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The keyword method: a study of vocabulary acquisition in fifth grade

Danielle Aureli

THE KEYWORD METHOD: A STUDY OF VOCABULARY ACQUISITION IN FIFTH GRADE

by

Danielle M. Aureli

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Dedication

I would like to dedicate this manuscript to my diligent fifth grade class of 2010-2011. Always aim high and shoot for the stars…you can do anything…the sky is the limit!

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Abstract

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Danielle M. Aureli

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S. Jay Kuder, Ed.D. Professor

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The purpose of this study was based on the need for fifth grade students (n = 18) to expand vocabulary acquisition in short and long term memory. The Keyword Method is a useful mnemonic aid which can help broaden students' vocabulary by means of speech and language and ultimately with reading and writing. Understanding vocabulary words and how they relate to other ideas and concepts greatly impacts and influences reading comprehension. Extensive research has proven the Keyword Method to be an effective teaching tool. It increases concreteness and meaningfulness of newly obtained information, and the Keyword Method connects recently learned information to prior knowledge which has already been stored. On the other hand, there are still limitations with using the Keyword Method. Data collection occurred over a period of twenty weeks for this group research design study. Quiz and test scores increased through the duration of this study. Students were also observed utilizing the Keyword Method mnemonic strategy throughout other subjects as a study tool. Implications for teaching vocabulary to students in the inclusion setting are discussed.

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Chapter 1

Introduction

As means of communication have evolved over the years, weaknesses many people have with expressing thoughts and ideas verbally may be exposed. One factor that may limit effective communication is the lack of an adequate vocabulary. The hectic schedules of a working class family have given a new meaning to fast food where dining with the family is an almost obsolete occurrence, limiting opportunities for communicative interaction. Technology and the high demand to be active and fit have also hurt the reduced opportunities for communication among families and friends. The widespread use of cell phones, text messaging, and email in general, along with advancements in social media platforms such as Facebook©, Myspace©, instant messaging, and blogging have made it acceptable and more convenient to hold an impersonal, abbreviated means of communication. A hearty vocabulary is important. It improves all areas of communication: listening, speaking, reading, and writing. Whether you are applying for a job or giving a speech at an event or function, the presentation to your audience through use of vocabulary accompanied by body language will aid in determining how successful you are received and perceived.

Vocabulary is the knowledge of words and word meanings. "Lehr in 2004 stated that words come in two forms: oral and print. Oral vocabulary includes those words that we recognize and use when listening and speaking. Print vocabulary includes those

words that we recognize and use in reading and writing. Second, word knowledge also comes in two forms, receptive and productive. Receptive vocabulary includes words that we recognize when we hear or see them. Productive vocabulary includes words that we use when we speak or write. Receptive vocabulary is typically larger than productive vocabulary because it may include many words to which we allocate some meaning, even if we don't know their full definitions and connotations or ever use them ourselves as we speak and write." (p. 5)

The many aspects of vocabulary often have teachers unsure of what exactly to teach first, so many of them initially refer to teaching reading and the basics of writing without placing much emphasis on vocabulary. Since vocabulary is the foundation for understanding print and writing in cohesive form, it should be taught first as an introduction to a story or writing component. If the students do not understand the words that they are reading or writing, then they will struggle with comprehension of the text. Reading comprehension may often be negatively impacted by a limited vocabulary. Teaching vocabulary word meanings from the text first will aid in retention while reading the actual text and seeing the print in the context of the story. The students may then be taught to make personal connections to remember the vocabulary.

One approach that has been found to be effective for teaching vocabulary is the use of mnemonics. A mnemonic is any learning technique that aids memory. Mnemonics are usually verbal, such as a very short poem or special word used to help

someone remember something like a name or a location. The Keyword Method is a versatile, mnemonic memory technique used to help with vocabulary learning by helping you associate two things together to form a memorable definition of key vocabulary words. Students may be able to use the Keyword Method for particularly difficult words. When tested immediately after learning the keyword, this new link will be fresh in their mind, and easily retrieved. However, as time goes on, and the advantage of recent retrieval is lost, what is left to make the new link stronger than the existing links? The answer is nothing, unless you strengthen the learned strategy by drill and repetition followed by frequent practice.

Many teachers, like myself, use drill and repetition to teach new vocabulary. Although we do refer to the new vocabulary often within the context of the lesson, it may not be enough for the students to make a memorable connection or relation to the word in order for long-term memory retrieval to occur. Perhaps if we all learned how to use a mnemonic method, such as the Keyword Method, students would develop a better grasp on vocabulary. The students' vocabulary may seem to flow if they have the right words to say at the right time. They would hold much more meaningful, memorable conversations if they expressed their thoughts through a more extensive vocabulary. The Keyword Method can sharpen not only students' minds, but teachers as well can learn and perhaps remember what always seems to be forgotten.

The question remains: will using the Keyword Method for vocabulary learning improve the recall of vocabulary words of fifth grade special education students? I want

my students to succeed and improve in all areas of language arts literacy by developing a robust vocabulary. I hope to find an entertaining way to help my students learn and retain new vocabulary throughout their educational career. I hope that by teaching this strategy, the students will learn to use it independently with other subjects as a study skill. I hope to find that the Keyword Method is successful in helping to aid in the retention of new and old vocabulary.

Research Question

Will using the Keyword Method for vocabulary learning improve the recall of vocabulary words of fifth grade special education students? Will the method lead to long-term retention of the learned, English vocabulary words?

Hypothesis

I believe that the Keyword Method strategy will help fifth grade students with special needs develop a stronger sense of vocabulary meaning. I also think that the Keyword Method will help the students develop a strategy to help with learning new vocabulary. Not only will it provide a useful study strategy for the students, but the Keyword Method will also aid with learning while linking vocabulary to the long-term memory.

Key Terms

- Keyword Method- A memory technique used to help one associate two things, such as an English word and a Chinese word, or a face with a name.
- Mnemonic- or Mnemonic Device- Any learning technique that aids in memorization. Commonly, mnemonics are verbal, such as a very short poem or a special word used to help a person remember something. It may be visual, kinesthetic or auditory.
- Long-Term Memory- A system for permanently storing, managing, and retrieving information for later use. Items of information stored as long-term memory may be available for a lifetime.
- Short-Term Memory- A system for temporarily storing and managing information required to carry out complex cognitive tasks such as learning, reasoning, and comprehension. Short-term memory is involved in the selection, initiation, and termination of information-processing functions such as encoding, storing, and retrieving data.

Implications

If the Keyword Method strategy is effective for long-term memory recall with previously learned vocabulary words, I believe that the students' motivation for learning will also increase. If the students make a connection while learning, then they will

eventually enjoy the learning process. No one enjoys fumbling over the right words to say. Communication is crucial in the world we live in today. Increasing your vocabulary allows you to use more descriptive words to better communicate your thoughts. Understanding the meaning of more words helps students to improve their understanding of information that they are reading or listening to, thus increasing their retention. By having a larger vocabulary, students' verbal communication will flow easily and may even assist in eliminating the fluency disruptions that communicate doubt, weaken messages and/or indicate a pause in thought such as 'um,' 'ah,' and 'uh.' Students who use a more extensive vocabulary will allow themselves to project a more intelligible image.

Summary

Language is the tool our minds use to think, plan, solve problems, and succeed. Having a better vocabulary improves your ability to think. Taking action and learning the words teachers give you is one way to increase your vocabulary. Many students struggle because they are not using strategies to help them learn. The Keyword Method may help students with special needs develop a more extensive, impressive vocabulary. Being able to communicate is very important in any career you choose. Once students learn this useful strategy, they will become motivated to learn and, perhaps, utilize it to their advantage throughout the various school subjects into adulthood. In this upcoming study, I will research how the Keyword Method for vocabulary learning will

improve the memory retention of vocabulary words among fifth grade special education students. I will also further study the long-term effectiveness of retention of the vocabulary words.

Chapter 2

The literature review will include five areas: (a) the importance of vocabulary development, (b) how vocabulary development affects the special education population, (c) interventions which enhance vocabulary, (d) the benefits of using the Keyword Method as an intervention strategy and (e) the limitations of using the Keyword Method as a study strategy. Individual studies targeting children with special needs are emphasized as well as secondary school and college studies that utilize the Keyword Method.

The Importance of Vocabulary Development

As inclusion settings become more popular, students with learning disabilities become increasingly challenged with learning and retaining material from the general education curriculum. Understanding vocabulary words and how they relate to other ideas and concepts greatly impacts and influences reading comprehension (Uberti, Scruggs, and Mastropieri, 2003). Students need a strong foundation for understanding how vocabulary can fit into the everyday reading environment. It is important for students to learn and understand word meanings and their connections to other ideas and concepts. As text itself becomes more difficult with vocabulary, complexity of sentence structure, and the density of ideas, the readers' abilities need to be sharpened for comprehension of the text to occur.

As Foil and Alber stated in 2002, children with learning disabilities often use short sentence structure with poor word pronunciations, and they have limited receptive and expressive overall vocabularies. Reading itself can greatly expand vocabulary. Since children with special needs often cannot or do not read independently, their vocabularies are often limited to what they experience in their immediate environment. In fact, this may start a vicious cycle of poor reading comprehension with poor vocabulary acquisition.

The strategy formula approach toward strengthening vocabulary development should be simple. Comprehension improves when the students know what the words mean. Vocabulary development should never be overestimated. Since words are the currency of communication, listening, speaking, reading, and writing are all affected equally by vocabulary development. Words are the tools we use to access our background knowledge, express ideas, and learn about new concepts. Students' word knowledge is strongly linked to academic success. Comprehension is far more than recognizing words and remembering their meanings. Comprehension is almost impossible if the reader does not know the meanings of a sufficient proportion of the words.

In spite of its obvious importance to academic success, vocabulary development has received little instructional attention in recent years. Finding ways to increase vocabulary development has become an educational priority. In fact, vocabulary could mean a number of definitions. There are several types of vocabulary development.

First, listening vocabulary consists of everything that we hear and understand. Second, speaking vocabulary contains all of the words that are used during everyday speech. Reading vocabulary is made up of all the words in print that are recognizable. This study concentrates on reading vocabulary and the understanding of incorporating new vocabulary into everyday use. Even though sight word vocabulary and decoding strategies are also important when learning and understanding new vocabulary, these features will not be the focus of this study.

In order to develop a strong command of vocabulary and improve listening and reading comprehension, students must be provided with instruction that facilitates linking new words to previous learning and background knowledge, provides a meaningful context for using new words, and also provides frequent practice opportunities (Foil and Alber, 2002). Since vocabulary knowledge is highly correlated with successful reading comprehension and has a strong relationship with decoding, it is important for a systematic vocabulary development program to be implemented at an early age (Spiegel, 1991). The program needs to be taught on a daily basis being a valued part of the curriculum in order to successfully improve a student's vocabulary learning. In order for students to reap the benefits of vocabulary instruction, the program needs to expand the number of words that children know well and the depth of their meanings for words they already know, it also needs to teach strategies by which children can expand their vocabularies on their own, and it also needs to get children interested in words so that they will notice new words and use strategies to identify their meanings.

A study by Dixie Lee Spiegel (1991) explored the various materials desired for vocabulary development. Spiegel determined that meanings should be thoroughly explored for an in-depth understanding of words' meanings and the ability to use the words with precision. Transfer potential for vocabulary is also important when determining materials for teaching. The desired goal would be for students to learn the meanings of targeted words well enough to be able to use them later. Another goal of vocabulary instruction would be for the students to expand upon the meanings of the vocabulary words on their own. Students should also be somewhat interested in the vocabulary for later use in everyday life. If a resource does not include thorough explanations of word meanings, then teachers must create these opportunities for students in order to ensure that words will be understood well enough to be used later. Vocabulary development resources that teach students ways to expand their vocabularies independently help promote transfer and later utilization. Spiegel believes that most vocabulary is not learned through direct instruction, but through incidental contact with words. It is important for students to know how to use context clues, structural analysis, dictionaries, and thesauruses in order to learn vocabulary on their own.

For vocabulary development to be successful, the actual transfer of vocabulary needs to be enhanced. Transfer of vocabulary will occur if students are intrigued by words and get excited about them. The reason why vocabulary development is so important is because is greatly impacts comprehension and unfortunately, many students pay little attention to new words when they encounter them and either skip

them or assign them a different meaning which may fit in context to later forget about them. In order for children to effectively learn vocabulary, they need to learn to notice words and to like words. For learners to actually gain a thorough understanding of words, the number of key words must not be overwhelming. As Spiegel stated, it is better for students to learn ten words than to be exposed to twenty words and develop only vague associated meanings. Multiple experiences with the same words are crucial for providing the reinforcement necessary to truly understand a word. Transfer of vocabulary will also be enhanced if periodic reviews of key words are practiced. This will reinforce the learner's ability to remember them.

How Vocabulary Development Affects the Special Education Population

Present day theorists suggest that most of the observed performance differences between students with learning disabilities and nondisabled students may be language based. Clearly there is a need for language learning strategies to serve the multiple deficit areas of students with learning disabilities. Mastropieri, Scruggs, and Fulk (2001), stated that students with learning disabilities need to first improve their store of verbal information. Second, students with learning disabilities need to be taught more efficient means of acquiring new verbal information.

Students with reading disabilities often have difficulty decoding unfamiliar words and reading words by analogy. They also have difficulty retaining the complete representations of words in memory to read by sight. Building links between precisely-learned visual and auditory-motor mental representations is important in decoding

words. If a student has difficulty with processing information, the links between the representations and the mental images of the picture meanings would get misconstrued, therefore negatively impacting the learning of sight words and other important vocabulary. Students having a concrete understanding of words directly affect sight word learning. In 1988, Broudy's study suggested that a loss in general literacy occurs as the potential for imagery decreases through a lack of understanding of the root meanings of words. He argued that the rich stores of imagery that contribute to English vocabulary form an 'illusionary base,' which is a mixture of sense perceptions, memories, and emotions held together by associations that serve symbolic functions in thought. This is also thought to be prior knowledge about a concept or topic.

Intermediate grade special education teachers face many challenges as they try to teach developmental reading skills and subject matter material. A study conducted by Palumbo and Loiacono (2009) concluded that intermediate grade special education teachers have to often deal with the increased vocabulary and the demands of teaching informational text as they handle the needs of students who have not yet mastered basic reading skills. They believe that increased attention to vocabulary growth and exposure to informational text in primary grades may eventually improve this problem when the children move on to intermediate and middle school grades. Teachers in the intermediate grades need more useful strategies to help foster reading skills, develop vocabulary, and teach subject matter comprehension.

Palumbo and Loiacono's research found that the percentage of American students who have difficulty with reading comprehension in fourth-grade and beyond remains high even though there has been a recent emphasis on comprehension research and teaching. Data from the National Assessment of Educational Progress (NAEP) show that from 1992 to 2005 approximately 30 percent of fourth grade students in the United States read at a proficient level or higher and approximately 36 percent of fourth-grade read below the basic students performing at or above basic level decreased from 80 percent in 1992 to 73 percent in 2005. Twelfth-grade students scoring at or above the proficient level declined from 40 percent to 35 percent. Nearly half of all 17-year old students read at or below a ninth-grade level making passing graduation requirements more difficult.

Research by Durkin (1978 and 1979) suggested that comprehension in grades three through six is often assessed but seldom taught. Fourth-grade teachers in Durkin's study spent less than one percent of their time teaching comprehension and more than 17 percent assessing it. More than twenty years after Durkin's study, Pressley (2001) noted little had changed. He observed considerably less comprehension instruction than comprehension assessment in classrooms. Another study by Shanahan (2007) noted that America has horrifying literacy statistics. Only 8% of African American boys can read proficiently at 8th grade, the lowest NAEP 12th grade scores in more than 15 years, terrible high school completion rates for Hispanic youth, and the lowest amount of self-selected reading among young adults, so we as educators should not be

afraid to challenge the status quo-since what we have been doing clearly is not working for the kids.

Palumbo and Loiacono (2009) believe that context, schema or prior knowledge, and vocabulary need to be interrelated to aid in comprehension especially when working with students with special needs. Vocabulary reinforces and supports comprehension by expanding the concept. Some students lack specific vocabulary knowledge, background knowledge, or an understanding of a subject's metaphors. A student being able to recognize most or all of the words within context or an informational text, may not guarantee comprehension of the material. Students do not necessarily understand the meaning of words they are able to pronounce, nor do students learn to comprehend complex text as they move through the grades. Pressley (2000) believes comprehension is a developmental, multi-componential process. In order to comprehend informational text, students need to be familiar with both the content of the material and also have a general and specific knowledge of the subject and its vocabulary. In addition to vocabulary instruction, teachers need to instruct students in the background knowledge of the subject they are reading. Students who are familiar with a subject learn new material in that subject more quickly than students who do not possess the same depth of knowledge and background understanding. Students who know more vocabulary meanings will also tend to understand the concept more, even if the background knowledge is not as strong. Researchers focusing on comprehension problems, especially on students who begin having comprehension

problems after primary education think many of these students lack sufficient subject-matter vocabulary and area knowledge to deal with the demands of expository text.

As Palumbo and Loiacono (2009) state, American students are diverse and begin school with different backgrounds. Some students will begin school with vocabulary knowledge of a few thousand words while others will know and understand vocabulary words two to three times more than that few thousand. Trying to compensate for these differences, beginning reading instruction uses narrative materials and a vocabulary basic to all students. Without informational text as a significant part of the primary grade curriculum, vocabulary becomes more difficult in later years. When social studies, science, and math begin to be factored more heavily into the curriculum around grade four, even some primary grades makes an impact on student learning. It is especially important to introduce vocabulary and informational text to special education students because these children will struggle to understand concepts and difficult vocabulary within the informational text. Since the majority of learning disabilities correlate with reading problems, special education students are especially negatively impacted. Teachers are urged to teach more vocabulary and introduce informational text in the primary grades and also to expose children to comprehension activities at the start of their academic careers.

In another study conducted in 2009, McClanahan pointed out that many inclusive classroom teachers often do not feel confident that they know or are using methods and strategies that researchers have shown to be effective in the general

education setting for students who struggle with grade-level reading regardless of whether the educators have identified them as a learning disabled. McClanahan stated that in a time of high-stakes testing and the No Child Left Behind Act (NCLB 2001), the ability of students who struggle to read with comprehension in content-area subjects has never been more important or more challenging. Researchers believe that the main reading problems students seem to encounter are; problems with decoding, poor metacognitive skills, failure to comprehend required reading material from lack of vocabulary, and an inability to apply comprehension strategies. Another problem could be poor-quality and too-difficult textbooks along with the fast pace at which teachers proceed through content. Since many special education students encounter these problems, they are not learning the required content, the students are failing to pass high-stakes tests, and the students are especially experiencing a low self-efficacy therefore presenting behavior problems in some cases.

Vocabulary words often create the first major obstacle to knowledge acquisition for all students, especially struggling readers. Researchers and educators have reported that quality is more important rather than quantity when enhancing instruction with a strategy. A good reading strategy should provide a review of material, scaffold and support subject matter learning, and engage students both contextually and semantically.

According to Palumbo and Loiacono (2009), teachers of intermediate grades usually have difficulty dealing with students who have different reading skills and ability

because the subject matter and comprehension only progressively get more difficult at this age level. Fourth grade students alone can have reading levels that range from grade one to grade seven. Primary grade teachers can differentiate text to meet individual needs. Teachers who teach higher grades have a more complex problem because they have to deal with subject matter instruction, developmental reading needs, and with students who have disabilities. Many of these students with special needs may not have yet acquired sufficient reading skills or vocabulary knowledge to handle informational text. Teachers can often differentiate instruction, but this differentiation must eventually lead to students' ability to read grade level material. Students may fall further behind grade level as subject demands created by specialized vocabulary and the conceptual nature of informational text combine to produce still more difficult text and material for students to deal with. If struggling readers do not receive help at an early age, they tend to remain poor readers throughout their school career.

Although some primary students require more instructional time, more vocabulary instruction, and more opportunities to use vocabulary knowledge in conversation, many are still at grade level or near grade level independent reading instruction. The students start to fall behind starting in the intermediate grades and in middle and high school. In conclusion, if educators start introducing subject matter concepts and subject matter vocabulary earlier than what is currently expected in order to increase vocabulary, students will have a stronger foundation in cognitive development. Palumbo and Loiacono (2009) believe that basic subject concepts learned

in the primary grades help students deal with enlarged, more sophisticated, but similar concepts presented in the intermediate grades. A curriculum works when a school dedicates itself to wide-ranging, developmental subject matter and literacy instruction. Primary teachers as well as intermediate teachers must meet the complex task of teaching reading skills, comprehension strategies, vocabulary, and the problems of subject matter text by using a variety of activities, supports, and scaffolds.

Interventions to Enhance Vocabulary

An extensive review of vocabulary instruction research which was conducted in 2003 by D. Bryant, Goodwin, B. Bryant, and Higgins explored four different vocabulary interventions: computer-assisted instruction (CAI), fluency-building vocabulary practice activities, mnemonic strategy, and concept enhancement instruction. This review was conducted to present implications for vocabulary instruction for students with learning disabilities. Since reading requirements for the content-are text are fast becoming more difficult at the secondary level, it was important to identify methods that effectively taught students with learning disabilities how to not only process, but to comprehend unknown word meanings. Dictionary usage, context clues, and semantic mapping were all observed and studied to find that there is no one best way to teach vocabulary. It is important to use a variety of techniques that include multiple experiences to the unknown word meanings.

For dictionary usage, struggling students may not benefit from using this method solely because of the complex nature of multiple dictionary definitions. This will also

affect a student's ability to comprehend and apply the word meaning in other contexts. Unlike dictionary usage, the Keyword Method strategy will provide an association memory connection which aids in remembering content-are vocabulary definitions. Context clues, another independent word learning strategy, may also be more of a challenge to struggling students rather than a helping strategy. Students must integrate different types of information from the text itself in order to figure out unknown vocabulary. Students need to know other definitions, examples, and synonyms within a given text. Studies suggest that definitional and contextual strategies should be combined in order for explicit instruction which includes modeling, multiple practice opportunities, and guided practice can be taught for the long-term enhancement of comprehension. Research findings have also shown that semantic mapping is beneficial for students to examine the relationships and association between concepts and for the students to develop a deeper understanding of word meanings.

The methodology for Bryant et al (2003) consisted of studies which were reviewed from 1978 to present. Participants were middle or high school aged students with an identified learning disability. The categories of vocabulary interventions chosen for this study include computer-assisted instruction (CAI), fluency building vocabulary practice activities, mnemonic strategy instruction, and concept enhancement instruction.

In the first part of this study, computer-assisted instruction was reviewed. Twenty-five students in grades 9-12 were matched according to pretest scores on

vocabulary achievement and then randomly assigned to one of two treatments used in a resource setting: the small teaching set (7 words) or the large teaching set (25 words), both conducted individually on computers. For the small teaching set, a list of unknown vocabulary words was identified and individualized for each student. The practice exercises consisted of multiple choice items such as, the word and its definition, the word in a sentence, and a word and its synonym. In order for a student to reach mastery, he or she needed to identify the word's meaning correctly four times in a row for two consecutive lessons. Students also had to identify ten mastered words on a cumulative review. For the large teaching set, two set of 25 words each were presented. Two word displays and multiple choice quizzes were similar to the small teaching set. Students had a choice of four formats which included, word display, multiple-choice quiz, sentence completion, or an arcade-type game. Students could play an arcade game when they reached mastery of 84% correct and could move on to a new activity after scoring 84% correct for two consecutive days. After meeting the criterion of two days at 84% correct, the students began the second list of 25 words, following the same sequence of activities. For this study, the same 50 words were taught in both conditions over a time period of 11 sessions which lasted for 20 minutes each. Results specified that given 11 instructional sessions, students with the small teaching set outperformed students in the large teaching set. However, on transfer measures, students scored poorly on both the small teaching set and the large teaching set.

As for fluency-building vocabulary practice activities, both studies used the same single-subject design where teachers introduced and explained the unit vocabulary and related concepts to the entire class. After the students independently studied the vocabulary for five to ten minutes, they were given three minutes to complete as many items as possible on a quiz. Throughout the two week duration of this study, students worked in pairs to practice the words and definitions for five to ten minutes. In the first study, 18 general and special education teachers who taught grades 6-12 in resource, language arts, science, social studies, and math classes participated. The typically achieving students totaling 236, improved as a group from a baseline mean accuracy score of 73% to an intervention score of 85%. More specifically, 69% improved, 11% stayed the same, and 19% worsened in vocabulary performance. The number of students with learning disabilities who received instruction in general education settings totaled 34 out of which 72% improved vocabulary acquisition, 8% stayed about the same, and 20% decreased in knowledge acquisition. Students with learning disabilities in resource rooms totaled 57 out of which 49% demonstrated an improvement, 23% remained the same, and 28% worsened in performance.

During the second study for fluency-building vocabulary practice activities, the same 18 teachers implemented an intervention which included 34 students with learning disabilities. Accuracy scores improved from 52% to 73% from baseline data to intervention conditions. The 248 typically achieving students also improved from 71% to 79% from baseline data to intervention situations. As far as improvement in performance, 64% of the typically achieving students improved, while 16% remained the

same, and 20% declined. Students with learning disabilities placed in a general education setting demonstrated scores such as an improved score by 70%, 10% stayed the same, and 20% decreased in performance. Students with learning disabilities placed in a resource setting, showed 80% improvement, 0% stayed the same, and 20% worsened in performance.

As Bryant et al (2003) further studied vocabulary instruction for students with learning disabilities; mnemonic strategy was also found to be beneficial for helping in recall and retention of information. The first study to be examined was conducted in 1985 by Mastropieri who conducted two experiments himself in order to properly study the effects of the Keyword Method or mnemonic strategy on students' ability to recall the definitions of 14 vocabulary words. In the first part of the experiment, 32 students with learning disabilities participated, in which students were randomly assigned to one of two conditions: mnemonic picture or direct instruction. For the mnemonic picture condition, the vocabulary words, key words, and definitions were written on the cards. The key words chosen for the cards sounded similar to the original vocabulary words themselves, which interacted with the definitions and pictures. In the direct instruction condition, only the vocabulary word and the definition were printed on each index card. At the end of the intervention, the vocabulary words were presented in no particular order on a quiz which required students to provide the definitions. Results showed that students in the mnemonic picture condition outperformed students in the direct instruction condition. In the second part of the experiment, investigators wanted to explore the effects of student-chosen images as a mnemonic condition compared to the

same direct instruction method conducted in the first part of this experiment. In this study, vocabulary words, key words, and definitions were again written on index cards. Students were then shown models of mnemonic interactive strategy pictures but were left on their own to think of original ideas for their own pictures to associate with the vocabulary words. Like the first part of this experiment, the mnemonic intervention strategy was more effective as reflected in the in the students' recall of vocabulary definitions than the other direct instruction method for learning the same vocabulary words.

Another study examined by Bryant et al (2003) was conducted by Condus, Marshall, and Miller in 1986 which further studied the Keyword Method mnemonic strategy as a means to improve not only vocabulary learning, but retention and transfer of the words as well. Sixty students with learning disabilities, 48 of which were male and 12 of which were female, were divided into two groups of high and low receptive vocabulary abilities depending on a Peabody Picture Vocabulary Test. These students were then randomly assigned to one of four conditions: keyword-image, picture context, sentence-experience context, and control. Fifty vocabulary words were selected from sixth and eighth grade vocabulary and then divided into five sets of ten words, with two remaining words for practice items. Seven resource teachers taught the sets of ten words throughout five weeks, instructing in 20 minute vocabulary lessons. During each week, three days of instruction were conducted in which students were introduced to the words and given twenty seconds to study the words. On the third day, students were shown the keyword image picture and asked to recall the

keyword and the picture. Several multiple choice tests were given: a posttest which was given weekly, a maintenance test which was given two weeks after, and a follow-up test which was given eight weeks after testing. Results showed that students in the Keyword Method condition scored significantly higher than those students who participated in other conditions. Students with high receptive vocabulary outperformed students with low receptive vocabularies across all conditions both during immediate and weekly testing. However, at the eight week follow-up testing, students with low receptive vocabulary abilities in the Keyword Method condition outperformed students with low and high receptive vocabulary abilities.

In a third study for the Keyword Method, Mastropieri, Scruggs, and Fulk (1990), examined the different effects the keyword method produces against a rehearsal condition. Twenty-five middle school students received one on one instruction in 16 minute experimental session in which two conditions (the keyword and rehearsal conditions) were presented. The presentation of the vocabulary words was the main difference between the two conditions. While examining the Keyword Method study, the vocabulary words, keywords, and definitions were presented on cards. The keywords were then shown interacting with their definitions. Pictures were not included for the rehearsal portion of the study. The instructor focused on drill, practice, and corrective feedback. Results showed that the keyword method facilitated recall and promoted generalization.

A fourth study examined by Bryant et al (2003) for understanding which vocabulary instruction works for students with disabilities was a study conducted on concept enhancement instruction. The study consisted of four conditions with a focus on learning and practicing definitions. This Bos and Anders study (1990) consisted of sixty-one junior high school students with learning disabilities (41 male students and 20 female students). These interventions occurred for eight 50 minute sessions over approximately seven weeks. Across each condition, students were given 10 minutes to study with their instructional aide and 20 minutes to complete a recall test. Vocabulary and comprehension were measured with the multiple choice test. Results revealed that students who participated in the interactive interventions outperformed students who received definition instruction on vocabulary and comprehension items.

As a result of examining four ways to learn vocabulary: computer assisted instruction, fluency-building vocabulary practice activities, mnemonic strategy instruction, and concept enhancement instruction, these interventions can be implemented prior to, during, and after reading to facilitate word-knowledge learning as well as reading comprehension. Throughout these four studies, students showed gains within a relatively short duration of instruction, showing that vocabulary instruction does not ultimately have to consume large amounts of class instructional time to show positive results. Several studies did show academic gains when mnemonic instruction was paired with direct instruction. Another study conducted by Wise, Sevcik, Morris, Lovett, and Wolf in 2007 consisted of 279 students in 2nd to 3rd grade who met research criteria for having a reading disability. Of the students who were tested, 108 were girls,

171 were boys, 135 were African, and 144 were Caucasian. These students were assessed in the areas of pre-reading skills: word identification, reading comprehension, and general oral language skills. The tests were given to see if phonology, semantics, and grammar may influence the development of different reading achievement skills. Some research does suggest that vocabulary knowledge is strongly related to pre-reading and word identification skills whereas listening comprehension skills are strongly related to reading comprehension skills. Also, prior research does suggest that if a study was conducted for children in first and second grades who are at various developmental levels, the test results would yield incorrect, misleading data, because it is not until the third grade that children begin to read for meaning as a result of pre-reading skills becoming more fluent.

Other theories which support vocabulary development as an important part of pre-reading skills would be the lexical restructuring model (LRM) by Metsala and Walley in 1998. They proposed that the speech stream is composed of small phonetic parts which grow from vocabulary development. This LRM theory allows children to recognize words at the syllable level and even at the level of the phoneme. It has also been speculated that vocabulary knowledge is important for word identification knowledge. Students with smaller vocabularies may struggle when reading because they do not have the phonological background knowledge. Children with deeper vocabulary knowledge should be able to access and retrieve faster and with more efficiency. Over time, inadequate pre-reading skills may lead to dyslexia.

The Benefits of Using the Keyword Method as an Intervention Strategy

The Keyword Method is a mnemonic strategy for elaborating upon an unfamiliar word or concept by making it more meaningful and concrete (Atkinson, 1975). Mnemonic devices such as the Keyword Method have been used for many centuries (Thompson, 1987). Today, the Keyword Method is one of the most extensively researched mnemonic strategies. It has been proven to be effective in improving both immediate and delayed recall. Levin (1988) described three steps for using the Keyword Method: recoding, relating, and retrieving. When recoding, the student changes the unfamiliar, new word to a similar sounding familiar word that is easily pictured. After the students have chosen keywords to help them remember the definitions, they should practice saying the vocabulary and keyword together in order to establish an association. In the second relating part of the Keyword Method, students increase the association by forming a visual image or drawing a picture in which the keyword and the meaning of the vocabulary word are interacting. Mental imagery provides a meaningful link between each mnemonic pegword or keyword and recall. In the third retrieving part of the Keyword Method strategy, students retrieve that appropriate response by thinking of the keyword, recalling the interactive picture and what is happening in the picture, and then by stating the information for the learned vocabulary word. The Keyword Method best works if the definitions, synonyms, and examples use language that is familiar and at a lower level of abstraction than the main words.

According to Mastropieri and Scruggs (1991), the Keyword Method is the most effective and adaptable mnemonic strategy. It is effective because it increases concreteness and meaningfulness of newly obtained information. It also connects the new information to prior knowledge. The Keyword Method enhances learning of both concrete and abstract vocabulary, as measured by tests of both recall and comprehension. The learner has a direct mnemonic route from the keyword interaction to the appropriate meanings of the words themselves. Mnemonic strategies such as the Keyword Method can positively affect students with emotional or behavioral disorders. The Keyword Method can boost students' confidence when they understand a concept or improve their vocabulary development.

Recent studies from Uberti, Scruggs, and Mastropieri in 2003 have shown that the Keyword Method helped students with special needs to outperform students without special needs. This study also found that the Keyword Method was effective in increasing the vocabulary learning of third-grade students in an inclusive classroom. It was also evident that without the essential 'keyword' to go along with the picture, the students with special needs did not score as well on a vocabulary assessment. The picture alone seemed to confuse the students even more because that would be the primary focus when taking the test, not the true definition connection. Another interesting occurrence was that the scores of the students who were only given a definition to study were significantly higher than those who just received a word, definition, and a picture. Students with disabilities remembered about twice as many words in the definition-only condition. Perhaps this proves that an added picture

without a keyword to reference confuses the students with disabilities. The whole point of a keyword is to recode the word, relate it back to the picture, and retrieve it from memory.

Another study conducted in 1996 by Avila and Sadoski suggest that the Keyword Method produced superior recall and comprehension both immediately and after one week. Sixty-three low-achieving, fifth grade, limited English proficient students learned the definitions of ten English words either by the Keyword Method or by direct translation and memory. Avila and Sadoski used thirteen English words (3 of them to be used as practice items) as the vocabulary which would be used in this experiment. For the Keyword Method part of the experiment, a practice booklet consisting of three pages with interactive pictures of the Spanish keywords, equivalents, and the English words. On the first day of this experiment, the teachers allowed the students to practice on the three practice items. The teachers emphasized the importance of remembering the interactive pictures. In the control group, the teachers presented the English word with the Spanish definition to the students who were required to remember the meaning on their own. One week later, the students were required to take a recall test or a sentence completion test. Overall, the students were able to remember more vocabulary words using the Keyword Method.

Research showed that children ages 6-8 needed an actual picture for the 'keyword' connection to occur. The teacher or instructor needed to provide them with the exact picture in order for the imagery link to remain in their memory. The children

were unable to come up with a meaningful picture on their own to associate to a keyword for later recall. This study suggested that young children seem to have difficulties generating interactive images for themselves. Avila and Sadoski also suggest that with increasing age, children can better apply imagery-based elaboration strategies. Younger children may need pictures in order to make mental connections for maximum effect. Other experimental results found by Merry in 1980 suggested that even eleven year olds are capable of using the Keyword Method.

Overall, the study conducted by Avila and Sadoski (1996) suggests that the use of the Keyword Method assists in the immediate recall of vocabulary. The students receiving instructions in the Keyword Method typically recall substantially more definitions soon after learning, compared to students assigned to use other strategies or study independently. Also, Avila and Sadoski's findings suggest that younger children can benefit most from the Keyword Method when pictures are provided for them. There is also much evidence that the Keyword Method produces benefits in immediate recall. Theoretically, imagery-based techniques such as the Keyword Method reduce forgetting over time as well. Students using the Keyword Method were able to recall approximately 25% more definitions immediately, and nearly three times as many definitions after one week.

A study conducted in 1983 by Pressley and Levin suggested that the manner in which the items for study as presented affected how effective the Keyword Method was in vocabulary acquisition. Eighty undergraduates enrolled in an introductory psychology

course at the University of Western Ontario participated in the two experiments. While the subjects were being tested, they were ether instructed to use the Keyword Method strategy or the no strategy instructions. In each experiment the manner of the presentation of the items varied from paced or unpaced conditions. Subjects in the paced conditions were shown each word on a card for approximately ten seconds. In the unpaced conditions, the subjects were provided a page with all items printed on it and were given four minutes which is an average of ten seconds per item to study the words. There was a significant difference when the pace of the learned Keyword Method vocabulary was controlled rather than individually pacing. Of course, if the study is controlled by the number of vocabulary words which are being studied along with the frequency, then the student is more likely to succeed. If the student is not given various opportunities for practice, then independent practice may not be sufficient. If children are properly taught study skills, then perhaps broader vocabulary acquisition may be reached. Children need frequent repetition of practice before they can see their own progress. After they practice a strategy such as the Keyword Method for a long duration in which they can see the benefits, they may then be able to utilize this skill accurately as well as independently.

In 1982, Pressley studied the usage of mnemonic strategies and elaboration techniques such as the Keyword Method to observe if children used these strategies with other applications and school topics. Pressley (1982) states that once grade level school children are taught to use elaborative strategies, they continue to use them if presented the same task later. It was rare to find if maintenance had not been

obtained. In this study, 10 to 11 year old children and 16 to 17 year old adolescents both special education and regular education were given two associative tasks: learning certain products produced in cities and Latin definitions. The subjects were either given the Keyword Method to learn the cities and products or a no strategy method. The subjects, who were given the Keyword Method to learn the cities and products, were also given some Latin definitions to learn with no instructions on which strategy to use. The younger children remembered more Latin definitions when they were prompted to use a similar strategy when they learned the cities and products. Pressley realized that younger school aged children needed to be prompted in order to remember to use a key strategy. After prompting, the children seemed to use the Keyword Method to their advantage. This, however, was not true for older students. The older students seemed to spontaneously use a strategy that worked best for them whether it was some variation of the Keyword Method or some other elaboration technique. Prompting tended to decrease with increasing age during adolescence. Overall, children could apply imagery mnemonic strategies such as the Keyword Method in more situations with increasing age between four years and eleven years of age.

When the Keyword Method was first introduced by Atkinson and Raugh in 1975, it was used as a method to easily learn foreign languages. In 1982, Jones and Hall researched a broader applicability for the Keyword Method. They believed that the English word being learned must be a concrete noun with no other obvious prior relation. Other concerns for their study were if the Keyword Method application was student-initiated and controlled rather than used primarily as a method of instruction.

Eighth grade students participated in this study. Jones and Hall found that the effectiveness of the technique at the secondary school level is not contingent on supplying the keywords for the students as with previous studies for younger children. This means that the method is far less dependent on specially prepared instructional materials like many had thought. The Keyword Method was successful for these eighth graders who in fact independently provided their own keywords and pictures and developed a strategy for studying new vocabulary.

Another study from Kleinheksel and Summy in 2003 suggests that you can also enhance social behavior along with student learning from using mnemonic strategies like the Keyword Method. Since mnemonic strategies would help in the retention of information, it would also boost not only academic performance, but confidence as well especially with the special education population. The Keyword Method can also be used for other subjects such as foreign language, science, history, geography, social studies, math, phonics, and spelling. Once the students know and understand how to use the Keyword Method and have had ample time for practice, they can use it for all subjects in which vocabulary poses a difficulty.

A more recent study conducted by Sadoski in 2005 found that in four experiments with a total of 428 students from grades three to eight, keyword instruction produced significantly superior results on tests of vocabulary usage in sentence and story comprehension. Using both verbal contexts and imagery in the direct learning of definitions may be a highly effective combination. Methods that use

visual displays of vocabulary relationships, such as the graphic organizer, tend to produce organized vocabulary learning better than methods that do not. Findings that support the connection between vocabulary instruction and reading comprehension identify multiple practice opportunities, in-depth word meaning knowledge, and active processing of information as important components of instruction. Deep word knowledge learning is accomplished by helping students to link new word meanings to prior knowledge, providing multiple practice opportunities to aid students' retention of the new vocabulary, and by engaging students in meaningful, memorable ways that require applications of word meanings across situations.

The Limitations of Using the Keyword Method as a Study Strategy

Students and teachers need to work together so students can obtain the maximum academic benefit from mnemonic strategies. The whole point of using mnemonics like the Keyword Method is to enhance the recall of information from any lesson for which memory is needed. If the keyword that the teacher has selected does not have a connection with the student's prior knowledge, then the student may have even more difficulty with remembering the definition of the term. The student may need the freedom to choose his or her own keywords when studying the vocabulary.

The students will not remember something that they did not pay attention to in the first place. Teachers should review what was taught and check for understanding. The Keyword Method is not going to instantly work and it may not be suitable for all students. Modeling the strategy is an important factor that will illustrate to the student

what it entails. If a teacher or instructor assumes that a child understands how to use the Keyword Method after modeling, it may lead to more confusion and doubt. Some students will need the strategy broken down into several small components, while others will see it modeled and will be able to use it immediately.

It is also important to evaluate the use of the Keyword Method. Evaluating is an important step in determining the effectiveness of any intervention. Data collection can help in determining whether the strategy was effective. It would also be beneficial to the student to share the intervention strategy data. The student can further determine which subjects the mnemonic strategy can be used for and how exactly it is affecting his or her progress.

A study conducted in 1987 by McDaniel and Pressley discussed long-term retention of vocabulary after using strategies such as the Keyword Method. Although the Keyword Method facilitated initial learning of the vocabulary meanings, there were no differences in long term retention. Their belief was that people, in general, spend more time reading than they do receiving direct instruction on new vocabulary. McDaniel and Pressley thought that the students would be able to adjust by immersing themselves in literature and figuring out essential word meanings independently from the text. As McDaniel and Pressley state in 1987, if learners are able to extract meanings of unfamiliar words from context, then the relative inefficiency of learning from context might be more than offset by the amount of time spent interacting with linguistic material. New vocabulary items would frequently be encountered enough

that their meanings would eventually be learned. Results from McDaniel and Pressley's study suggested that if people learn the definitions of vocabulary from context, the meanings will be retained as well as when vocabulary are learned with a mnemonic strategy such as the Keyword Method.

Another study conducted by Campos in 2003 consisted of 174 public secondary school students, 90 of which were girls and 84 were boys. The range of ages was 12-16. All subjects volunteered and did not study Latin nor knew the Keyword Method strategy. The subjects were instructed to remember as much as possible for the duration of the experiment. The participants were either assigned to the Keyword Method group or the control group. The participants in the control group received a booklet in which each page had one Latin word on it and its equivalent in Spanish. The participants were given 15 minutes to study the 30 words by rote recall. After the 15 minutes, they were handed a sheet with the Latin words written on it and asked to write all of the Spanish equivalents next to the matching Latin word. The participants in the Keyword group also received a similar booklet to the one the control group received, but instead of having just the Latin word and the Spanish equivalent, there was a keyword selected to have a similar sound to the Latin word. The findings of this study showed that the rote recall control group showed better recall than the keyword group. The Keyword Method is no more effective than other methods when the participants are allowed to pace themselves through the list and when the items are presented to groups of participants rather than individually. This finding was also true with adult participants. The recall was significantly better than the Keyword Method group.

Campos continued this study with two more experiments. The adolescent and adult participants in experiments 1 and 2 generated mental images which related the keyword to the target word. Participants in Experiment 3 consisted of 153 public secondary school students, 81 of which were girls and 72 were boys. The age range was 12-16. There was no difference in the immediate recall with the keyword method and the rote method. However, after one week, the keyword method was significantly less effective than the rote method. For experiment 4, Campos used 67 undergraduate students of psychology at the University of Santiago de Compostela, 41 of which were women and 26 were men. The age range was 19-24. Again, the results were similar to the adolescents in experiment 3. The control group showed better recall than the drawing group. The use of the Keyword Method clearly hindered recall which could be from the participants' lack of understanding how exactly the Keyword Method works. Having prior training in how the Keyword Method is supposed to work may have helped with the efficacy of the learned Latin words. Also, if a keyword and a picture are provided, it may not work the same because of varying prior knowledge backgrounds. Keywords may hinder rather than facilitate learning when a simple word is not used. Keywords may also confuse the person who may remember the keyword's definition rather than the target word's definition.

Conclusion

Vocabulary development is important in the development of language and comprehension. Vocabulary is the basis for learning and understanding material in primary as well as in secondary grades. Understanding vocabulary words and how they relate to other ideas and concepts greatly impacts and influences reading comprehension. Students with learning disabilities are already at a disadvantage because of processing difficulties with increasingly difficult text. Students with reading disabilities often have difficulty decoding unfamiliar words and reading words by analogy. They also have difficulty retaining the complete representations of words in memory to read by sight. In spite of its obvious importance to academic success, vocabulary development has received little instructional attention in recent years. Finding ways to increase vocabulary development has become an educational priority.

Fortunately there are some great teaching tools and methods for help with vocabulary acquisition and development for all learners even those with learning disabilities. Extensive research has been done on effective methods such as the Keyword Method. It has been proven to be effective in improving both immediate and delayed recall. The Keyword Method is the most effective and adaptable mnemonic strategy. It is effective because it increases concreteness and meaningfulness of newly obtained information. It also connects the new information to prior knowledge. The Keyword Method enhances learning of both concrete and abstract vocabulary, as measured by tests of both recall and comprehension. Deep word knowledge learning is

accomplished by helping students to link new word meanings to prior knowledge, providing multiple practice opportunities to aid students' retention of the new vocabulary, and by engaging students in meaningful, memorable ways that require applications of word meanings across situations.

Despite all of the research, there are still limitations of using the Keyword Method. The students will not remember something that they did not pay attention to in the first place. Teachers should review what was taught and check for understanding. The Keyword Method is not going to instantly work and it may not be suitable for all students. If a teacher or instructor assumes that a child understands how to use the Keyword Method after modeling, it may lead to more confusion and doubt. Some students will need the strategy broken down into several smaller components, while others will see it modeled and will be able to use it immediately. Students may also get confused with a teacher selected keyword and would rather choose a word he or she would most likely remember.

With everything we learn, we must keep trying until a certain study skill or method works. Everyone learns differently and may need assistance or various methods or mnemonics to reach a desired outcome. Vocabulary will always remain an integral part of reading comprehension, speech, and writing. One idea that seems to be obvious would be that dictionaries and context clues are a skill of the past and are least likely to work for the special education population. Students will learn when they remain engaged in the activity and create a connection with the text itself in order for a deeper

understanding to occur. Students can make great gains with language and vocabulary development when teachers work one step at a time and keep the work load manageable for meaningful learning.

Chapter 3

Research Methodology

Subjects

At the start of this study, there were twenty total fifth grade students. Two students have since moved leaving only eighteen to finish the duration of the study. All eighteen students participated in the Keyword Method study. There were eight female students and ten male students. These fifth grade students are all between the ages of 10 and 11 years old. Sixteen students are Caucasian race and two of the students are African-American race. Five out of the eighteen total students have an Individualized Education Program. Two male students are classified with having Other Health Impairments, one male has a classification of being Communicably Impaired, and two other students, one female and one male, who have a classification of having a Specific Learning Disability.

Three years ago when the students were in second grade, they took an IQ test. This IQ test, In-View CTB, was published by McGraw-Hill. In-View, which assesses cognitive ability in grades 2-12, consists of five subtests: Sequences, Analogies, Quantitative Reasoning, Verbal Reasoning-Words, and Verbal Reasoning-Context. In-View results can be used to reliably measure skills and abilities important for academic

success, help plan effective programs for students, and screen students for placement decisions into special programs. An average In-View IQ score is 100. The students participating in this study averaged a mean score of 92. The non-classified students had a mean IQ score of 95. The classified students had a mean IQ score of 82. The range for the eighteen students is 47. The range for the classified students is 16. The range for the non-classified students is 47. The median score is 93.5. (see Table 3.1)

One year ago, the students took the New Jersey Assessment of Skills and Knowledge (NJ ASK) test in fourth grade. Language Arts Literacy encompasses reading comprehension, vocabulary, and writing. Proficient students scored 200 or better on the Language Arts Literacy portion of the assessment. Partially proficient students scored below 200. Six students participating in the study had a proficient score. Twelve of the eighteen students scored below 200 on the Language Arts Literacy portion of the NJ ASK 4 in 2010. The students averaged a mean score of 190.6. The range for the students is 62. The median score is 192.5. Overall, the students scored well below average on the New Jersey Assessment of Skills and Knowledge in fourth grade.

Table 3.1 Demographic Data on Subject Sample

Fifth Grade Inclusion Class	**Non-Classified Students** **Total # of students 13**	**Classified Students** **Total # of students 5**
NJ ASK Scores (Mean)	191.1	191.3
NJ ASK Scores (Range)	62	55
IQ Scores (Mean)	94.5	82.3
IQ Scores (Range)	47	16
Age (Mean)	10.5	10.8
Race Caucasian	12/18	4/18
Race African American	1/18	1/18
Race Hispanic	0/18	0/18

Setting

This study was conducted in a middle class school district in southern New Jersey. The school district consists of six early childhood/elementary schools, a middle school, a high school, and a special needs school to meet the needs of over 4,400

students. The curriculum provides a solid program of general education with learning opportunities ranging from special services for special needs children to gifted and talented courses for enrichment.

The school is located in a suburban, middle class town. The racial makeup of the community is 83.44% Caucasian, 12.38% African American, 2.86% Hispanic or Latino, 0.21% Native American, 1.53% Asian, 0.03% Pacific Islander, 0.99% other races, and 1.41% from two or more races.

The setting for this study is a fifth grade inclusion classroom. Two teachers co-teach or team-teach the same eighteen students for the entire school day with the exception of special, lunch, and recess.

Materials

The materials used for this study were The Harcourt *Trophies* reading curriculum and Microsoft Word clip art along with pictures from the internet for the Keyword Method study sheets.

The Keyword Method was selected to assist the students in learning new vocabulary words. The Keyword Method is a versatile, mnemonic memory technique used to help with vocabulary learning by helping you associate two things together to

form a memorable definition of key vocabulary words. Students may be able to use the Keyword Method for particularly difficult words. When tested immediately after learning the keyword, this new link will be fresh in their mind, and easily retrieved.

The Keyword Method is a very effective memory system for memorizing English vocabulary definitions or even learning foreign languages. The way you use the Keyword Method is by combining the use of substitute words with visualization which is a two-step process. First, you convert the sound of the word into smaller, simpler concepts. Keywords can also be made using similar sounding words, words that rhyme, and even words that start with the same sound. After the keyword is determined, the students associate those concepts with an image representing the actual meaning of the word.

The Harcourt *Trophies* is a scientifically research-based reading program. The Harcourt Trophies reading curriculum focuses on phonemic awareness, phonics, read alouds, comprehension, vocabulary, oral fluency, as well as listening and speaking. Students will participate in various activities like rhyming; beginning, middle, and ending sound identification; and blending, adding, and deleting sounds in words to draw attention to the sounds in spoken language. Students will also be explicitly taught the process of blending individual sounds to read words. Teacher read alouds contribute to students' comprehension, vocabulary, fluency, literary understanding, understanding of academic and literary terms, and it fosters a love of literature. Students will be guided before, during, and after the reading in the use of strategies to monitor comprehension.

Students are exposed to a variety of texts and learn vocabulary strategies like using a story's context to determine a word's meaning. Students will develop greater fluency with high frequency words and terms. Students will also focus on listening to and retelling stories, singing songs, and speaking about experiences.

Procedure

The Keyword Method strategy was used in conjunction with the Harcourt Trophies reading curriculum vocabulary to help the students acquire new vocabulary words. Since the curriculum is taught on a six day cycle, the first and second days are used to introduce and practice vocabulary used throughout the story. The Keyword Method strategy was utilized by the teacher to enhance vocabulary acquisition. The teacher made up keywords to correlate with the vocabulary words from the story and added a picture to a study sheet. After the students were introduced to the new vocabulary and definitions from the Harcourt Trophies series, the teacher gave the Keyword Method strategy study sheet to the students which consisted of the vocabulary words, keywords, and pictures.

Every six days the students would read a different story and learn new vocabulary ranging from five to seven words. Since the first and second days were used to introduce and teach new vocabulary, the Keyword Method strategy was also used to enhance the students' vocabulary acquisition. Day one was primarily used to introduce vocabulary, read the new vocabulary in context, discuss and record parts of speech and

definitions, and to assign homework sentences. Day two was used for the Keyword Method strategy. After the students reviewed the newly learned vocabulary, they would receive a study sheet with the vocabulary word, keyword, and picture. The Keyword Method strategy was first explained as a way to remember the new vocabulary words. The 'keyword' was used to help jog memories for vocabulary word and definition retrieval.

At first, the students did not understand the Keyword Method strategy. The students wanted to study and learn on their own without the help from the 'keywords.' As time passed, the students began to understand the importance of the keyword and wanted to make their own keywords and pictures to match the new vocabulary for each story. The students also liked to draw their own pictures for each new vocabulary word. Overall, the Keyword Method strategy helped the students develop new ways to learn and remember the vocabulary words.

The research procedure is based on experimental research with a group design. The baseline data were taken before the students learn the Keyword Method strategy. The students read a total of five stories per theme unit. The first theme (five stories) was used to collect baseline data without the use of the Keyword Method strategy. The second and third theme (ten stories) was used to collect the Keyword Method strategy data. The fourth theme (five stories) was used to collect and observe the effectiveness of the Keyword Method strategy.

Chapter 4

Results

The Keyword Method strategy was used in conjunction with the Harcourt *Trophies* reading curriculum vocabulary to help the students acquire new vocabulary words. Baseline data was taken before the students learned the Keyword Method strategy. The students read a total of five stories per theme unit. The first theme (five stories) was used to collect baseline data without the use of the Keyword Method strategy. The second and third theme (ten stories) was used to collect the Keyword Method strategy data. The fourth theme (five stories) was used to collect and observe the effectiveness of the Keyword Method strategy.

Description of Data

The first part of this experiment was to collect baseline data. The students took five vocabulary quizzes which were averaged for a quiz grade. The students were also given a vocabulary test at the end of the first five vocabulary quizzes to test long term retention of the vocabulary. A drill and repetition way of teaching was used during collection of the baseline data. Most of the children did well on the short term vocabulary quizzes, but proved to be less successful when completing a cumulative

vocabulary test. Only two students scored a 100 on the cumulative long term retention vocabulary test.

The second part of this experiment was the first phase of the Keyword Method. The students took ten vocabulary quizzes which were averaged for a quiz grade. The students were also given two vocabulary tests at the end of the both five vocabulary quiz sections to test long term retention of the vocabulary. The Keyword Method was used as a teaching tool for the students during this phase. The teacher chose a keyword to connect to each vocabulary word as well as a picture to help aid memory retrieval. The teacher also printed a study sheet for each student to use as they were learning the vocabulary words. Most of the children did not perform as well on the short term vocabulary quizzes as compared to the baseline data collection. The students performed much better on the long term retention vocabulary test when compared to the baseline data. Five students scored a 100 on the cumulative long term retention vocabulary test.

The third part of this experiment was the second phase of the Keyword Method. The students took five vocabulary quizzes which were averaged for a quiz grade. The students were also given a vocabulary test at the end of the fourth round of five vocabulary quizzes to test long term retention of the vocabulary. The Keyword Method was used as a teaching tool for the students during this phase. The teacher allowed the children to choose a keyword to connect to each vocabulary word as well as a picture to help aid memory retrieval. The class decided as a whole which keyword as well as which

picture to use for the study sheet. Most of the children performed better on the short term vocabulary quizzes as compared to the first phase of the Keyword Method. The students performed much better on the long term retention vocabulary test when compared to the first phase of the Keyword Method. Seven total students scored a 100 on the cumulative long term retention vocabulary test.

Figure 4.1 Keyword Method Overall Quiz and Test Scores

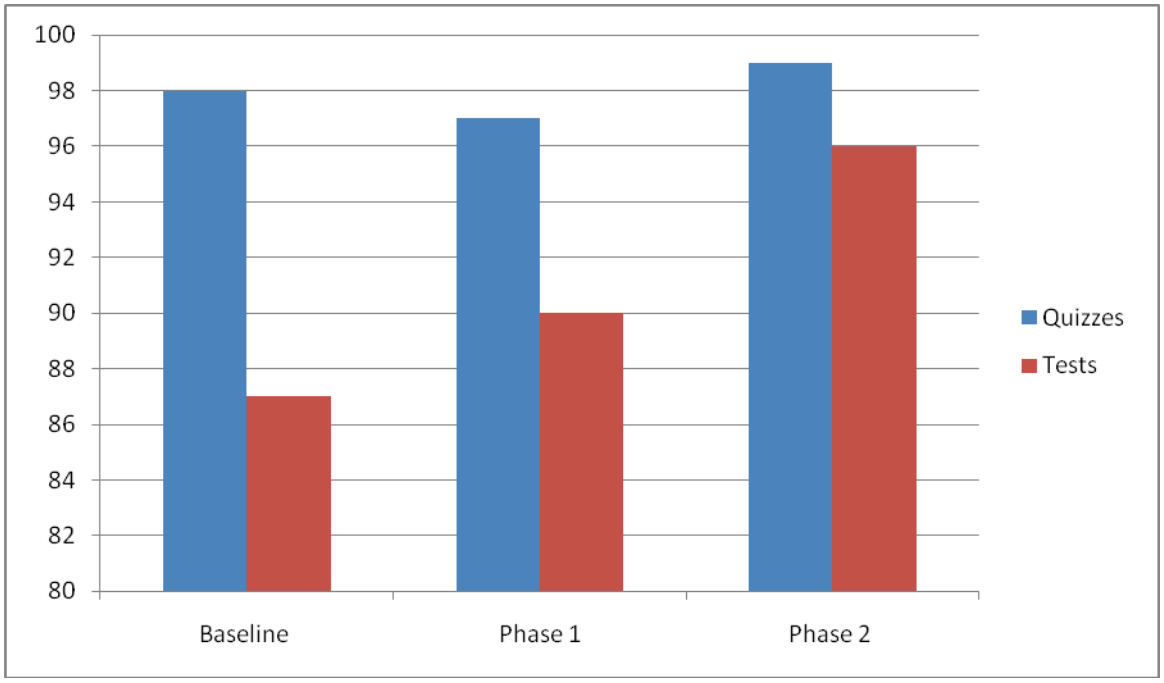

Figure 4.1 shows the quiz and test score averages for the eighteen students who participated in this study. Even though the students' quiz scores decreased from a 98 average for the baseline data to a 97 average during the first phase of the Keyword Method, the students' average quiz score increased to a 99 in the second phase of the Keyword Method. The students' test scores increased from an average of 87 during baseline data collection to a 90 average in the first phase, then to a 96 average in the second phase.

Figure 4.2 Keyword Method Quiz Grade Averages by Group

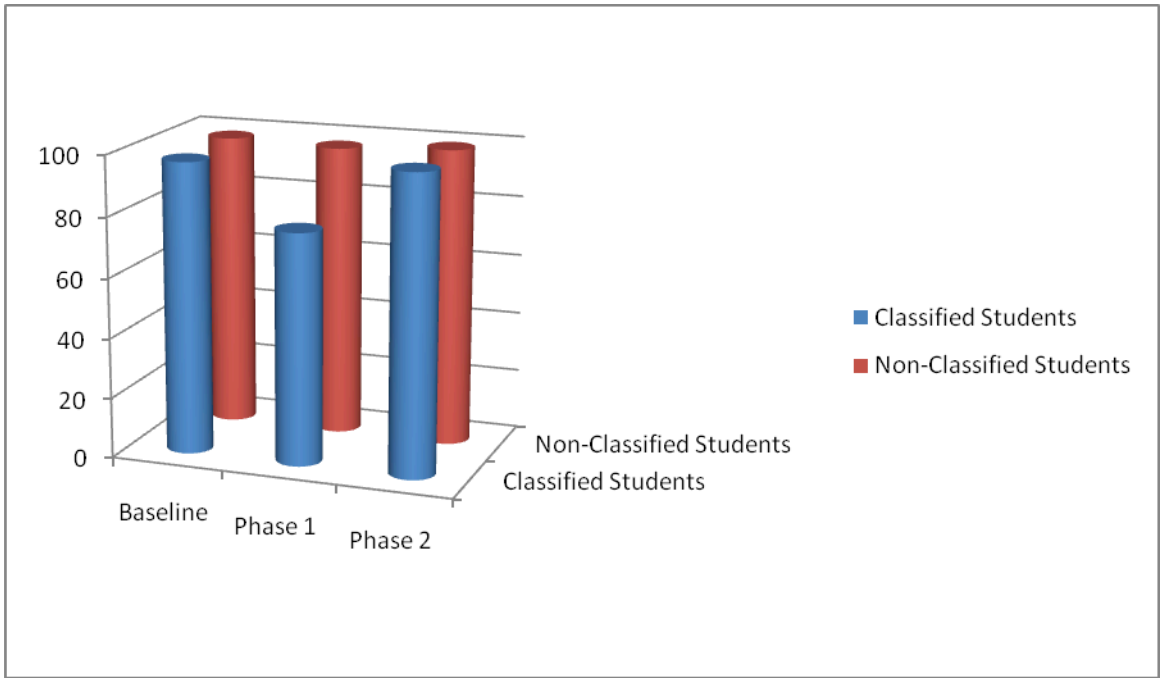

Figure 4.2 shows the quiz score averages for the eighteen students who participated in this study. Quiz scores are a reflection of the short-term memory of the learned vocabulary. The classified students shown in blue averaged a score of 97 for the baseline and the first phase of the Keyword Method. The classified students' quiz grade average increased to a 99 in the second phase of the Keyword Method. The non-classified students shown in red averaged a score of 98 for the baseline data and then decreased by a point scoring an average of 97 during the first phase of the Keyword Method. The non-classified students' quiz grade average increased to a 99 in the second phase of the Keyword Method.

Figure 4.3 Keyword Method Test Grade Averages by Group

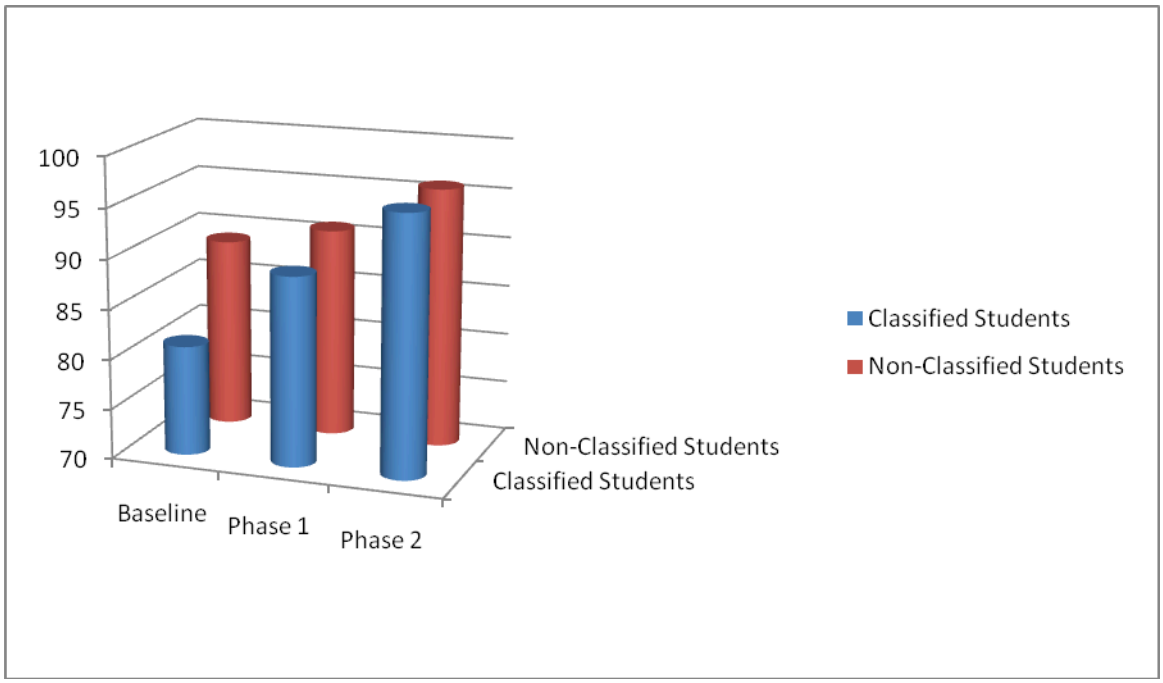

Figure 4.3 shows the test score averages for the eighteen students who participated in this study. Test scores are a reflection of the long-term memory of the learned vocabulary. The classified students shown in blue averaged a score of 81 for the baseline data collection period. For the first phase of the Keyword Method, the classified students scored an average of 89 on the vocabulary tests. The classified students' test grade average increased to a 96 in the second phase of the Keyword Method. The non-classified students shown in red averaged a score of 89 for the baseline data. For the first phase of the Keyword Method, the non-classified students scored an average of 97 on the vocabulary tests. The non-classified students' test grade average increased to a 96 in the second phase of the Keyword Method.

Chapter 5

Discussion

The research question for this study was: Will using the Keyword Method for vocabulary learning improve the recall of vocabulary words of fifth grade special education students? Will the method lead to long-term retention of the learned, English vocabulary words?

Baseline data was taken before the students learned the Keyword Method strategy. The students read a total of five stories per theme unit. The first theme (five stories) was used to collect baseline data without the use of the Keyword Method strategy. The second and third theme (ten stories) were used to collect the Keyword Method strategy data. The fourth theme (five stories) was used to collect and observe the effectiveness of the Keyword Method strategy.

While collecting the baseline data, the teacher used a drill and repetition way of teaching vocabulary. Most of the children did well on the short term vocabulary quizzes, but proved to be less successful when completing a cumulative vocabulary test. Only two students scored a 100 on the cumulative long term retention vocabulary test. When the first phase of using the Keyword Method was in place, most of the children did not perform as well on the short term vocabulary quizzes as compared to the baseline data collection. The children may have gotten confused with the teacher selected keyword and picture. Some students were still familiarizing themselves with the study method. Although the students performed much lower on the short term

memory vocabulary quizzes, the students performed much better on the long term retention vocabulary test when compared to the baseline data. Five students scored a 100 on the cumulative long term retention vocabulary test, which was a nice improvement from having only two students score a 100 when collecting the baseline data. As for the second phase where the students got the chance to select their own keyword and picture, most of the children performed better on the short term vocabulary quizzes as compared to the first phase of the Keyword Method. The students performed much better on the long term retention vocabulary test when compared to the first phase of the Keyword Method, as well. Seven total students scored a 100 on the cumulative long term retention vocabulary test, which is a great increase from the initial two students who scored a 100 when collecting the baseline data.

Overall, this study was successful for fifth graders acquiring new vocabulary and increasing the long-term retention rate of these particular vocabulary words. The overall success rate was increased by 5 students who all received a perfect score of a 100 in phase two of the experiment. One student went from a baseline test score of 45, to a 51 during phase 1, and by phase 2, this same student scored an 88. Another student went from a baseline test score of 74, to an 84 during phase 1, and by phase 2, this student scored a 100. Another successful student went from a baseline test score of a 71 to a 94 in the phase 2 part of this study.

The positive effects of the Keyword Method were reviewed earlier in chapter 2 with other studies. One particular study Bryant et al (2003) examined vocabulary instruction for students with learning disabilities. They found that a mnemonic strategy was beneficial for helping in recall and retention of information. A study in 1985 by Mastropieri on the effects of the Keyword Method or mnemonic strategy on students' ability to recall the definitions of 14 vocabulary words also found positive results. In the first part of the experiment, 32 students with learning disabilities participated, in which students were randomly assigned to one of two conditions: mnemonic picture or direct instruction. Results showed that students in the mnemonic picture condition outperformed students in the direct instruction condition. In the second part of the experiment, investigators wanted to explore the effects of student-chosen images as a mnemonic condition compared to the same direct instruction method conducted in the first part of this experiment. In this study, vocabulary words, key words, and definitions were again written on index cards. Students were then shown models of mnemonic interactive strategy pictures but were left on their own to think of original ideas for their own pictures to associate with the vocabulary words. Like the first part of this experiment, the mnemonic intervention strategy was more effective as reflected in the in the students' recall of vocabulary definitions than the other direct instruction method for learning the same vocabulary words.

This study is similar to the current study with the fifth grade students. The Keyword Method strategy was more effective as reflected in the students' recall of vocabulary definitions than the drill and repetition method for learning the same

vocabulary words. The short term memory as well as the long term memory increased with vocabulary recall as tested with the phase 1 and phase 2 of the experiment. The students scored better when they were able to choose a word and picture which better related to them rather than using a teacher selected keyword and picture.

Even though the Keyword Method was proven to be successful in increasing the long-term memory recall of the learned vocabulary words, it was confusing at the start of this study. Overall, the quiz grades decreased in the first phase of this study. Some students had difficulty connecting a different word to the initial vocabulary word which they were trying to learn. As observed, students would remember the 'keyword' and not the vocabulary word that they needed to remember for the quiz. The students scores also increased when they chose their own keyword and picture.

The Keyword Method strategy has many advantages as well as disadvantages. The Keyword Method is time consuming. It also may not work for all students. It practically took the whole school year to implement the Keyword Method in the classroom. Even though it was successful for the students and their long term retention of the vocabulary words overall, some teachers may not take the chance to implement a strategy all year for it to not work and bring success in the end.

As for students with disabilities, the Keyword Method proved to be confusing at first. Most of the short term quiz grades decreased as the teacher was implementing the first phase. Overall, children with disabilities increased the quality of their short term as well as long term memory at the completion of this study. The students began

to draw their own pictures to correlate to the vocabulary words. It was also observed across curriculum in science and social studies when learning new vocabulary words. The students seemed to enjoy drawing pictures and creating their own key words for the new vocabulary. The Keyword Method is a study skill strategy which can be used with any school subject when acquiring new vocabulary.

The Keyword Method strategy worked very well in my classroom with my students. The students increased their test averages by two letter grades, from an 81% C average to a 96% A average. Even though it took some time for the effectiveness to take its course within my classroom, I will definitely use this mnemonic strategy again in the future with my students. Once the students understood the helpfulness of the mnemonic aid, they seemed to enjoy thinking about keywords and pictures for each vocabulary list.

While first implementing the Keyword method strategy, the students struggled with connecting another word to the initial word. The students with special needs seemed to struggle more than the other fifth grade students. As time went on, the students started to understand why the Keyword Method could be helpful when learning new vocabulary words. Even though implementing the Keyword Method was time consuming, once it took its course, it was proven to be more effective than the drill and repetition practice for long term memory retrieval.

Another limitation of this study was the relatively small sample size of eighteen students. This study was only conducted in one classroom at one school.

The Keyword Method was successful especially for students with special needs and for long term memory retrieval. In possible future studies, another way to present the vocabulary on the quizzes and tests could be to completely scramble all words and definitions. It might have been more beneficial for the students to see each group of words and definitions together on the cumulative tests. It was also difficult to keep up with timing when teaching the Keyword Method strategy. Some other components of the strict, regimented curriculum had to be skipped in order to take the necessary time needed to complete teaching the Keyword Method strategy.

The students also drew pictures which became their own renditions of the teacher provided study sheet. Since this was something that most of them began to do on their own, I may introduce the activity earlier on in the future and have the students draw pictures to match the keywords for their own study sheet. The students seemed to better connect and remember the keywords when they illustrated their own versions.

Conclusion

The Keyword Method strategy has been proven to effective many times. Comprehension improves when the students know what the words mean. Vocabulary

development should never be overestimated. Since words are the currency of communication, listening, speaking, reading, and writing are all affected equally by vocabulary development. Words are the tools we use to access our background knowledge, express ideas, and learn about new concepts. Students' word knowledge is strongly linked to academic success. Comprehension is far more than recognizing words and remembering their meanings. Comprehension is almost impossible if the reader does not know the meanings of a sufficient proportion of the words. The Keyword Method strategy allows students to connect new vocabulary words with words that they already know and can easily remember. The students also choose pictures to connect with the new vocabulary. The Keyword Method strategy can be used as a study skill in any school subject.

The Keyword Method is a useful mnemonic aid which can help broaden students' vocabulary by means of speech and language and ultimately with reading and writing. Students can better discuss and write about school topics when they can easily remember curriculum vocabulary. As inclusion settings become more popular, students with learning disabilities become increasingly challenged with learning and retaining material from the general education curriculum. Understanding vocabulary words and how they relate to other ideas and concepts greatly impacts and influences reading comprehension. Extensive research has proven the Keyword Method to be an effective teaching tool. It increases concreteness and meaningfulness of newly obtained information and, the Keyword Method connects recently learned information to prior knowledge which has already been stored. On the other hand, there are still limitations

with using the Keyword Method. There is a chance that children may get confused while using the Keyword Method because each student learns in a different way and not all teaching tools may work the same. One student may be more confused when connecting a 'keyword' to a vocabulary word and accidentally recall the 'keyword' and forget the definition, while another student may remember easier when using a 'keyword' to jog his or her memory. Every student learns differently, especially when you are teaching special education. The Keyword Method was a successful strategy which I implemented as a study skill for my students. I can only hope that they take this teaching tool and use it to benefit their learning throughout their school careers.

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