms at a small school in the Midwestern region of the United States. Approximately 32% of the students across the two grades qualified for free or reduced lunch. There was an experimental group and a control group to which the classrooms were randomly assigned. All experimental teachers were trained using a three step process that outlined the intervention. First, they were given rationale on the program, then the trainer modeled instructional activities, last there was a question and answer session for all teachers. All students were given the pre-test of the Gates-MacGinitie Reading test. After the pre-test scores were taken, the control group continued to follow the same Language arts curriculum used prior to testing. The experimental groups were given contextually bases multiple meaning vocabulary instruction on 36 selected target words along with three related words per meaning. This instruction was supplemental to their Language arts curriculum. Third graders received lower level target words than the fifth graders. Each word and its associated words were taught over the course of two days for 20-30 minutes each day. On the first day, the meaning of each of the target words was introduced through giving the students related words. The second day, students were given the history of the target word and its original meaning. Later in the lesson they would learn the words current meaning. Lastly, a word mapping activity was

completed where students matched the related words from the previous day with the appropriate meaning of the target word. After each of the 36 words was studied in this manner, the posttest was given to the experimental and control groups to determine if there was any growth in scores after the instruction.

After the treatment, the research examined the pre and posttest scores of both grades. Students that had low initial vocabulary and comprehension scores in the experimental group showed small improvements in their vocabulary scores when compared to the students in the control group. Those students that were initially high achieving did not show any improvement when compared to high performing peers in the control group. When looking at reading comprehension, students in the experimental group showed moderate to large improvements in their reading comprehension skills from pretest to posttest when compared to the control group. This difference proved to be statistically significant. There was a larger improvement in the low performing group however; the high performing group in the experimental condition did show improvement in comprehension as well when compared to the control group. The researchers were able to draw the conclusion that the contextually-based multiple meaning vocabulary instruction helps low achieving students improve their vocabulary and reading comprehension skills. The researchers also concluded that the program shows small improvements in reading comprehension for high performing students (Nelson & Stage, 2007).

The contextually based strategies attempt to look at the meaning of the word as it is seen in writing. However, some other strategies attempt to draw meaning in other ways that do not necessarily involve how the word is used in context. Mnemonic strategies attempt to help students memorize the meaning of the word by relating it to something familiar and memorable.

Instead of using context, it uses association to words or pictures in order to draw meaning from a vocabulary word (Terril, Scruggs, & Mastropieri, 2004).

Mnemonic Strategies

In the study conducted by Terril, Scruggs, and Mastropieri (2004), the researchers sought to find an appropriate strategy to teach SAT vocabulary to students with learning disabilities in a high school setting. Students with learning disabilities often struggle with memory tasks. Therefore, the main purpose of the study was to determine whether mnemonic strategies for teaching vocabulary would be useful for high school students with learning disabilities. The independent variable is the mnemonic strategies and the dependent variable is the recall of vocabulary by the students. The main hypothesis of the study stated that students with learning disabilities will recall vocabulary words better through using a mnemonic strategy than through a drill and practice routine.

The sample included eight students in the 10th grade all identified as having a learning disability. There were seven males and one female, with the mean age of 16 years 6 months. The students were taught in a self-contained special education classroom. The high school was located in an Eastern United States suburban community. The school was a high performing school where typically 95% of students attend a 4-year college after graduation. All instruction on vocabulary was led by the classroom teacher. The teacher, who was in charge of research, would give her students a packet of vocabulary words each Monday and either a lesson in mnemonic or standard direct instruction. Guided practice on the words was given the next day Tuesday and independent practice was on Thursdays. The teacher tested to students on the words the following Monday and then introduced new vocabulary words for the week. Under the mnemonic condition, the teacher would pronounce each word and have the students repeat.

Then, she introduced a key word that linked each new word. Then, the teacher displayed illustrations that accompanied each word. Lastly, she gave them a sentence and had them substitute various words in order to practice meaning. In the nonmnemonic condition, the teacher did a simple drill and practice routine of each of the word.

Vocabulary recall was much greater in the mnemonic condition. Students using the mnemonic condition correctly recalled the meaning of 27.5 out of 30 words, 91.7% of the words. In the nonmeumonic, the students only recalled 14.6 out of the 30 words, or 48.8%. Therefore, it was determined that students with learning disabilities are able to recall SAT vocabulary better and more consistently when they are given a mnemonic strategy, when compared to a drill and practice strategy. The conclusion from this research is that students with learning disabilities are able to retain vocabulary when they are given mnemonic strategies when compared to drill and practice (Terril, Scruggs, & Mastropieri, 2004).

Some vocabulary strategies, such as the mnemonic strategy teach vocabulary directly (Terril, Scruggs, & Mastropieri, 2004). However, there are other strategies that teach vocabulary concurrently with instruction of a given text (Lovelace & Stewart, 2009).

Systematic Vocabulary Instruction

The research conducted by Lovelace and Stewart, wanted to determine the effect of a systematic vocabulary instruction technique on African American children in second grade that had below average vocabulary skills (2009). Another purpose was to establish if book type had any effect on retention of new vocabulary words. The research question was will the use of the robust vocabulary instruction program increase African American students' with below average vocabulary skills vocabulary retention? And does book type affect their vocabulary retention ability? The independent variable is the intervention strategy the vocabulary intervention

instruction, robust vocabulary. The dependent variable is the word knowledge as measured by the E. Dale classification on a three point scale (0 – no knowledge to 3 – full concept knowledge).

The participants included five African American students in second grade between the ages 7.0-8.0. They all had the ability to attend to material for at least 30min, which was judged during a participant eligibility assessment. They all had hearing and visual abilities within the norm range. All participants also had cognitive abilities within the norm range. However, they all have vocabulary skills that were at least two standard deviations below the mean for second grade students. Lastly, all participants had not knowledge or simply surface level knowledge of the words being measured. Students participated in a small group session twice a week for 30 minutes. During each session, a single book was read and was followed by a vocabulary lesson on the instructional word set for the book. Weekly probes individually administered to students on days where there was not an intervention session. These included 18 words, 6 instruction words, 6 commonly known words, and 6 control words. After the sessions a follow up test was administered to determine their retention of vocabulary words.

The findings show a potential for the robust vocabulary instruction for increasing students' vocabulary knowledge that had below average skills. Therefore the vocabulary strategy presented showed that with instruction of a vocabulary strategy, students were able to increase their word knowledge (Lovelace & Stewart, 2009).

The strategies presented above all aimed to gain meaning and memorization of academic vocabulary words. The microconcord strategy used context clues as well as meaning creation in order to understand academic words (Thurston & Candlin, 1998). The contextually based strategy sought to draw meaning from context clues across different content areas in order to

determine the multiple meanings of a word (Stage & Nelson, 2007). The mnemonic strategy attempted to relate unknown academic words to easily related words and items in order to memorize meaning (Terril, Scruggs, & Mastropieri, 2004). Lastly, the systematic vocabulary instruction, took common words and along with new words and taught then concurrently with instruction (Lovelace & Stewart, 2009). While all these strategies wanted to increase the vocabulary knowledge of a student, they were also in turn attempting to increase a student's reading comprehension. As a student learns more vocabulary, they are better able to comprehend what was read (Yovanoff, Duesbery, Alonzo, & Tindal, 2005).

Conclusion

This chapter presented a review of the literature on academic vocabulary instruction, strategies, and its relationship to reading comprehension. The relationship between reading comprehension and vocabulary involves many factors ranging from English Language Learners to urban schools.

Vocabulary has many implications for instruction in the classroom. English Language Learners often struggle to learn and retain academic vocabulary. Therefore, there is more direct instruction, so that students can better learn academic words (Lesaux, Kieffer, Faller, & Kelley, 2010). Also, schools often implement direct instruction when there is a high stakes state test. Often these tests have academic vocabulary in the readings and questions. Therefore, schools implement an instructional model to enforce and emphasize the teaching of these academic words (McMillian, 2009).

Secondly, there are many strategies that are used to specifically teach academic level vocabulary. The first strategy used is the microconcord strategy. In this strategy students are given a target academic vocabulary word. They then look, familiarize, practice, and create in order to determine and memorize meaning (Thurston & Candlin, 1998). The next strategy involves using context clues around the target academic vocabulary word to find the meaning. This strategy was specifically used to find multiple meanings of the word across various content areas (Nelson & Stage, 2007). The last was a mnemonic strategy to learn unknown vocabulary words. The teachers used familiar words, pictures, and phrased to relate the unknown words to. This aids in students memorizing the meaning of the word (Terril, Scruggs, & Mastropieri, 2004).

Lastly, academic vocabulary knowledge is tied to reading comprehension levels. The first study by Yovanoff, Duesbery, Alonzo, & Tindal discussed the tie between vocabulary knowledge and reading comprehension across grade levels. As there is a switch from “learning to read” to “reading to learn,” vocabulary knowledge becomes much more vital to reading comprehension (2005). A next study examined vocabulary knowledge as it related to reading comprehension in urban schools compared to high performing schools. Researchers found it was much more important to give direct instruction in urban schools to increase reading comprehension to close the gap between high performing schools (Lubliner & Smetana, 2005).The last study examined the use of academic vocabulary words in reading comprehension questions. If the student had questions with higher level academic language, it was much more difficult for them to answer the comprehension questions correct (Cunningham & Moore, 1993)

Chapter III

Procedures for the Study

This chapter will review the population used in the study, the procedures, and data collection. The sample population discusses the students that were involved in the study and their basic demographics and skills. Next, the procedures section overviews how the study was conducted. Lastly, the data collection section discusses how and what data was collected during the study.

Sample Population

The study was conducted with eight students in special education in ninth grade. All students attended a public high school in Milwaukee, Wisconsin. The students were included 90% of the day in the general education classroom. The disabilities of the students included, autism – 1, learning disabled – 4, and other health impairment - 3. The ages of the students ranged from 14-16 with an average age of 15.3. There were three female students and five male students.

Student A, 14.11, in ninth grade, male, and identifies as African American. His disability category is other health impairment, where it is identified that he has attention deficit disorder. His reading levels are relatively close to grade level. He is able to read high school leveled text with fluency and answer recall comprehension questions correctly. At times, he struggles with extending and evaluating on grade level texts. His vocabulary skills are relatively proficient. He knows daily vocabulary and knows some academic vocabulary. Student A is able to understand some words using context clues, but sometimes needs help fully comprehending the word. In his English class, he is able to all the general education assignments and reading, and sometimes just needs directions explained again.

Student B is in ninth grade, female, 15.9 years old, and identifies as African American. She has a learning disability in reading and written expression. She struggles to read on grade level texts with fluency and comprehension. She can answer a few recall questions that are directly from the text, but cannot extend or evaluate text. Student B has a limited academic vocabulary and has a difficult time understanding words in context and needs the definition directly explained. In English class, readings are leveled down lexiles for her, and questions are changed to easier recall questions.

Student C is a ninth grade, male who is 16.2 years old and identifies at African American. His identified disability is Autism. In regards to reading and comprehension, he has very good comprehension but struggles with fluency of on grade level texts. He is able to recall, evaluate, and extend grade level texts but often reads aloud in a laborious manner. Student C has a relatively good vocabulary knowing most everyday words and some academic vocabulary. However, he is very good at using context clues to determine the meaning of a word. In English class, he completes most of the general education work, and only needs modified assignments for writing.

Student D is a ninth grade female who is 16.2 years old and identifies as African American. She is identified as having a learning disability in math and reading. Her reading level is relatively close to grade level but slightly below. She is able to read texts with good fluency but often misreads unknown words. Her comprehension is relatively good and can answer basic questions about the text but struggles to extend and evaluate on grade level texts. Student D has a great ability to understand academic words in context. She is able to use the reading to comprehend the definition of the word. In English class, Student D is able to complete on grade level work, but sometimes needs certain texts and unknown words read to her.

Student E is a ninth grade female who is 15.4 years old and identifies as African American. Her identified disability is a learning disability in reading and writing. She has difficulty reading on grade level test with fluency and comprehension. She struggles reading aloud and often mixes up and leaves out various words. Her comprehension is adequate, but struggles to extend and evaluate on grade level text. Her vocabulary is behind grade level. She know everyday vocabulary but knows little academic language. Student E struggles to figure out the meaning of world using context and tends to say the definition of words she knows around the word. In English class, many texts are read aloud to her and her writing assignments are shortened.

Student F is male ninth grade student, 15.1 years of age, and identifies as Caucasian. His primary disability is classified as other health impairment more specifically an anxiety disorder. He is able to comprehend most on grade level texts, but his fluency is not on grade level. He is able to read every word with accuracy but reads in a very slow laborious manner. He can answer comprehension questions verbally and can extend and analyze text. Student F knows the definition of most academic words and can explain them in context. His main struggle in English class is writing. His anxiety disorder affects his writing and is worried that he is not writing something well. Therefore, in English class, his writing assignments are shortened and completed on the computer.

Student G is a male, ninth grade student, 14.7 years of age and identifies as African American. His primary disability is a learning disability in reading and math, his secondary disability is speech and language. His reading and comprehension levels are below grade level. He is able to read with relatively good fluency but will stutter over unknown words. His comprehension levels are well below grade level and he struggles to even recall direct

information from the text he has read. Student G also struggles with vocabulary and understanding unknown words in context. He knows most every day, basic language but knows few academic words. In English class, readings are scaled down the lexile level or are read aloud to him. Also, questions are simplified and shortened.

Student H is a male, ninth grade student who is 15.1 years old and identifies African American. Is primary disability is labeled as other health impairment, specifically attention deficit disorder. Student H's reading and fluency level is near grade level. He is able to read on grade level texts aloud and sound out unknown words. In regards to comprehension, he is able to recall information from grade level text and extend and evaluate the text as well. He knows everyday vocabulary and knows most academic vocabulary. When using context clues to determine the meaning of a word, he is able to figure out what most words mean, but is sometimes unsure of is answers. In English class, Student H completes all general education work and sometimes needs to be redirected back on task.

The school where the research took place was a newly formed gifted and talented school in the Milwaukee public school system. The school was originally only an elementary school for students in grades three through five. Ten years ago, the school added on a middle school for sixth through eighth graders. In the year 2014, there was a high school added on to accommodate the gifted and talented students moving in to high school. The year of its inception, the high school only had a ninth grade and every year after another grade was added as students moved up. All the research was completed within the first academic year of the high school.

While the high school was designated as a gifted and talented school, not all the students in special education were considered to be gifted and talented. Due to district restrictions, many of the special education students were simply assigned to the school. About fifty percent of the

students in special education had high school reading levels. The other half ranged from elementary level to middle school. This made much of the curriculum exceedingly difficult for them. Much of the curriculum designed for this High School was heavy on informational text and dealt with high level thinking and reasoning. Therefore, it is imperative for many of these students to find and utilize strategies to understand high level academic text.

Procedures

The purpose of the study was to determine if direct instruction of academic vocabulary leads to an increase in reading comprehension of subject area texts. In order to properly assess growth, the first step taken was to determine the student's reading comprehension level of a historical subject area text about World War I. This was a selection from the QRI-5 high school test (Leslie & Caldwell, 2011). Each of the eight students was individually tested in order to get their baseline scores of frustrational, instructional, or independent at the high school reading level. The test measures both fluency and comprehension however, for this study, there was more analysis conducted on comprehension. Students were asked both explicit and implicit questions about the text they had just read. Explicit questions ask answers that can be taken directly out of the text. Implicit questions cannot be answered straight from the text and conclusions must be drawn from information given. The frustrational level means the student answered 0-6 questions correct, instructional they were able to answer 7-8 questions, and independent was 9-10 questions correctly. The first test results showed that three of the students were testing as frustrational and five were instructional.

After this test was given, ten academic level vocabulary words were chosen from the reading to directly instruct the students on. These words were chosen based on two factors. The first were words that were mostly commonly mispronounced by students during the reading. The

second way words were chosen was those words that mattered to the overall meaning of the text such as common war terms they may not know. The words were economic, political, compete, perceive, empire, stalemate, tsar, unrestricted, interception, and foreign. There was a six week break between the initial test and the direct instruction due to winter break and high school final exams. Once students were back on their regular daily schedule, direct instruction of the words occurred during their supported study time the last half hour of the school day. During this time, students in special education would go to one of two of their special education teacher's classrooms on alternating A and B days. Therefore one day there would be four students in the classroom then the next day, four different students would receive the same instruction. When they were not being instructed in English, the other special education teach would instruct them in math skills.

Each day two different words were directly instructed through the use the frayer model graphic organizer (Palmer, J., Boon, R., & Spencer, V, 2014). This organizer allows students to look at the given vocabulary word in a variety of different ways. They define the word, determine characteristics of word, and give examples and non-examples. Before the students used this on the ten academic words, they were taught the system with known words. For example, students would be given the word "mammal," which is a word they have been taught in science since sixth grade. First, they found the definition of the word in the dictionary and write it in the definition section. Then, students came up with characteristics for mammals such as "fur," "backbone," and "warm blooded." Then they would give examples of mammals such as "dog" and "cat" as well as non-examples such as "bird" and "snake." Using these known words helped the class determine what belonged in each box and how the boxes related to the word.

After this for the next three weeks, students were given two words a day to learn through direct instruction with the teacher. The students were given the word and the definition. Then, with the help of the teacher, through think alouds and questioning parts of the definition, the students wrote the definition in their own words. After, with the teacher writing on the white board, students would give characteristics, non-examples, and examples. In order to come up with ideas for these sections, the students would raise their hands and give examples. If they were not correct, the students did a think aloud until they got the correct answers. After both words were completed, students were verbally given checks for understanding on the words. One student would be called on to give the definition of the word, and then another to give me an example and a non-example. This was done until all students answered a question about the words.

Once all the words were directly taught, the students were retested on the same QRI-5 test (Leslie & Caldwell, 2011). This was done to determine if there was any growth in the student's reading comprehension after direct instruction of vocabulary was given. Students were again tested individually to determine if their reading comprehension of the text increased.

Data Collection

Data was collected at two different points during the course of the research. First, baseline data was collected through individually testing the students on their reading comprehension level. All students were given the high school level historical academic test in the QRI-5 entitles "Word War I" (Leslie & Caldwell, 2011). Students were tested on two different aspects of reading comprehension, implicit and explicit knowledge about what they read. Students were also given two opportunities to answer the question, on without look backs to the text and one with look backs. Students would first be instructed to answer the question without looking back to the text. If they could not answer the question or gave the wrong answer, they

were told to look back to what they read. If they could not find the correct answer after one minute, the question was marked wrong. Data was collected on how many explicit and implicit questions they could answer without look backs and with. From this data, it was determined whether the student was frustrational, instructional or independent at the high school level. The frustrational level means the student answered 0-6 questions correct, instructional they were able to answer 7-8 questions, and independent was 9-10 questions correctly. Frustrational meant that they had little understanding and comprehension of what they had read. Instructional means that with help from a teacher and direct instruction in the subject, the student is able to adequately understand the text. Independent means that the student is able to fully comprehend the text without help from the teacher.

Students were then given the ten vocabulary words to learn. Each day during their thirty minute intervention period they had to complete a graphic organizer for two of the ten academic vocabulary words. The words' definitions were both directly instructed by the teacher. The teacher would give the students the definition, then through think alouds about what the words in the definition meant, the class would put the definition in their own words. The students would then raise their hands to provide appropriate characteristics, examples, and non-examples. After both of the organizers were complete, the teacher would conduct checks for understanding with each of the students asking them what the word meant and to give examples or non-examples of the word.

After going though the ten vocabulary words were directly taught, students were retested on the historical academic reading in the QRI 5. Students were tested two and half months after the original reading. Students were asked the same implicit and explicit question questions as before. When students were originally tested, they were not given the correct answers if they

answered wrong and were not told whether or not their answer was correct. When they were restested, the numbers of correct implicit and explicit questions were measured along with look backs and non-look backs. Statistical measures of percent change in score and statistical significance of the change were then performed.

In the next chapter, the data taken is examined statistically. Any increases and decreases between the pretest and posttest were measured in order to determine there were any statistically significant changes in the student's reading ability after the intervention of vocabulary instruction.

Chapter IV

Presentation of Data

Introduction

This chapter will delve into the data collected throughout the study. Data was collected on the students' ability to answer reading comprehension on pre and post reading text. Half of the comprehension questions were explicit questions directly from the text. The other half of the questions were implicit where students had to draw conclusions from the text they read. Students were also given the chance to look back into the text to attempt to answer the question if they did not know the answer. The students' ability to correctly answer these questions in both the pretest and post-test was measured and significance was tested. The hypothesis is that the test scores will increase in all types of questions after the intervention is administered.

Pretest

The pretest was conducted individually with each student. The teacher read the student the instructions for the QRI-5 test for the high school level passage "World War I" (Leslie & Caldwell, 2011). Students then read the passage aloud as the teacher checked for fluency. After the students completed the reading, the teacher then asked the students ten reading comprehension questions about the text. Five were explicit questions that were drawn straight from the text, the other five were implicit where students had to draw conclusions from information in the text. If students were unable to answer the question stated, the teacher instructed them to look back in the text. If after a minute they still could not find the answer, the question was marked incorrect. The number correct with look backs includes all questions answered correctly with and without look backs. The students' scores are recorded below.

Reading Comprehension Scores for Reading Pretest

Student	Pre-test Explicit NB	Pre-test Implicit NB	Pre-test Explicit LB	Pre-test Implicit LB	Total NB	Total LB
A	2	4	4	5	6	9
B	0	3	1	4	3	5
C	1	5	5	5	6	10
D	3	3	4	5	6	9
E	0	0	0	0	0	0
F	2	3	5	5	5	10
G	0	0	0	0	0	0
H	1	4	5	5	5	10
Total	9	22	24	29	31	53

Figure 4.1 NB = No look back, LB = Look Back

The scores on the pretest reveal that without look backs, students were able to answer more implicit questions (median = 3), than explicit question (median = 1). The same was true when they were allowed look backs, with students answering correctly implicit questions (median = 5) more than were able to answer explicit (median = 4). Overall, students were able to answer more questions when given look backs (median = 9) compared to when they were not given look backs (median = 5). However, there were two students that did not answer any questions correctly with or without look backs. These were the scores for the test given before the intervention, after the intervention a post-test was given to see if there was any increase in scores.

Post-test

The post-test was administered individually to each student. This test was conducted after the students were given the vocabulary intervention. This was two months after the pretest was given. This time included two weeks of winter break, two weeks of final exams and three weeks of intervention. Students read the same passage as they did during the pretest. They were given the exact same instructions from the teacher to read the passage and to answer the questions without look backs first. Each student was scored on the number of explicit and implicit questions they were able to answer without look back, and then scored on the total number they

could answer once given the chance to look back at the text.

Reading Comprehension Scores for Read Post-Test

Student	Post-test Explicit NB	Post-test Implicit NB	Post-test Explicit LB	Post-test Implicit LB	Total NB	Total LB
A	3	5	4	5	8	9
B	2	4	4	4	6	8
C	4	5	5	5	9	10
D	3	4	4	5	7	9
E	0	0	0	1	0	1
F	3	5	5	5	8	10
G	0	0	0	1	0	1
H	2	4	5	5	6	10
Total	17	27	27	31	44	58

Figure 4.2 NB = No look back, LB = Look Back

The scores on the post-test show that without look backs, students were generally able to answer more implicit questions (median = 4) than they were able to answer explicit questions (median = 2.5). Similarly, when given look backs, students were still able to answer more implicit question (median = 5) than they were able to answer explicit (median = 4). However, the amount of questions they were able to answer of both types increased when given look backs (median total no look backs = 6.5, median total look backs = 9). Once the post-test was completed, there was a comparison done to determine if any increases in scores were significant.

Comparison and Significance

The hope of this study was to see a significant increase in academic subject area test reading comprehension scores of high school students with disabilities after intervention. Students were first tested on their reading comprehension of a historical informational test from the QRI- 5 entitled “World War I” (Leslie & Caldwell, 2011). Their special education teacher then provided an intervention of direct instruction of ten academic vocabulary words from the reading. Students used a Frayer model to investigate different facets of the words including the definition, characteristics, examples, and non-examples. The teacher then conducted checks for

understanding, questioning each student about the definition or examples to ensure they understood what they learned. After the intervention, the students were tested again on the same reading and questions to see if there were any gains made in their comprehension of the text. Students were asked both explicit and implicit questions about the text and were first told to answer the questions without looking back at the text but were then allowed to if they did not know the answers. Below are the comparisons of scores on different types of questions and the total scores. Two students did not answer any questions correctly.

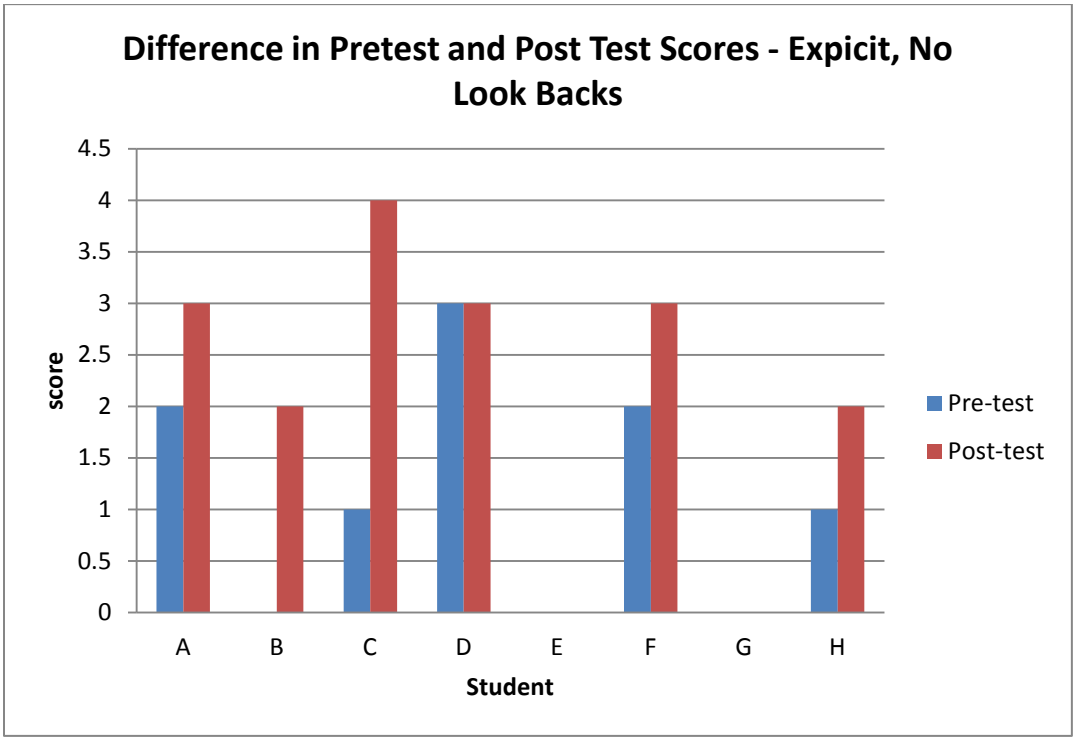

Figure 4.3

Students were given explicit questions which could be drawn straight from the text and were first told to try and answer them without looking back at the text. The hypothesis was that students' scores would increase from pretest to post-test after the intervention. Referring to figure 4.3, students were, in general, able to answer more questions on the post-test (median = 2.5) then they were on the pretest (median = 1). A one-tailed dependent t-test was performed

and a t-value of 0.0166 was found to be not significant at the $p<0.05$ value. Therefore, the null hypothesis is accepted.

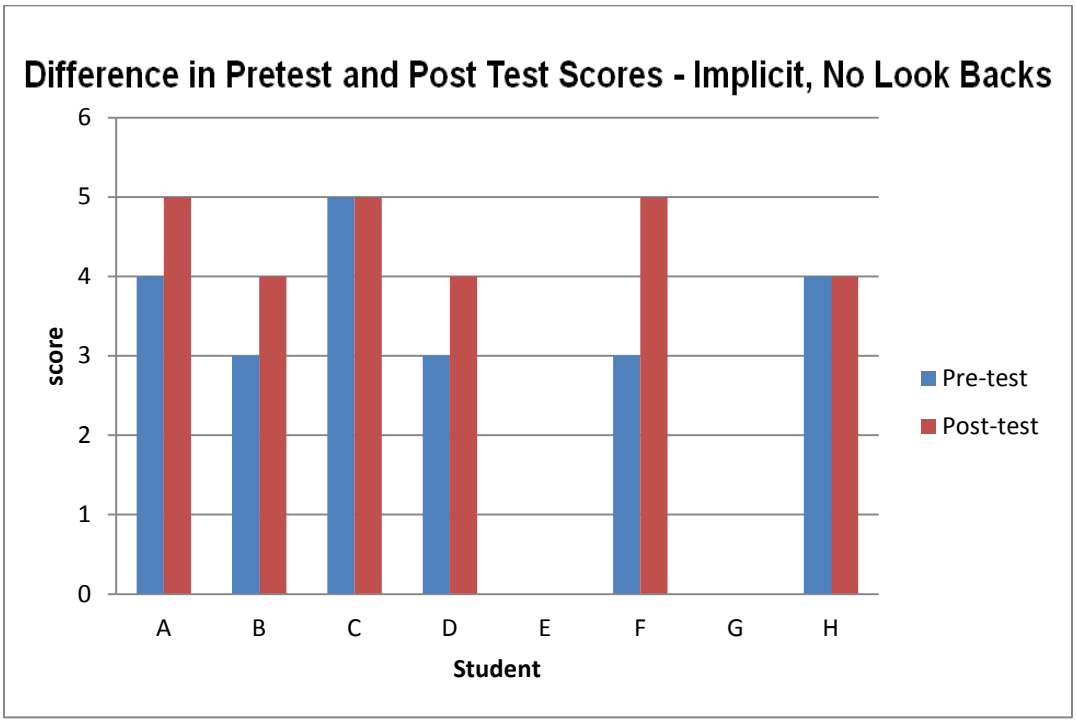

Figure 4.4

Students were given implicit questions where they had to draw conclusions from what they had read in the text, and were first told to try and answer them without looking back at the text. The hypothesis was that students' scores would increase from pretest to post-test after the intervention. According to figure 4.4, in general, students were able to answer more questions correctly on the on the post-test (median = 4) than they were on pretest (median = 3). A one tailed, dependent t-test was run on the scores and a t-value of 0.0246 was found to not be significant at the $p<0.05$ value. Therefore, the null hypothesis is accepted

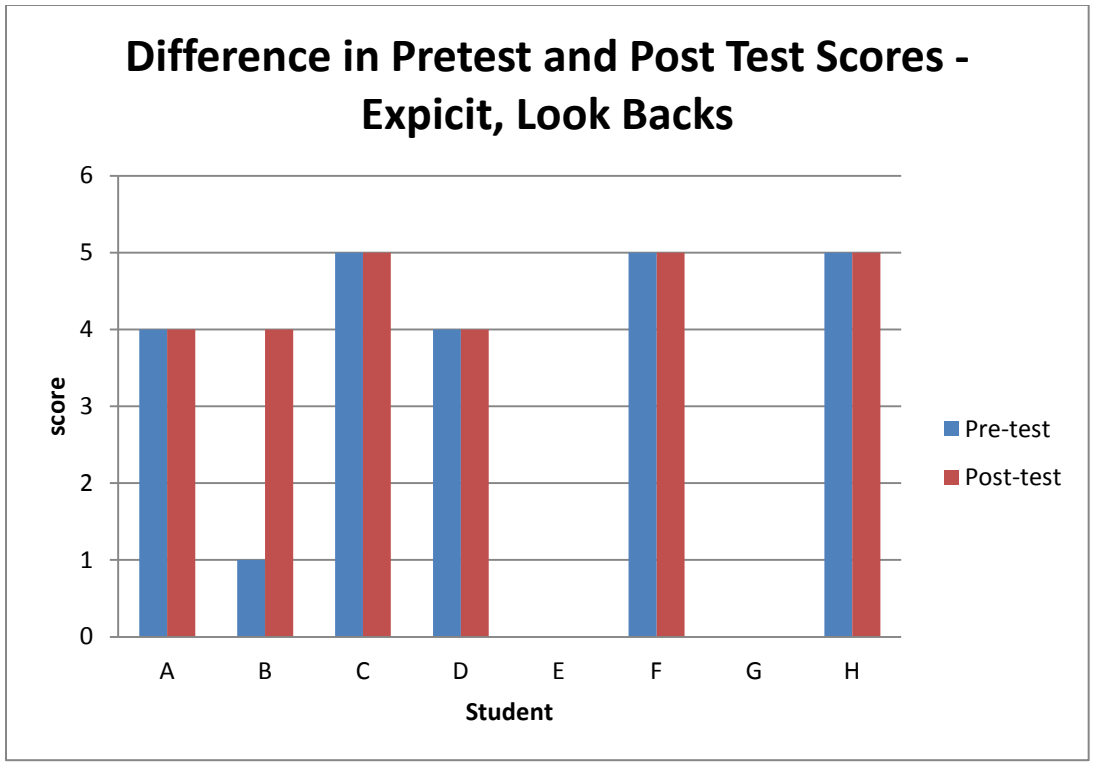

Figure 4.5

Students were given explicit questions which could be drawn straight from the text and were then told they could look back at the text if they did not know the correct answer. The hypothesis was that students' scores would increase from pretest to post-test after the intervention. In general, referring to figure 4.5, the scores for the pretest (median = 4) were similar to those of the post-test (median = 4). However, student B showed increases in their score. A one tailed, dependent t-test was run and a t-value of 0.175 was found to be not significant at the $p<0.05$ value. Therefore, the null hypothesis is accepted.

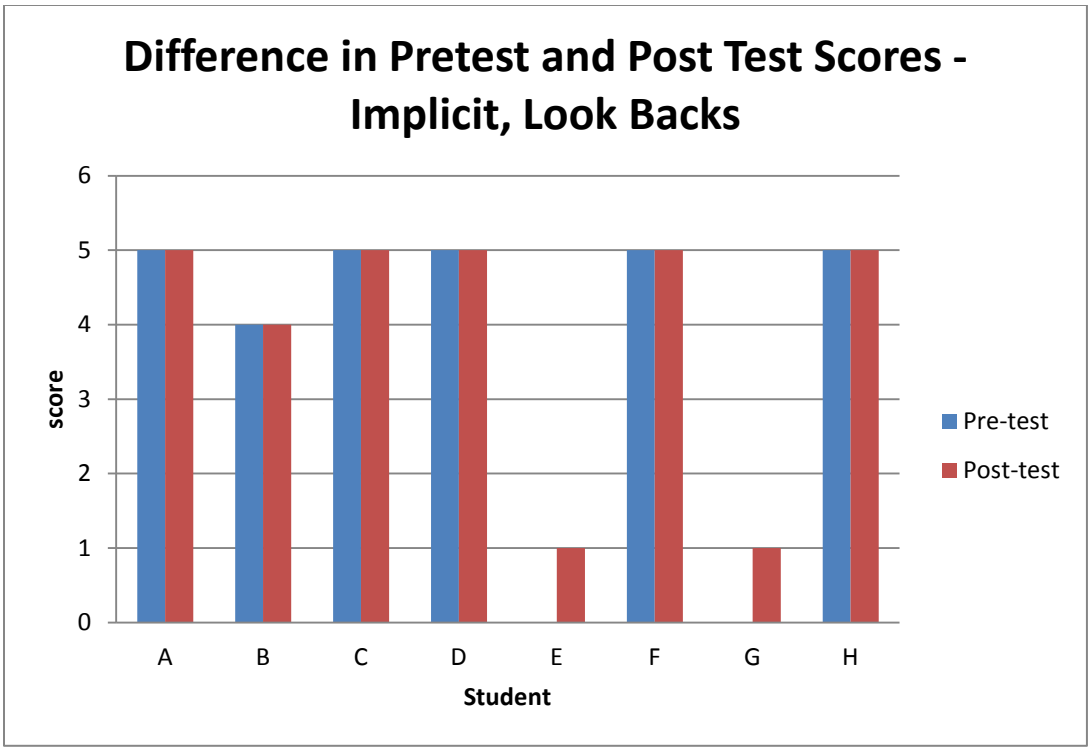

Figure 4.6

Students were given implicit questions where they had to draw conclusions from what they had read in the text, and if they did not know the answer were allowed to refer back to the text. The hypothesis was that students' scores would increase from pretest to post-test after the intervention. According to figure 4.6, generally, there was no increase from pretest scores (median = 5) to post-test scores (median = 5). However, students E and G showed increases in their score. A one-tailed, dependent t-test was run and a t-value of 0.0852 was found to not be significant at the $p<0.05$ value. Therefore, the null hypothesis accepted.

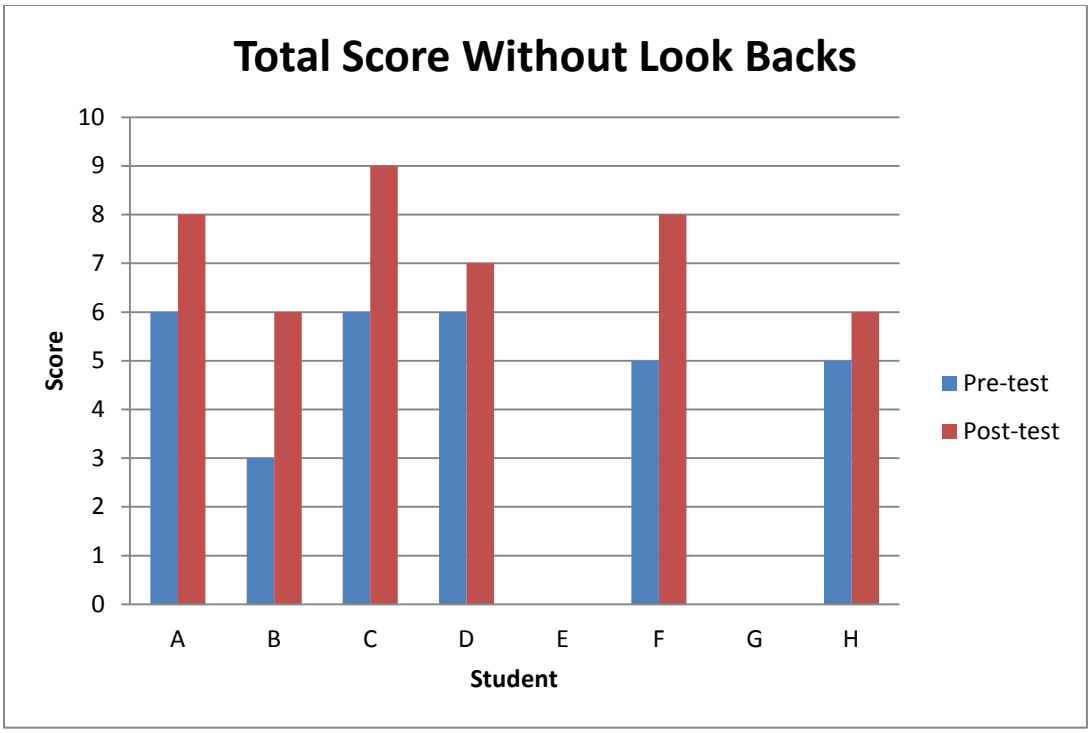

Figure 4.7

Students were given their reading comprehension test and were told to first attempt to answer the questions without looking back to the text. The hypothesis was that students would be able to answer more questions on the post-test than on the pretest after the intervention was given. In general, according to figure 4.7, the post-test scores (median = 6.5) were slightly higher than the pretest scores (median = 5). A one tailed, dependent, t-test was run to determine the significance. A t-value of 0.0048 was found to not be significant at the $p<0.05$ value. Therefore the null hypothesis is accepted.

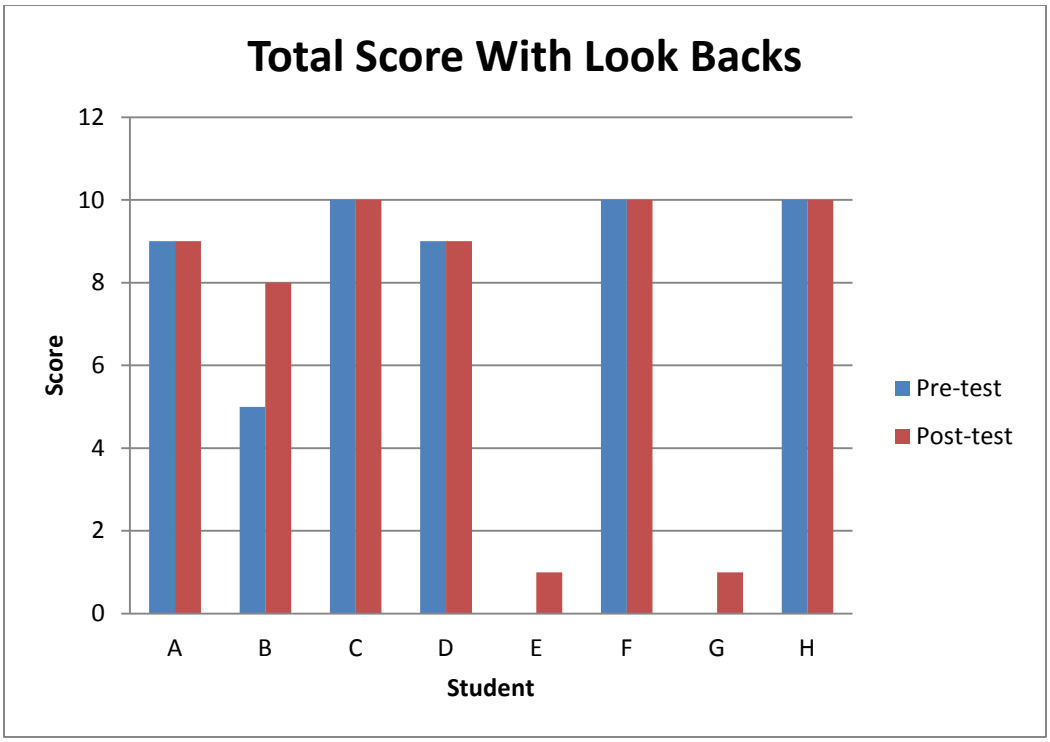

Figure4.8

Students were given their reading comprehension test and were told to first attempt to answer the questions without looking back to the text, then were allowed to look back at the text to attempt to find the answer. The hypothesis was that students would be able to answer more questions on the post-test than on the pretest after the intervention was given. According to figure 4.8, students generally had similar scores from their pretest (median = 9) to their posttest (median = 9). However, students B, E, and G showed increases in their score. Therefore a one-tailed, dependent, t-test was run in order to determine significance. A t-value is 0.069 was found to be not significant at the $p<0.05$ value and therefore the null hypothesis is accepted.

Conclusion

The hypothesis of this study was that students' reading comprehension scores would increase from the pretest to the post-test after the intervention of direct vocabulary instruction of

academic words from the text. There were some increases in scores in general in the number of implicit and explicit questions answered correctly from pretest to post-test. Specifically, students were able to answer questions more without look backs for both implicit and explicit questions. However, none of this data was found to be significant. Therefore, the null hypothesis that there was not significant change was accepted. The next chapter will explore reasons as to why there was no significant change in reading comprehension scores after the intervention.

Chapter V

Conclusions

Introduction

The following chapter will look into the all the research that was conducted and the data that was collected. First, the results of the research will be reconnected to the research that was previously done and summarized in chapter two. Next, the results of the study will be explained in detail. Then, the limitations and strengths of the research conducted will be examined. Lastly, there will be recommendations for future research on vocabulary will be made based on the results of the study conducted.

Connection to Existing Research

Chapter two explored three main facets of vocabulary and comprehension levels. These included vocabulary instruction, influence of vocabulary on reading comprehension, and strategies for learning academic vocabulary. The research conducted relates to the previously examined research in chapter two in a variety of ways.

The research on vocabulary instruction delves into the various methods that state new vocabulary can be taught to students. Specifically, there is a great deal of research on the effects of direct instruction specifically using vocabulary methods and organizers. The study conducted by Lesaux, Kieffer, Faller, and Kelley (2010) describes the vocabulary strategy of Academic Language Instruction for All Students. This strategy allows students to explore many facets of the vocabulary word and how it is used in context. Similarly, the research done for this study used a graphic organizer strategy that allowed students to look at different characteristics, examples, and non-examples of the given vocabulary word. Another study that relates to this

current research is Sunbol and Schmitt's study (2010). The study examined the difference between direct instruction of vocabulary and incidental learning of vocabulary. The study discovered that students respond much better to direct instruction than they do to the incidental learning of vocabulary as they read. This current study had similar notions. All vocabulary was directly instructed instead of having students learn while reading.

The next group of previous research examined the effects of vocabulary knowledge on reading comprehension levels. The current research wanted to determine if the direct instruction of unknown, high level vocabulary words could lead to an increase in reading comprehension of students. Yovanoff, Duesbery, Alonzo, and Tindal found that as students progress from grade four to eight, there was higher emphasis put on the importance of vocabulary words in regards to reading comprehension ability (2005). This supports the current research study because as ninth grade students, there needs to be more vocabulary instruction done in order to increase their comprehension levels as they are receiving higher level, content specific text in upper grades. Similarly, the study conducted by Lubliner and Smetana wanted to determine if an intervention in vocabulary would increase fifth grade students' state test scores in reading (2005). The study found that students who received the intervention did better on the testing than student who did not. This supports the thought that teaching vocabulary can help students' reading abilities. The research that was previously conducted on the subject relates to the thought that teaching vocabulary can help increase reading scores and ability.

The last area where previous research was examined was strategies for learning academic vocabulary. The research that was conducted used a direct instruction of vocabulary where students used a graphic organizer to explore various facets of the given word. All the research that was looked at in this section provided a different strategy to teach students vocabulary

words. The strategy in this study had students LOOK at key term and the words surrounding it. 2) FAMILIARIZE yourself with the patterns of language surrounding the key term. 3) PRACTICE the key terms without referring to the words surrounding it. 4) CREATE your own writing using the terms studied (Thurston & Candlin, 1998). This strategy had students interact with the vocabulary word on various levels, similarly to the graphic organizer used in the current research. Another study looked at the use of multiple meaning graphic organizers to teach students vocabulary words (Nelson & Stage, 2007). This supports the use of graphic organizers to teach vocabulary. The previous research details teaching vocabulary through strategies that allow students to evaluate different aspects of the vocabulary word through graphic organizers. The use of graphic organizers was used in this study to help students learn vocabulary words.

The research study conducted also aligns with the ninth grade common core state standards. The current common core state standards in ninth grade English/Language arts address the importance of vocabulary knowledge and attainment. The standard RL.9-10.4 deals with determining the meaning of a word in a text and the impact of that word on the overall meaning of the text. Similarly, the standard RI.9-10.4 addresses determining the meaning of a word and finding its connotative meaning in relation to the text. These standards were examined through look at vocabulary words from many angles, and determining if learning vocabulary words can help students gain further meaning from text The last state standard that addresses the importance of vocabulary is L.9-10.5 which states that students should demonstrate understanding of word meanings in writing. Vocabulary knowledge is imperative in ninth grade English/language arts in order to show proficiency (Common Core State Standards Initiative, 2015).Through learning these words, students will have a better understanding of how to vocabulary word is used and, in turn, how they can use it in their writing.

Explanation of Results

The hypothesis of this study was that students' reading comprehension scores would increase from the pretest to the post-test after the intervention of direct vocabulary instruction of academic words from the text. Students were given that same pretest and post-test on World War I. Their reading comprehension was tested through explicit, directly from the text, and implicit questions where students have to draw conclusions from information provided in the text. Between the pretest and post-test, students were given a vocabulary intervention. Ten words that were the most commonly missed as the students read orally and contributed to the overall meaning of the text were selected for students to learn though direct instruction and graphic organizers. After the intervention, students were retested on the same reading passage to determine if there was an increase in reading comprehension.

The students scores on both implicit and explicit questions were recorded for each test. Also, the numbers of questions the students were able to answer with and without look backs to the text for both implicit and explicit questions were recorded. Students were first told to attempt to answer the question without looking back at the reading. However, if they could not answer the question correctly, they were told to look back in the text and given a minute to attempt to find the answer. Overall, between the pretest and post-test, some students were able to answer more questions, but none of the changes were found to be statistically significant.

Student A was able to answer six questions out of ten without look backs and nine with look backs on the pretest. Also, the student was able to answer more implicit questions than explicit questions. On the post test, the student was able to answer two more questions without look backs for a total of eight. With look backs the student answered nine questions correctly

again. This student showed a two point increase in the number of questions answered without look backs from pretest to post-test.

On the pretest, student B answered three implicit questions without look backs and no explicit questions. With look backs, the student was able to answer four implicit questions and one explicit question for a total of five. On the post-test the student answered two explicit questions without look backs and four implicit for a total of six. With look backs, the student was able to answer four explicit question and four implicit questions for a total eight. This student showed an increase of two points in the number of explicit and a one point increase in implicit questions answered without look backs. With look backs, the student showed an increase of three points in the number of explicit questions correctly answered.

Student C, on the pretest, answered one explicit question without look backs and five implicit questions. With look backs the student was able to correctly answer all ten questions. On the post-test, the student answered four explicit questions and five implicit questions without look backs. With look backs, the student was again able to answer all ten questions correctly. This student showed a three point increase in the amount of explicit questions they were able to answer without look backs.

On the pretest Student D answered three explicit questions correctly without look backs and three implicit questions. With look back the student answered four explicit questions and five implicit. On the post-test, the student answered three explicit questions without look backs and four implicit questions. With look backs the student answer four explicit questions and five implicit questions. The only increase the student had was a one point increase in the amount of implicit questions they were able to answer without look backs.

Student E was not able to answer any questions correctly on the pretest with or without look backs. On the post-test the student was able to answer one implicit question correctly with look backs. Therefore, this student saw a one point increase on the amount of implicit questions they could answer with look backs.

On the pretest, student F was able to answer two explicit questions and three implicit questions correctly without look backs. With look backs, the student answered all ten questions correctly on the pretest. On the post-test the student correctly answered three explicit questions and five implicit questions without look backs. Again, given look backs, they were able to answer all ten questions correctly. This student showed an increase in the amount of questions they could answer without look back in both implicit with a two point increase and, explicit questions with a one point increase.

Student G was not able to answer any questions correctly on the pretest with or without look backs. On the post-test the student was able to answer one implicit question correctly with look backs. Therefore, this student saw a one point increase on the amount of implicit questions they could answer with look backs.

Student H, on the pretest, was able to answer one explicit question and four implicit questions correctly without look backs. When given look backs, the student was able to answer all ten questions correctly. On the post-test the student answered two explicit questions and four implicit questions without look backs. Again, the student answered all questions correctly with look backs. This student saw a one point increase in their ability to answer explicit questions without look backs from pretest to post-test.

Most students that were involved in this study saw an increase in the amount of question they were able to answer without look backs, specifically in answering questions without look

backs. In general, most students increased the number of questions they were able to answer without look backs by one point. While there was some increase in test scores, none of these increases were seen to be statistically significant. Therefore, while all students increased in at least one area, it cannot be determined that the vocabulary intervention was the direct cause of this increase.

Strengths and Limitations

The research study that was conducted, while it was unable to determine any statistically significant changes, had numerous strengths. First, the research was conducted within the normal classroom setting, with the student's regular teacher. This way they were comfortable with the environment in which they were being tested. Also, all the testing, pretest and post-test, was conducted by the same person. This means there was no inter-tester discrepancies in rating and scoring.

Beyond the teacher and the tester, there were other strengths of this research. First, the same test was used for the pretest and post-test. This allowed there to be no difference in background knowledge on the subject of the text to influence the student's comprehension level. Also, there was consistency in the strategy that was used to instruct the vocabulary. All students learned the exact same strategy, at the same time, from the same teacher. This allowed all the students to learn the exact same vocabulary as an intervention. Lastly, even if there were not statistically significant changes, the students in general, showed slight increases in their reading comprehension scores.

While there were many strengths to this study, it also had many limitations. The first drawback with the study was the amount of students that were studied. The school only had a small special education population and it would have been hard to test at a school where the

teacher did not work. If there had been more students studied there could have been more correlations between the reading scores and the vocabulary intervention. Another limitation in the study was the amount of time the intervention was given. The vocabulary instruction only occurred for two weeks. If there could have been a more in-depth intervention with more words, then reading scores could have increased more. Lastly, there was only one reading done with one reading test. If there had been more readings with different subjects, then there could have been multiple tests to see if the intervention worked. Due to these limitations, there should be further research conducted on the subject to determine if the intervention has merit.

Recommendations for further Research

The research conducted showed that while there was a general increase in reading comprehension scores, however none of these increases were statistically significant. In order to see if the intervention in were significant, the study should be conducted with a larger group of students for a longer period of time.

Beyond redoing the same study with more participants, there were other questions brought up by the research that should be further studied. In the study, there was a great difference in the students' ability to correctly answer implicit and explicit questions. Explicit questions are answers taken directly from the text, while implicit questions students have to draw conclusions from information presented in the text. In general students were able to answer many more implicit questions correctly. Furthermore, students answered many more implicit questions without having to look back in the text. There should be research into how students approach these questions differently and if there are any specific interventions that help students to better correctly answer explicit questions.

Research also needs to be conducted on the students' background knowledge and how it affects reading comprehension. In this study, if a student previously had a teacher that taught a great deal about WWI they would probably already know the answer to some of the comprehension questions. On the other hand, if a student had never studied WWI, then the time line of events might be confusing to them, causing them to struggle with reading comprehension and the questions asked. There needs to be a study done to determine if and how much affect background knowledge has on a student's reading comprehension level.

Another aspect to look at for further research was the overall timeline of the study. The students were given a pretest, and then had winter break and final exams were there was no vocabulary intervention. Therefore, they went a month after the initial testing before receiving the intervention. Then when the intervention was finished, students were given the post test the following week. More research needs to be conducted to determine if any of the results would be attributed to this lag of time. Also, research should be done to examine if the lag of time led to more accurate scores as the students would not remember the reading as well.

Lastly, there needs to be more research conducted on vocabulary instruction of academic words and reading comprehension in different subject areas. This study only looked at the content area of history. However, more research should be done to see if instruction of academic vocabulary would help comprehension levels in science or engineering reading as well.

Conclusion

The study conducted was done with a small group of students, over a short period of time, in only one subject area. In order to see if the intervention of direct instruction of vocabulary truly increased a student's reading comprehension, some aspect of the study need to be changed or reconsidered. While the research did not show that the intervention was

significant, there were some increases in overall reading comprehension scores specifically in the number of questions answered without look backs to the text. Overall, students were helped by this intervention and were able to gain knowledge of and strategies to learn academic level vocabulary.

Appendix A: QRI Reading Passage

World War I—Part 1

World War I, also known as the Great War, drew in not only the major powers of Europe, but those of America and Asia as well. Many economic and political factors caused the war. Newly industrialized nations competed with one another for trade and markets for their goods. Also, the urge for national power and independence from other nations came from old and new powers. When a new nation tried to increase its power by building a strong military, an older nation perceived the new nation as a threat to its power. Such tensions led to the division of Europe into two groups for security: one composed of Britain, France, and Russia, the other of Austria, Hungary, and Germany.

Although the factors discussed above caused the war, the final breaking point was a local conflict between Austria and Serbia, a tiny kingdom in southeastern Europe. Serbia, supported by Russia, wanted to unite with the Serbs living in the Austro-Hungarian Empire and create a Greater Serbia. Austria, supported by Germany, did not want Serbia cutting into its empire. The war officially started in August of 1914, after the assassination of the Austrian heir to the throne, who was visiting Sarajevo, near Serbia's border. The assassin was a young man with connections to the military intelligence branch of the Serbian government. Austria's attempt to punish Serbia drew Russia and its allies Britain and France into a war against Austria–Hungary and Germany. The map below illustrates the geographical location of the countries in Europe and surrounding regions in 1914.

The War Raged on Two Fronts

Germany hoped to defeat France by striking quickly through Belgium and, therefore, to minimize the danger of a two-front war. The highly trained German troops nearly reached Paris before the French stopped them. However, the Russians aided France by suddenly attacking Germany on its eastern front, and Germany sent troops from western Europe to face the attack. With the German forces diminished, the French were able to force the weakened Germans back. The war in the west became a stalemate with neither side able to achieve a victory. As a result, both sides sought new allies to help them gain victory, and the war became a world war as Japan, Italy, Portugal, Rumania, and other countries joined Britain, France, and Russia. Germany and Austria–Hungary drew in Bulgaria and the Ottoman Empire, which included Turkey.

On the eastern front Russia kept part of the German army busy. Although Russia fought valiantly, it had not been prepared for war and thus was unable to defeat the Germans. Russian defeats led to a revolution that toppled the tsar of Russia. In late 1917 the new leader of Russia, Lenin, offered to make peace with Germany. As part of the treaty agreement, Germany gained coal mines and oil fields from Russia, which gave Germany power to fuel its army. More important, it allowed the war to be fought on only one front—the western front.

The United States entered the war when Germany began attacking American ships that were taking supplies to Britain and France. U.S. President Woodrow Wilson warned the Germans to stop the attacks, and for a while they did. But they announced an unrestricted submarine warfare after the British blockade shut off supplies to Germany. The final event that caused the United States to join the Allies was the interception of a telegram from the German foreign secretary to Mexico asking Mexico to ally itself with Germany and help fight the United States. Germany promised Mexico financial aid and the recovery of Texas, New Mexico, and Arizona when the Allies were defeated.

Appendix B: QRI Reading Comprehension Test

Level: High School

Social Studies

Concept Questions:

What are some causes of wars?

_____

_____

_____ (3-2-1-0)

What were the causes of World War I?

_____

_____

_____ (3-2-1-0)

What does "interception" mean?

_____

_____

_____ (3-2-1-0)

What does "unrestricted" mean?

_____

_____

_____ (3-2-1-0)

Score: _____/12 = _____ %

_____ FAM _____ UNFAM

"World War I—Part 1"

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High School

High School

Level: High School

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On the eastern front Russia kept part of the German army busy. Although Russia fought valiantly, it had not been prepared for war and thus was unable to defeat the Germans. Russian defeats led to a revolution that toppled the tsar of Russia. In late 1917 the new leader of Russia, Lenin, offered to make peace with Germany. As part of the treaty agreement, Germany gained coal mines and oil fields from Russia, which gave Germany power to fuel its army. More important, it allowed the war to be fought on only one front—the western front.

The United States entered the war when Germany began attacking American ships that were taking supplies to Britain and France. U.S. President Woodrow Wilson warned the Germans to stop the attacks, and for a while they did. But they announced an unrestricted submarine warfare after the British blockade shut off supplies to Germany. The final event that caused the United States to join the Allies was the interception of a telegram from the German foreign secretary to Mexico asking Mexico to ally itself with Germany and help fight the United States. Germany promised Mexico financial aid and the recovery of Texas, New Mexico, and Arizona when the Allies were defeated. (607 words)

Retelling Scoring Sheet for "World War I—Part 1"

Main Idea

___ Many economic
___ and political factors
___ caused World War I.

Details

___ Nations competed
___ for trade
___ and markets
___ and power.
___ Such tensions led to two groups:
___ one composed of Britain,
___ France,
___ and Russia,
___ the other of Austria,
___ Hungary,
___ and Germany.

Level: High School

Main Idea

___ The breaking point was a conflict
___ between Austria and Serbia.

Details

___ The war officially started
___ after the assassination of the heir
___ to the Austrian throne.
___ Austria attempted
___ to punish Serbia
___ and drew Russia
___ and its allies
___ Britain
___ and France into a war
___ against Austria–Hungary
___ and Germany.

Main Idea

___ The war raged on two fronts.

Details

___ Germany hoped to defeat France
___ and almost reached Paris
___ before the French stopped them.
___ The Russians aided France
___ and attacked Germany
___ on the eastern front.
___ The war became a stalemate
___ with neither side achieving victory.
___ Russian defeats led to a revolution
___ that toppled the tsar.
___ Lenin offered to make peace
___ with Germany.
___ It allowed the war
___ to be fought on one front
___ the western front.

Main Idea

___ The United States entered the war

Details

___ when Germany began attacking
___ American ships
___ that were taking supplies
___ to Britain
___ and France.
___ The final event was the interception
___ of a telegram
___ from Germany
___ asking Mexico
___ to ally with Germany
___ and fight the United States
___ Germany promised Mexico
___ financial aid
___ and the recovery of Texas,
___ New Mexico,
___ and Arizona.

60 Ideas

Number of ideas recalled _____

Other ideas recalled, including summary statements and inferences:

Questions for "World War I—Part 1"

1. What is this passage mostly about?
   Implicit: how and why World War I started (If the student says only World War I, ask "What about World War I?")

2. What two types of factors caused the war?
   Explicit: economic and political (The reader should remember both of these.)

High School

Level: High School

3. How did the rise of new powers cause the War?
Implicit: when a new country tried to build its military, old countries perceived the new nation as a threat to their power

4. Name one set of countries in Europe and the surrounding regions that grouped together for security reasons in 1914.
Explicit: Britain, France, and Russia; *or* Austria, Hungary, and Germany (The reader should remember all three countries in one set.)

5. What event finally triggered the war?
Explicit: the assassination of the Austrian heir to the throne by a Serbian; *or* by a man with ties to the military intelligence branch of the Serbian government

6. Why do you think that Germany wanted to avoid fighting a war on two fronts?
Implicit: so its resources wouldn't be divided

7. How did the defeat of Russia on the eastern front help Germany?
Explicit: Germany gained oil fields and coal mines that gave fuel to its army; *or* it allowed the war to be fought on only one front so all their armies could be unified there

8. Why did Germany attack U.S. ships?
Implicit: because U.S. ships were taking supplies to Britain and France, who were part of the Allies

9. What final event caused the United States to join the Allies?
Explicit: the interception of a telegram from Germany to Mexico asking Mexico to ally itself with Germany and help fight the United States

10. Why might Mexico have wanted to join Germany?
Implicit: Mexico was promised financial aid from Germany; *or* it was promised it would get part of its original territory back—Texas, New Mexico, and Arizona

Without Look-Backs
Number Correct Explicit: ____
Number Correct Implicit: ____
Total: ____
____ Independent: 9–10 correct
____ Instructional: 7–8 correct
____ Frustration: 0–6 correct

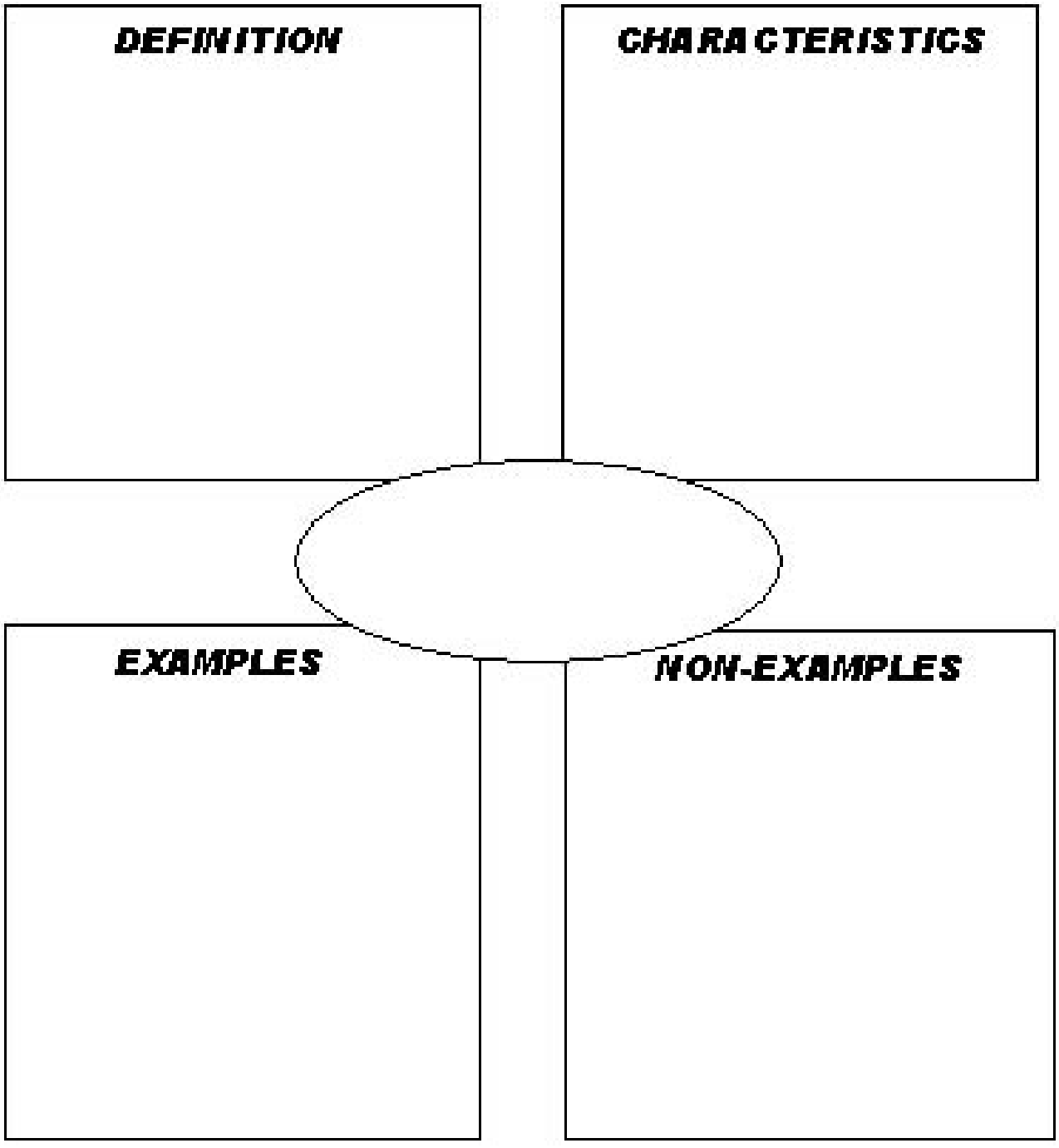
With Look-Backs
Number Correct Explicit: ____
Number Correct Implicit: ____
Total: ____
____ Independent: 9–10 correct
____ Instructional: 7–8 correct
____ Frustration: 0–6 correct

Rate: 607 × 60 = 36,420/____ seconds = ____ WPM

Appendix C: List of Vocabulary Words

1) Economic
2) Political
3) Compete
4) Perceive
5) Empire
6) Stalemate
7) Tsar
8) Unrestricted
9) Interception
10) Foreign

Appendix D: Frayer Model



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