

THE EFFECTS OF GUIDED READING AND WORD-MAPPING ON THE
VOCABULARY, COMPREHENSION, AND FLUENCY OF
STRUGGLING ADOLESCENT READERS

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ABSTRACT

Educational research has demonstrated that there is a correlation between struggling readers and poor vocabulary knowledge skills. In this quasi-experimental study 53 fifth and sixth grade struggling readers in a low socioeconomic suburban school district were assigned to one of three treatments designed to improve their knowledge of 30 high frequency words by:

1. a word mapping treatment in which students focused on the definition, synonyms, a sentence and drawing to illustrate the meaning of the targeted words
2. a guided reading treatment in which students were presented with four different reading passages and asked to focus on and define the targeted words
3. a control treatment in which the district-wide use of flashcard drill and practice was used to learn words from the high frequency list.

Students completed pre-tests and four week delayed post-tests after the treatment on each of five measures. Sentence construction was tested after the treatments were complete. Analysis of Covariance and correlated t-tests were done to investigate two questions:

1. Considering each treatment on its own, did word mapping, guided reading and control/flashcard treatments have a significant effect on vocabulary knowledge, comprehension, word recognition, fluency, sentence completion, and sentence production.
2. Were there significant differences among the word mapping, guided reading and control/flashcard treatment groups?

There were significant differences at the post-test among the three groups for word recognition and fluency.

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DEDICATION

I dedicate my work to the many people in my life. First, to my husband Ronnie, who always believed I could make a difference in the field of education, and allowed me the space and time to complete this project. I would like to thank my children, Brad and Bonnie, who have supported my efforts and were there to encourage me. An important influence in my life was my father, a self-educated man who taught me the value of education and reaching for higher goals, and my mother who stood behind me to reach them. Thank you to my friend Jonathan Vitriol, who without his support and perseverance, I would never have realized my abilities to take on my father's challenge. Finally, I would like to thank my students through the years who taught me not to give up on their ability to succeed when everyone expected their failure. Together we have made a difference, by allowing me to show them ways to learn to read, thus, fostering my love to teach for the students who want to learn.

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CHAPTER 1

INTRODUCTION

While I was teaching learning disabled ninth and tenth graders, I was told by several colleagues that if a student does not learn how to read by fifth grade, he will never become a proficient reader. Because of my observations and understandings of adolescents who found reading difficult, I could not accept this notion as the truth. I refused to give up on students who had suffered humiliation and lacked self esteem because they were labeled failures. As I looked for books and articles that could direct me towards new techniques for adolescent struggling readers, I found that researchers often turned their attention to improving reading skills for children in grades three and below, resulting in a lack of research with the young adolescents with whom I worked. Researchers had also turned their attention to improving reading skills for adult learners and those learning a second language (Tozcu & Coady, 2004). When the National Reading Panel (NRP, 2000) constructed its report, they found similar findings and called for more research guided towards this forgotten group.

At the Pennsylvania Summer Reading Conference of 2004, Dr. J. Torgesen called for educators to consider the way struggling adolescent readers learn. About this time, my focus on struggling readers began in earnest. There were sessions held to discuss the movement to teach these students with different pedagogical strategies from those used with young children (Dimino, 2004; Feldman, 2004; Marchand-Martella, 2004). For example, through remedial decoding programs such as the Wilson Language Program, SRA Corrective Reading and Rewards, struggling adolescents started to develop the appropriate skills to improve their ability to decode words. My direct experiences with

the Wilson Language Program proved to me that this forgotten group of students between fourth and twelfth grade levels had the ability to drastically improve reading rates and the ability to read grade level material. What features did these programs have that caused such radical changes? There had to be something different about the approach to reading that turned the light bulb on for the students time and time again. On the other hand, I also found an inconsistency in the reading skills they learned. Some students learned the decoding skills of these programs and brought word recognition and comprehension levels from second grade level up as high as tenth grade level. But others only improved their ability to decode words and still could not comprehend what they were reading. How could this be? After all, according to Chall (1975), comprehension would occur concurrently if a student could read the words of a passage. I began to think there had to be another vital component to reading besides decoding. It was around this time that there was a push by researchers and practitioners to improve a student's fluency. According to Feldman (2004) if a child could read fluently, he would be hearing the words as if he were talking them and, therefore, make meaning out of his reading.

The emphasis was put on improving fluency with the expectation that gains in comprehension would occur if fluency was achieved. However, in working with children it became apparent that improved fluency did not always improve a reader's comprehension. What was the missing link? I listened to the students. I asked them questions about the words they read and discovered that even though they could decode or recognize the words, they did not know what the words meant. I went to the Pennsylvania Summer Reading Conference of 2004 and 2005 and began to realize that

researchers were making the same connections. They were now recognizing the importance of another subcomponent of reading—vocabulary (Torgensen, 2004).

Vocabulary development is an important aspect of improving students' reading comprehension (Beck, McKeown & Kucan, 2002). Many adolescent struggling readers miss the opportunities to read vocabulary rich texts at the appropriate stages of development (Beck & McKeown, 2001). Because reading is often a mechanical activity for them, struggling readers do not add vocabulary to their repertoire at the same rate as non struggling readers do. Many below level readers also develop the vocabulary gap because they do not have the equal opportunities at home as their peers do (Purcell-Gates, 1998). They come from homes where academic language is spoken less often, and some of the vocabulary spoken at home isn't valued at school.

One traditional method to teach students to learn to read has been the use of word frequency lists. Thorndike (1921) was the first to establish literature to guide teachers on the teaching of such words. This area was not further developed until Dolch took an interest in it in the 1940's. Today, these lists have been compiled by several educators to determine a reading vocabulary students should recognize instantly because of their frequency in reading texts.

Throughout my years of teaching, I have observed the traditional method of teaching these words-- drill and practice, implemented using flash card drill, which results in the child reading or often guessing at the word. They are then corrected by the teacher, paraprofessional or parent working with them. Most young children are successful at learning the words in this manner (Nicholson, 1998; Nist & Johnson, 2008; Tan & Nicholson, 1997). Fry's Instant 1000 Words List, for instance, has been designed

to provide words children should learn from kindergarten through third grade (Fry, 2000). By observing fifth and sixth grade students in the elementary school continually working with these words, it is clear to me that not all students are able to learn a majority of the words by third grade. This group is usually found to be significantly below reading level with the reading gap increasing as they progress in school. The question arises whether their inability to learn the words comes from their recognition of the letter patterns or understanding of the words. For example, three common words found chunked together on the list are: though, through and thought. These words look very similar and yet have different meanings. According to Anderson & Pearson (1984) schema are abstract structures of knowledge that represent concepts and connections that are stored in one's memory. Through my experience, it appears that if new words are introduced with the meanings of each word, they will take on their own schema and, hence, make it easier for the reader to identify the word. Older students who have not mastered these words using conventional, traditional means of instruction, need opportunities to develop the vocabulary knowledge, hence there may be a need to change in the instructional methods presently used. If something has not worked or produced very slow progress by fifth grade, it is our responsibility, as educators, to find and offer the reader a new technique for learning such important words.

After many years of working with struggling readers, it has been my observation that starting from kindergarten and extending through twelfth grade, this population has not developed a word consciousness, the ability to play with and develop an interest in words. A lack of word consciousness (Graves, 2009) appears to hinder the students' motivation to examine words, visualize differences in words, and recognize words they

often encounter in reading in everyday speaking, through the media, on bulletin boards and their surrounding environment. This missing word consciousness also leaves them at a disadvantage when it comes to learning word meaning and multiple meanings of words. These students have limited receptive and expressive vocabulary.

In contrast, students who have a developed word consciousness can recognize words being used around them, words they have seen/heard before, as well as new words. They will often play with words whether it is in word games or mental activities as well as connect words to similar words or antonyms. Word consciousness plays an important role in building vocabulary knowledge (Graves, 2008; Marzano, 2004).

When working with struggling readers, those one to three years below expected grade level (NRP, 2000), it becomes apparent that unlike proficient readers they may learn to recognize words and build a large sight word vocabulary, but they are unaware of the meanings of the words and, therefore, cannot successfully comprehend what they have read. Since words on the frequency list are assumed to be encountered often, it is expected by many educators that I have worked with, that students will learn the meaning of the word through incidental encounters. For struggling readers, there are often too many unknown words in the reading passage for them to be able to infer meanings of words, whether they can decode the word or not. This population may be able to decode or recognize a word, but they are unaware of multiple meanings, again making comprehension unattainable. The vocabulary knowledge has been stunted by several factors: lack of ability to close the gap in instruction, lack of explicit vocabulary instruction (Joshi, 2005), lack of word consciousness (Graves, 2009), lack of vocabulary growth due to the home discourse (Purcell-Gates, 1998) and the assumption that students

can figure out the meaning of a word if they can say it (Chall, 1975). Many of these readers lack the ability to develop schema to make the word meaningful and retrievable. If students cannot connect the word “factories” to buildings where products are made, they will not have a stimulus to identify the word. If they do not know that “product” has multiple meanings, the sentence, “The factories produce the product that is sent to market” will not make sense because they read from the perspective that the word “product” is related to math (Anderson, 2004). For many years, teaching multiple meanings has been ignored and only the meaning that was needed for the immediate reading passage was emphasized (Beck, McKeown & Kucan, 2002). This may have met the needs of the word conscious students, but not the needs of the struggling students.

As it relates to vocabulary, word knowledge instruction can fit into two categories: implicit instruction and explicit instruction. Since the number of words students will encounter throughout their education is so vast, it is impossible to teach each word individually (Graves, 2009). Graves’ points out that many educators rely on implicit means for a majority of the words, expecting the student to learn the meaning from context clues, from verbal usage, and from vocabulary exercises. Again, this method works for this population; however, I suggest the struggling students need explicit instruction for numerous words (Graves, 2009; U.C. Manzo and Manzo, 2008; Marzano, 2004). They must be directed to the word and receive direct instruction for the word. They require having the word’s meaning given to them and they necessitate multiple exposures to the word for it to have an impact on their word knowledge (Seidenberg, 1982). Students must be given opportunities to use the word in different activities. They benefit from hearing the word as well as saying the word in order to

make the word part of their receptive vocabulary. This type of instruction is necessary for words students will encounter in content area reading and literature. The school district in which I work and conducted my study, has adopted an initiative to improve students' reading fluency through several approaches. One approach is the requirement for all students to master the Fry Instant 1000 Word list by third grade. If students fail to master the list by third grade, they continue working on it in fourth, fifth and sixth grade until they masters the list. Mastery is measured by the ability to read the word from the list without assistance. Pennsylvania Department of Education reading and writing standards are addressed during whole group classroom instruction and during the Response to Intervention (RTI) group instruction. Classroom (Core) instruction is whole group instruction with teacher directed differentiation for poorer students. The group practices skills, reading and independent assignments during this time. During the RTI "Power Hour" students are grouped according to need allowing struggling students to work in small groups for remediation and on/above reading level students work in larger groups to receive enrichment.

Recent literature defining fluency is not recognized in the District; students' fluency is recorded by counting the number of correct words read once a week (J. Scourfield personal communication, 2006, September). There is no accountability for the students to demonstrate knowledge of the word or prosody, which according to Deno and Martson (2006) and Rasinski (2003) is an important component of fluency. The district's philosophy relates back to Chall's (1975) belief that if children can read the word, they will understand the word. But is this enough?

The purpose of my study was to examine alternate methods of instruction for struggling fifth and sixth grade students to increase their word recognition and word knowledge of words on Dr. Fry's 1000 Instant Words List to ultimately increase fluency and comprehension. I contended that through implicit and explicit instruction of words on the list, the words would become recognizable and understood to these struggling adolescent students who had not been successful learning the words through traditional flash card drill methods regardless of consistent drill for five to six years of their education. The study would examine two different treatments, one explicit instructional approach and one implicit instructional approach, designed to help students develop schema for the words.

CHAPTER 2

LITERATURE REVIEW

The importance of vocabulary as a predictor of successful performance has long been established. *The Teacher's Word Book*, written by Edward Thorndike in 1921, was an early attempt at establishing the importance of researching the effect of vocabulary on reading. Thorndike researched the frequency of word occurrence and his efforts had a huge impact on instructional practices. Thorndike's sight word list became the standard directing the instruction of basic vocabulary for many years. Teachers used his word list as the cornerstone for teaching beginning readers the fundamental words of literature. With this list, words that were not easily decodable were taught by memorization, which allowed students to read beginning text.

In the 1940's, Edward W. Dolch researched the most commonly used words and developed the Dolch sight word list, which ultimately replaced the Thorndike word reference. Dolch's list consisted of 220 words used in literacy in the early grades. Educators began to use this inventory to teach basic word recognition to emergent readers so they could become successful and fluent. More recently, Dr. Edward Fry revisited the research of Dolch and developed a more comprehensive compilation of high frequency words for grades kindergarten through grade three in the 1990's. Fry's Instant 1000 Word List suggests 100 words to be taught by the end of kindergarten, 300 words to be learned by the end of first grade, and 1000 words to be learned by the end of third grade. Currently, both the Fry and Dolch's lists are widely used to develop a basic vocabulary and sight word list for beginning readers. My school district relies on Fry's Instant 1000 Word List to improve students' word recognition and fluency.

I designed my study with the purpose to examine which instructional approach of teaching high frequency words would improve word recognition, word knowledge, fluency and comprehension of struggling fifth and sixth grade students. The study examined the following hypotheses: 1) the word mapping treatment of the targeted Fry words will have a greater effect on fluency, word recognition and comprehension than the guided reading and flashcard approaches; and 2) the approaches that emphasize vocabulary knowledge (word mapping and guided reading) will have a greater effect than the approach which emphasized fluency (flashcards) on comprehension.

The study answers the following research questions:

Considering each treatment on its own:

- 1 Did word mapping, guided reading and control/flashcard treatments have a significant effect on vocabulary knowledge, word recognition, fluency and comprehension?
- 2 Were there significant differences among the word mapping, guided reading and control/flashcard treatment groups?

Model of Reading

As a way of framing this examination about instruction, I relied on the following view of reading. According to Anderson (2004) schema theory explains how the mind processes new words and helps the learner relate new words to concepts already connected to the word. Context clues embedded in texts are effective when a connection is made between the context and one of the reader's existing schemas. A schema is a mental conceptual representation of a word that is organized in such a way that the mind can make a connection between the word's meaning and a related concept. Schema

theory attempts to explain how the reader interacts with text to shape information and knowledge into categories and concepts (Seidenberg, 1982). Anderson (2004) states that both learning and remembering textual information are affected by schema. He lists six functions of schema that allows this to happen:

- 1 A schema provides ideational scaffolding for assimilating test information.
- 2 A schema facilitates selective allocation of attention.
- 3 A schema enables inferential elaboration.
- 4 A schema allows orderly searches of memory.
- 5 A schema facilitates editing and summarizing.
- 6 A schema permits inferential reconstruction. (pp 598-599)

These functions describe the value of schema theory for providing the reader comprehension of the text, but the theory is also applicable at a more basic level of word meaning.

When a reader encounters an unknown word, the mind tries to make a connection between the new word and other words or concepts that have already been organized into schematic categories. Context clues from the reading passage or background knowledge may be used to construct the image. The image is then associated with similar words to form connections and develop concepts that fit into similar categories. If the reader does not have enough background knowledge or information pertaining to the meaning of the word, comprehension of the text becomes difficult or impossible (Anderson, 2004; Marzano, 2004).

For this reason, Bransford (2004) and Saoski, Paivio and Goetz (1991) have suggested that schema theory does not always provide readers with the ability to

experience success when they do not have adequate background knowledge or the same schema for a concept as the writer. As such, they argue that other theories are more adequate to explain reading. They suggest that it is possible for the reader to read a text from a different perspective than the author has intended. According to Bransford (2004), the author could write about a young woman not wearing jewelry to the airport because the author relies on the schema that relates delays at the security gate due to the metal detectors. However, the reader may not have a schema about the metal detectors and, as a result, not understand the author's point that wearing jewelry might set off the detectors, leaving the reader without any way of making connections to the author's schema.

According to Seidenberg (1982) and others who refute schema theory, besides schema mismatches, an inability of many struggling readers to comprehend sentences or text can be due to a lack of ability to use strategies to interpret and process information. However, Anderson might suggest that struggling readers need to learn strategies to develop schema for unknown words, even if they are commonly used words that readers may be able to recognize in isolation but cannot be processed in text. It is through the development of connections of schema and context, that readers will improve their ability to read words with automaticity and comprehend meanings of the text.

My research focused on high frequency vocabulary words that are usually taken for granted as mastered early by the average third grade reader. Schema for these words is assumed to be held by readers. Since mastery of word knowledge of common words is taken for granted, but not validated in upper elementary grades, the study directs the adolescent struggling readers' attention to knowledge of these words, so the learning gap

can be closed. I like to assume, based on experience, that frequent review of already mastered skills will keep mastery fresh. Vocabulary instruction needs to allow the readers to learn and connect a schema to the word and then apply the word to reading and writing in order for knowledge and understanding of the new word to be retained.

Anderson (2004) also notes that cultural differences can have an effect on one's schema. This may account for some of the difficulty struggling students may have with the expected schema used for reading vocabulary. Some cultures put more of an emphasis on the way adults and children communicate. The discourse (Rogers, 2003) used may or may not provide the student with the opportunities they need to enter school with a strong reading vocabulary. Some cultures emphasize reading to children at an early age, developing schema that matches school literacy expectations while another culture emphasizes daily survival skills and does not provide the child with the experiences of being read to or listening to books on tape. The child then enters school having to learn new schema to be successful. While schema theory explains how words are learned and connected to prior knowledge and concepts, it is my experience of questioning and discussion of specific vocabulary that struggling adolescents do not always have the ability to develop schema without some prompting and explicit activities to make connections to already known concepts. This process should introduce a limited number of words at a time to allow for mastery and then be repeated with more words while giving repeated practice (Ransinski et. al, 1987) of already known words for continuous success and retention. Repetition and review of previously mastered words will help the struggling adolescent retain words that are often forgotten with time. Practice with word schema and the use of the words in reading passages will help the teacher to model to

struggling readers the importance and develop the abilities to apply schema in generalized word and reading experiences.

Since the ability to apply schema also involves a vast amount of words the readers encounter, offering students with vocabulary challenges additional vocabulary instruction is important to their success. In order to help them acquire new words, the way in which vocabulary knowledge is acquired and developed is an important aspect of the literature reviewed in the upcoming sections. Following a discussion of vocabulary, I then review the areas of word recognition, fluency and comprehension.

Vocabulary Knowledge Acquisition

Lehr, Osborn and Hiebert (2004) defines vocabulary as the knowledge of words and word meanings in both oral and print language in both productive (the ability to recall meaning of a word in speech and writing) and receptive (the ability to understand a word by listening to it or in writing) forms. Receptive vocabulary requires the ability to match a word to its meaning, which is essential for reading. Since vocabulary is linked to understanding word meanings, it is also linked to understanding and comprehending language, both in oral and print forms.

Children begin to develop language after birth. Adults talk to the children with the knowledge that they do not understand the meaning of the words. It is through incidental learning that the children first learn to attach meaning to words in a receptive language form, which then develops into productive language. Once children start learning language, their vocabulary develops at a quick rate (Hart & Risley, 2003).

The size of a child's vocabulary is also dependent on the child's learning experiences. Studies show a link between the socioeconomic status (SES) of a family

and the rate at which a child's vocabulary grows. Several studies have concluded that children who come from professional homes (high SES) are spoken to more often than children of low SES homes; thus, children from low SES homes often enter school with vocabulary gaps when compared to their counterparts (Beck, McKeown & Kucan, 2002; Hart & Risley, 2003; Marzano, 2004; Purcell-Gates, 1998).

In a similar manner, successful reading students implicitly derive meaning from what they have read through their ability to use different strategies to get meaning from new words, usually developing a receptive reading/listening vocabulary before they develop the productive written/spoken vocabulary. When the effect of reading comprehension of fourth graders on vocabulary breadth and depth of knowledge was investigated, Ouellette (2006) found that receptive vocabulary breadth and depth predicted reading comprehension while productive or expressive vocabulary breadth did not.

Upon entering first grade, an average child's receptive vocabulary is usually vast, knowing between 2,500 and 25,000 words, while a college student knows between 19,000 and 200,000 words. These figures vary according to different studies and the definition of "word" determines how words are counted (Beck & McKeown, 1996). The discrepancy in vocabulary size comes from the corpus that determined the word count. The dictionary and frequency lists are frequently accessed. The studies used a sampling of words to estimate the vocabulary size. Nagy and Anderson (1984) estimated vocabulary size by a systematic classification of word families based on morphologically related words. Some lists are based on whether the student should know the meaning of a word based on how it is derived, i.e. walk and walking may count as one word.

My experience teaching struggling readers has lead me to the conclusion that children who have a limited vocabulary in early grade levels continue to develop vocabulary gaps as they get older. This conclusion has been validated by research (Beck, McKeown & Kucan, 2002; Graves, 2008; Joshi, 2005; Marzano, 2004). Since receptive vocabulary is linked to comprehension success, it is logical that students with vocabulary gaps will also have comprehension gaps.

Before examining how vocabulary is acquired, it is important to understand how teaching the population of struggling adolescents, which includes special education students but excludes second language learners, vocabulary knowledge is different from teaching the on grade level elementary or high school reader.

The Importance of Vocabulary to Struggling Adolescent Readers

The struggling adolescent reader population consists of upper elementary and middle school students who have deficiencies in reading comprehension skills, basic word identification, automaticity, decoding, and fluency (Fletcher, Morris, & Lyons, 2003). According to Shywitz (2003), a disproportionate number of struggling readers have been labeled as learning disabled. For many years, due to federal regulations, struggling adolescent readers, in my school district, have only been eligible for reading support (past grade three) if they were labeled with a Special Education disability. This left many students struggling with no help in sight and, in fact, I have witnessed students mislabeled as SPED so assistance could be given to them. Mislabeled has started to change as a number of school districts have adopted the Response to Intervention model (RTI) which allows unqualified special education students to work with specialists to

improve their reading skills based on curriculum based testing and teacher observations (National Center on Response to Treatment, 2010).

Adolescents reading below grade level presented a separate challenge for educators and were often overlooked in the past. Instead of looking at the challenges, some educators have determined these students to be unreachable and have given up hope in improving their reading skills (Manset-Williamson & Nelson 2005). For this population, there are years of distrust and ineffective education that have to be overcome. Most often the students have built a shell of protection around themselves. Through years of teaching struggling readers at the elementary school level, I have found struggling readers around fifth grade often change their attitude from “hoping to learn to read” to believing learning to read is hopeless, when they come to realize their lack of success (McKenna, Kear & Ellsworth, 1995). In order to approach these students, teachers need to be aware of the vulnerability the students feel. They begin to feel hopeless or even worse, deny their failures by covering up their inadequacies and rejecting remedial help. It has been apparent to me that in my district, the fifth and sixth grade struggling adolescent is instructed using the same learning techniques to learn high frequency words and practice that were used in first and second grade. The use of flash cards or reading words from a list of words is often the only technique used to focus on high frequency words.

Cognitive Changes of Adolescents

What some educators of adolescents who have difficulty with reading have overlooked is the cognitive growth and changes these students undergo at this age. Piaget (Huitt, 2004) has demonstrated that adolescent students are no longer thinking only in

concrete terms, they are developing abstract thinking skills and can evaluate their progress in comparison to their peers. Adolescent students have increased capabilities and thinking skills that allow understanding and analyzing reading strategies differently than they did in lower grades. They can be taught to concentrate on needed skills and practice them in a logical manner so the problem can be overcome. Instruction focusing on the use of higher order thinking, such as abstract processing and student responsibility, will provide new experiences for the student interacting with the text.

Manset-Williamson and Nelson (2005) considered the change in cognitive thinking when they conducted their study on balanced reading instruction. In their study, they worked with 21 students between the ages of nine and 14. All the students were reading at least two years below level and had a reading fluency below 3.5. The study took place in a reading clinic where tutors were used to implement the treatment of comparing the effects of two balanced strategic reading treatments - a systematic and intensive reading approach (guided reading) and an approach that stressed a greater degree of explicitness, such as think alouds in comprehension strategies - to determine which lead to higher gains in reading comprehension. Their findings reflected significant gains with explicit direction. Using their findings as a basis for the effectiveness of guided reading and explicit direction, I hypothesized similar findings when explicit direction is applied to vocabulary instruction.

The research described herein, used a guided reading approach, which stresses an implicit approach to vocabulary knowledge, and a word mapping approach, which stresses an explicit approach to vocabulary knowledge, to determine which is more effective. It is important to note that the instruction took into consideration that the

students in the study have developed more mature abilities of using cognitive skills as well. My study used both concrete and abstract thinking skills to teach the students new strategies to think about vocabulary knowledge using guided discussions, inference strategies and enhancing and teaching them to become aware of their background knowledge.

The study by Manset-Williamson and Nelson (2005) examined comprehension skills, while my study examined the growth of vocabulary skills. Since there is a difference in the focus of skills being taught, an examination of how vocabulary is acquired is important to understanding new ways to instruct these students in vocabulary knowledge.

What Does It Mean to Know Vocabulary?

Vocabulary research largely follows two directions: 1) how vocabulary knowledge is acquired and developed; and 2) the effect that instructional methods have on reading outcomes (Beck, McKeown & Kucan, 2002). The focus of this study is on the second direction. The importance of how vocabulary knowledge and instruction could effect comprehension and fluency were two outcomes examined. Represented in two ways, vocabulary knowledge may be: how words are represented in one's memory and/or the extent of information one knows about words (Beck & McKeown, 1996).

Vocabulary knowledge can be gained through conversation, through incidental learning, background knowledge, or inference from context. It can also be intentionally taught through various instructional methods. Regardless of how it is acquired, vocabulary may be classified into different levels of knowledge. Beck and McKeown (1996) describe Dale's (1965) four stages of vocabulary knowledge as:

Stage 1: The child never saw it before (no prior knowledge of the word).

Stage 2: The child heard it, but does not know what it means (word awareness).

Stage 3: The child recognizes the word in context (receptive vocabulary).

Stage 4: The child has good knowledge of the word (productive vocabulary)

(pp791-792).

Receptive vocabulary knowledge as described in stage 3 allows students to apply their word knowledge skills to comprehend what they have read. Students in stage 1 or 2 of vocabulary knowledge lack the ability to recognize words in context and become mechanical readers; readers who have to process decoding and word meaning separately instead of using automatic word recognition. Hence, the reader cannot concentrate on and process text meaning automatically.

How the Grade Level Child Attains Vocabulary Knowledge

In order for a word to become part of children's vocabulary knowledge, they have to take ownership of the word. This means that in some manner the students must become aware of the word and somehow make the word meaningful to them. It is not enough for children to hear the word casually and hear the meaning of the word to achieve this ownership and consciousness of the word. It is through the development of awareness of the word and a conscious recognition of the word use in different environments or repetition of the word in different situations that this ownership begins (Marzano, 2004). For average children, this awareness/ownership of words begins naturally very early in life, but for some children, the awareness and ownership does not come naturally (Beck, McKeown and Kucan, 2002) and has to be developed through vocabulary skills taught in school. Unfortunately, the majority of these students are at a

great disadvantage when they reach school because unlike their peers, they have not had the rich environment to develop word awareness and consciousness at early ages (Beck & McKeown, 2001; Biemiller, 2003; Hart & Risely, 2003).

For average children, many words are learned through incidental learning, which is often a conscious effort on the part of the child's parents, family members and teachers to use language in a way that invites the child to ask and answer questions, through hearing and reading words that expand their vocabulary (Lehr, Osborn, & Hiebert, 2004). This, like reading, allows students to develop an understanding of the word through the context in which it is used. Students use clues from the surrounding text or environment or conversation to infer the meaning of the unknown words.

According to Beck, McKeown and Kucan (2002) and Joshi (2005) vocabulary instruction has to be rich and robust. That is, the vocabulary terms simply cannot be introduced and explained. They are also very strong in their belief that traditional dictionary definitions are inadequate to have an impact on the student's vocabulary knowledge. They find dictionary definitions to be too concise or too broad to fully explain the meaning of a word. According to these researchers, explicit instruction by the teacher to define a word in kid-friendly terms using everyday language and relate the word to other words is key to supporting a robust vocabulary program. They also find that interaction between the word and the student must take place through different activities in which the student relates or uses the word. Their goal is to get students to begin to recognize that words they are studying are used in everyday situations, news reports, conversations, advertisements, etc., thus developing the word consciousness.

Beck and McKeown (2001) find vocabulary development with young children can very often be enhanced by reading trade books and focusing on three to five words at a time. The teacher can guide a discussion of the word by asking questions about when the word is used, what the word relates to and asking students to use the word in sentences while using pictures as a clue. Reading the text several times will provide repetition of the words and help the students to share their concepts of the word. However, Beck's use of concrete objects, such as pictures to encourage direction and encourage discussion as a method of instruction is not always useful for older students because finding clues to the word meanings has to come from the context of the text in upper elementary text. This study tried to engage students in discussions of words, through higher levels questions since there are fewer concrete tools for students to use to find the contextual clues.

For older students, the words selected to be taught must be carefully thought out. Beck et al. (2001) argue that vocabulary selection should be categorized as Tier 1, 2 or 3 words and focused upon according to the criteria of each tier. Tier 3 words are those the student will need to understand the content of the text, such as *Celsius*. These words need to be recognized and connected to a schema but not learned to the same degree as Tier 1 or Tier 2 words. Tier 1 words are common words, usually used and known through everyday language. If students do not know these words, they need to be taught thoroughly so the students can draw upon the word when they come across it in reading or writing. Tier 2 words are not used as frequently as tier 1 words, but are used often enough that they will enhance the student's reading and writing skills. Ideally, these words connect to a schema and are available at least in a receptive vocabulary.

Beck et al. (2002) recommend that the teacher should determine the tier the words fall into according to need and not grade level. It is for this reason that some words are introduced by the teacher during explicit instruction for use in literature or content areas. This teaches the children to become aware of words and to develop a word consciousness that encourages children to listen for new words around them and play with words, developing strategies for understanding the meaning of the words (Graves, 2008).

How is Vocabulary Acquisition Different for the Struggling Reader?

Children with limited experiences with language, stage 1 and stage 2 levels of knowledge may not have enough strategies to learn words through incidental ways. They do not acquire vocabulary at the same rate as the on grade level child and develop a vocabulary gap. Many studies (Beck, McKeown & Kucan, 2002; Feldman, 2004; Hart & Riseley, 2003) indicate that children from low socioeconomic status (SES) homes are often at a disadvantage when they enter school with much lower vocabulary repertoire than their counterparts from higher SES homes. Purcell-Gates (1998) suggests this is often accounted for by the type of discourse used in the home. Her study takes an in depth look at the preparation and language experiences children from higher SES homes enter school with, which predisposes them to the academic discourse used in school, while low SES counterparts have to spend time trying to figure out this discourse.

Stanovich (1986) discusses the Matthew Effect to describe students who do not have a large vocabulary or effective vocabulary acquisition strategies. According to Stanovich (1986), these students are often readers who struggle with comprehension and have frustrating experiences with reading. As a result, they avoid reading and fall further

behind their peers resulting in a larger vocabulary gap - the students who are rich in vocabulary get richer and “the poor get poorer” (Stanovich, 1986, p. 382); thus, hindering the ability of older children to overcome reading problems that began to develop at an earlier age. This suggests that the average student learns new words through contextual clues, an implicit method of gathering meaning by putting the meaning of the text together and finding the meaning of the mystery word while reading. A struggling reader needs to depend on integrating different types of information to figure out unknown vocabulary (Beck & McKeown, 1996). Integrating information is a challenging process for the struggling reader. With more direct clues and information, delivered by explicit instruction to provide a model for thinking the clues through and arriving at the meaning of the word, Biemiller (2003) has shown that young students can make progress in closing the gap. The goal of this study is to demonstrate that struggling adolescents can begin to close the gap through direct instruction.

Why Word Knowledge is Important to Reading Mastery

Poor word knowledge and comprehension skills indicate a relationship between reading comprehension and the level of word knowledge: Texts with too many words at the lower stages of vocabulary knowledge result in less accessibility to understanding the context of the text (Beck, Perfetti, & McKeown, 1982; Rupley & Nicholas, 2005). There is also a relationship between word knowledge and fluency. If the reader does not recognize or comprehend the word, fluency will be slowed because sense cannot be made of the passage (Stanovich, 1986). The three components--vocabulary knowledge, fluency and comprehension-- are closely related to each other. Studies show the relationship between improved vocabulary knowledge and improved comprehension (Pressley, 2000),

as well as the relationship between improved fluency and comprehension (Applegate, Applegate & Modla, 2009).

Since the three components are related to each other, it appears that by improving the struggling readers' word knowledge skills, word recognition, fluency and comprehension will improve. In order to improve these skills, we have to reverse the Matthew Effect and give as many opportunities as possible to the reader to become familiar and automatic with these skills (Pressley, 2000; Stanovich, 1986). This cannot be accomplished by allowing students to "figure things out." The reader must be shown through repeated experiences what to do. Skills cannot be passed by because teachers assume that they have learned the skill. Struggling readers have a tendency to forget and not draw upon skills that have been previously learned. Instruction for these students needs to be repeated and recycled until completely mastered and students show automaticity with them.

Word Recognition

Word recognition or the stages of word knowledge (referred to earlier) allows readers to read a word and make automatic connections between the word and the meaning. If students can decode a word, but cannot connect it to a meaning they must be able to figure out the meaning from the context; otherwise, they will be unable to get true comprehension out of the passage (Anderson, 2004). I have seen many educators assume that children know the meaning of the word because they can decode it, often to be confused by the child's inability to comprehend what he has read (Applegate, Applegate & Modlas, 2009). If students are in stage 1 or 2 of word knowledge, the connection to the meaning is not made; therefore, the content of the text does not help them and full

comprehension is not attained. This is especially true when readers are reading a passage with too many stage 1 or 2 words, leaving the readers frustrated (Beck, McKeown & Kucan, 2002; Joshi, 2005; Rupley & Nicholas, 2005). In order to be successful, the traditional benchmark used by educators indicates that students should know at least 95% of the words above stage 2 to be able to use context clues and strategies. Since word recognition affects the ability to read words automatically, fluency is affected when children need to concentrate on reading mechanically deciphering or decoding words of a passage.

Fluency

For several years, the school district in which I am employed has pushed to improve reading fluency. In order to improve fluency, teachers were asked to engage in repeated readings and to work with students to master the Fry Instant 1000 Word List (J. Scourfield, personal communication, September, 2006). This decision was based on the belief that mastering word recognition of high frequency words would allow the students to improve their accuracy and reading rate. I share this belief; however, I theorize that once struggling readers have mastered the word recognition, they may not have mastered the meaning of the word. I also believe that struggling readers do not retain their knowledge of the word unless it is reviewed repeatedly.

Rasinski et.al (1987) reported that the reader's ability to read phrase-like text or to read in chunks was necessary for fluency. The development of natural use of phrasing is demonstrated using first, second and third graders in a study by Aulls (1977), which indicated that less successful readers did not develop the ability to phrase as quickly as successful readers. Fourth graders demonstrated consistent results when Kleinman,

(1979) studied the abilities of above and below grade level readers to effectively employ prosodic clues in reading. These studies suggest that students with reading difficulties are often unable to establish proper phrasing and intonation when reading to get true meaning from a text, which inhibits fluency.

Most struggling readers who aren't fluent fall into two categories, readers that read at a slower than expected reading rate and word callers. Word callers, students who are able to read just about any word put in front of them without knowing what the word means, are often overlooked as not having a reading problem even though they are unable to comprehend the passage they read. Their ability to rapidly read a passage deems them a successful reader without consideration of their lack of prosody and comprehension. The ability to improve students' word reading abilities and word knowledge results in improved fluency and comprehension. Fluency is particularly important for students with significant reading problems (Chard, 2002).

Reading fluency, the ability to recognize words accurately and rapidly (Nathan and Stanovich, 1991) is a key factor in students' ability to be successful readers. Higher level processing is a result of visual stimulation making contact with stored memory and codes. Inefficient fluency does not allow for the connections to be made because cognitive resources are being used to process the word. Yet, Deno and Martson (2006) takes the definition one step further and defines fluency as the ability to process text easily and recognize both words and meaning. This means that just reading words quickly is not enough for readers to get the meaning of what they have read.

What vocabulary means to “word callers.”

“Word callers” may be able to pronounce most words rapidly but cannot make a connection to their meanings. This results in poor comprehension skills since the word caller does not make meaning of the words that are being read. The ability to read words rapidly highlights an important and often overlooked aspect of reading fluency. In order for readers to make meaning of the text, they must be able to read the words quickly enough and also understand the meaning of the words (Rasinski, 2000).

Repeated exposure to words, when combined with knowing their meanings, will lead to semantic and orthography links, thus increasing reading speed (Berends, 2006). Increased fluency tends to make students think about the word meaning they are practicing. Whit (1993) found reading rate was influenced by comprehension of vocabulary words. Without the ability to interpret the written word based on the meaning of the word in the passage students have to read the word mechanically. Slow readers, on the other hand, are too busy deciphering the phonetic code of the word to be able to concentrate on the meaning of the word. Word callers are automatic with the mechanical reading of the word but are not aware of the meaning of the word.

When a reader is assessed, word callers are most likely to be able to recognize the word in isolation or context and automatically read the targeted words. Amazingly though, he will not be able to demonstrate knowledge of the correct word choice in a sentence closure test; thus, he is unable to identify the meaning of the word.

Comprehension

Comprehension, the ability for readers to understand and interact with a writer (NRP, 2000), is necessary for successful reading. The development of comprehension

has been shown to be dependent on the students' vocabulary knowledge and ability to read with fluency. Comprehension is achieved when words have meanings and are connected to each other to form textual meaning.

Applegate, Applegate and Modla (2009) view reading comprehension as a thoughtful response to the text that involves complex higher level thinking than most educators give it credit for. In their work, they studied about 100 children who were identified by their teachers and parents as strong, fluent readers. Upon their investigation, they found that one-third of those readers were unable to comprehend what they read. They attribute this to the emphasis of reading being placed on fluency—reading rate, accuracy and prosody. This contradicted the typical belief that fluency facilitates comprehension. However, the findings also revealed that there was a need to provide comprehension strategies to struggling readers.

In the work by Levy, Abello and Lysynchuk (2009), the relationship between fluency and comprehension was investigated from the standpoint of the importance of automatic processing from print to sound being required so readers could focus on the message comprehension. Labored fluency of word recognition inhibits sufficient higher order semantic and syntactic processing to correctly comprehend the message. They report that both repeated readings and practice with word recognition can help remedy the problem. However, the researchers also caution about the students' ability to generalize such practice to other material. Dowhower (1987) reports transfer benefits from repeated readings in a sequence of stories with targeted vocabulary words and comprehension skills. The guided reading treatment in my study will present a sequence of stories with targeted vocabulary for four sessions per group of words. This

presentation, according to Dowhower, should help improve comprehension generalization.

Pressley (2000) indicates the teaching of vocabulary knowledge; fluency and subject knowledge have important roles in improving struggling readers' comprehension skills by enhancing knowledge of schema and reinforcing vocabulary. In a study by Tan and Nicholson (1997), they demonstrated improved comprehension of poor readers through the use of word recognition practice with the explanation of the word meaning by embedding word meanings in repeated phrases.

The practice of word mapping in my study will help develop vocabulary knowledge and build schema for the targeted words. It will also allow students to practice decoding of the word so they can become automatic with high frequency words.

It is important to remember the triad of components of comprehension as essential areas that should be developed simultaneously in order to improve struggling readers' ability. Comprehension also has been linked to the development of vocabulary and fluency. It does not help comprehension if fluency is developed to a high level without developing the comprehension at the same time. Many educators express frustration because they have worked hard to get students to expected fluency levels only to find out that they do not comprehend what they have read (Applegate, Applegate & Modla, 2009). The same holds true for the development of vocabulary. Instruction of vocabulary in isolation is only effective for comprehension if it is linked to context. When teaching the struggling reader, every component has to be taught to a new level and coincide with instruction with the other components before moving on. In other words, if students are

two years behind in reading, they should be instructed in vocabulary, fluency and comprehension in small steps and then move on to a higher level.

Vocabulary Knowledge Instruction

Vocabulary instruction can be delivered in numerous methods. The NRP report (2000) categorizes the different methods into:

- 1 Explicit Instruction: Students are given definitions or other attributes of words to be learned.
- 2 Implicit Instruction: Students are exposed to words or given opportunities to do a great deal of reading.
- 3 Multimedia Methods: Vocabulary is taught by going beyond text to include other media such as graphic representations, hypertext, or American Sign Language that uses a haptic medium.
- 4 Capacity Method: Practice is emphasized to increase capacity through making reading automatic.
- 5 Association Methods: Learners are encouraged to draw connections between what they do know and words they encounter that they do not know. (p.4-3)

The NRP found a vast amount of research using different instructional methods, usually in lower elementary grades or upper secondary grades. Each category does not necessarily stand alone and often the categories overlap. A multimedia activity such as word mapping is also an explicit activity involving the planned and direct instruction of the word by the teacher. This overlapping was apparent in the treatments used in my study.

Traditional instruction: flashcard drill and practice. One of the most traditional methods of teaching word recognition is through flashcard drill and practice. Nist and Joseph (2008) researched the effectiveness and efficiency of flashcard drill with first graders to see the effect it has on word recognition, acquisition, maintained and generalization. Unlike my study, they were not examining the word knowledge growth of these students. Earlier studies by Nist and Joseph (2006) and Schmidgall and Joseph (2007), determined traditional drill and practice were very efficient methods for teaching word recognition and spelling skills. They found that for students to generalize words and be able to use them in sentences, teaching the words in isolation was effective. Word meanings were not taught and it was assumed that if the children recognized the word, they would know the meaning of the word.

Nist and Joseph (2006) checked word knowledge one day after the student received instruction with the word and defined maintenance as being able to retain the word five days after it was taught. With that in mind, they found the flashcard drill and practice to be effective with first graders. Through repetitive drill and practice of visualizing the new words, schema of the word's image can be developed. Hearing the word used in daily language experiences, it is expected to assist the students to organize the word in an already developed schema.

I report these findings because they do imply that traditional flashcard approach to drill and practice, as used in my district, is an effective method of teaching word recognition. However, it assumes that all students will also have the ability to determine the meaning of the word through incidental means.

Implicit instruction: An argument for guided reading. One traditional method of vocabulary instruction requires the use of the dictionary to find definitions and write the definitions out. Although this form of instruction appears to be an explicit method, it is often used implicitly, leaving the students to discover the word meaning on their own. Researchers are finding that this method is not as effective as previously thought. Beck et al (1996) discusses the problems that arises when students find the definitions and are unable to understand the meaning, often choosing the meaning that does not fit their purpose (Stahl, 1999). This format, in which definitions may be condensed to fit the space allowed by the publisher in the dictionary is also difficult for students to use appropriately (Beck, McKeown, & Kucan, 1991). They suggest the use of everyday language to present a definition to a student. One dictionary that is based on that approach is the *Collins Cobuild Learner's Dictionary* (Cobuild, 2003). The dictionary offers definitions using sentences with the definition embedded in it. An example might be, "The man wore his hat, a covering for the head, because it was cold." This linguistic representation of the definition is not the only way for a child to represent word meaning. Children might represent the word nonlinguistically through drawings. This allows the students to make a picture that has meaning to him/her while establishing a schema for the word (Graves, 2008; Marzano, 2004).

A definition is only one way a student can gather the meaning to new words. An implicit strategy of instruction, capacity methods and association methods that students often engage in is using context clues from the reading passage or conversation to infer the meaning of the word (Marzano, 2004). While proficient readers may be skilled at this, struggling readers often have difficulty with this task. Some researchers, Beck,

McKeown and Kucan (2002) and Swanborn and deGlopper (1999) question the effectiveness of using context clues to acquire vocabulary, suggesting the ability to do so often is reflected by the student's ability and grade level. However, context clues may be effective if the targeted word is presented in a phrase or sentence that reflects the meaning of the word. The student has the opportunity to see the word in use.

The practice of teaching students different strategies, semantic and contextual methods of learning new vocabulary words, provides students with tools to unlock meanings of new words they encounter. Training students to use inference strategies allows students to use context to understand meanings of words and gives them a significant advantage in reading comprehension (McGee & Johnson, 2003). It is also expected to help the students develop schema connections. Schema of the knowledge of words and their meanings means the readers should improve accuracy and fluency of word reading (Bryant, 2000).

One effective method of teaching reading strategies is the practice of the guided reading approach. During this approach, the teacher sets a specific purpose for reading based on a strategy that needs to be taught or practiced; the students then reads a passage with assistance from the teacher. After reading, the teacher facilitates a discussion based on the focus strategies presented before reading (Fountas and Pinnell, 1996).

Although this practice usually focuses on reading strategies, my study used the guided reading activities to focus on vocabulary knowledge. This offered students an opportunity to discover word meanings through context clues, while having the multiple opportunities to discuss and develop schema for high frequency words—words that may be familiar to the student in different forms, but may not be processed automatically.

Explicit instruction: an argument for word mapping. Vocabulary knowledge can be increased by multiple exposures to the word (Marzano, 2004). Multiple exposure can come from directed activities using the targeted word, repeated use of the word in text and speech, and word consciousness of hearing or seeing the word in context in the environment (home, school, community). Studies conducted to determine the number of exposures to make a word a stage 3 word, suggest a minimum of 4 exposures are needed (Marzano, 2004). These can be spread out during a short period of time (a week) and do not have to occur all at one time. Repeated exposures help to make the word familiar to the student and give them the ability to make a schema for the word.

A.V. Manzo and Manzo (2006) suggest the use of systematic vocabulary development of low-frequency words found in advanced schooling and literature because they have a higher frequency of occurrence on standardized tests. However, they also point to the need for readers to know high frequency words. They present their argument with the proficient reader, not taking into account the struggling reader who needs instruction in high frequency reading words. Educators trying to close the reading gap for struggling readers need to realize the importance of continued, ongoing systematic instruction of the high frequency words and the growing need for instruction of the low frequency words as readers moves to higher grades to be able to read in content areas until the readers are able to automatically decode and comprehend high frequency words. This is often overlooked in the planned instruction of struggling readers and the students are instructed only in the low frequency words before the true foundation of high frequency words is set.

Word mapping is an explicit method that allows students to interact with the word and its meaning, thus developing schemas. It is a valuable tool for students to learn to examine associations and relationships of word meanings (Mastropieri, Scruggs, Levin, Gaffney & McLoone, 1985). It is an opportunity for repeated exposure to the word and for students to take ownership of the word. Word mapping in sixth, seventh and eighth grade students found student involvement, integration and elaboration of word usage and prior knowledge increased and therefore increased their usage of words and often made it part of their productive vocabulary (Rosenbaum, 2001). The goal of this study is to improve receptive vocabulary with perhaps the added bonus of improving productive vocabulary.

Research suggests that word mapping allows struggling students all the components needed to make a word a stage 3 or stage 4 word. They will be provided with a systematic approach to studying the word, by developing a definition, by developing synonyms, by creating sentences to demonstrate the usage of the word and drawing a picture to help develop a mental image of the meaning of the word. In my study, they will also be tracing the word which makes this a multisensory activity that taps into the learning style of all learners. In general, the word map will represent a visual prompt for developing a schema for the word.

Conclusion

In its comprehensive report, The National Reading Panel (NRP, 2000) suggested the use of high frequency words to be taught to beginning readers in order to develop a basic, fluent reading vocabulary. The comprehensive study on the state of reading in the United States, written in 2000, examined the components of reading: word recognition,

fluency and comprehension, as well as what affects successful instruction. According to the NRP report (2000), there is a relationship between vocabulary and comprehension. Since the publication of the report, an overwhelming interest in this relationship has surfaced, which has been investigated by many researchers, with Beck, Perfetti & McKeown (1982), Marzano(2004), Fuchs, Fuchs & Maxwell (1988), Graves (2008), and Rasinski(2003) leading the way. Most of the work has occurred in the early elementary grades or upper secondary grades. Yet, there is still a need to fill the research gap as it relates to struggling adolescents, in order to develop new approaches for this group of readers, to understand the problems associated with teaching them, and to more deeply understand the relationship between vocabulary and comprehension.

CHAPTER 3

METHODS

Design

The study was designed to take place over an eleven week period; the first, fourth and eleventh weeks used for pre-, interim- and post-testing while weeks 2-7 would be used to introduce units of five new targeted words each week for a total of 30 words. Teacher-led activities would be part of each treatment for four days. On the fifth day of the fourth week, there would be interim testing of fluency, word knowledge and word recognition. The fifth day of the week for weeks 2, 3 and 5 would be used by the teacher to complete district assessments. However, due to many principals' and teachers' concerns of the burden and time that was allotted to district testing and the added time that would restrict instruction, I eliminated the interim testing. Due to many problems that arose during the study, the timeline of eleven weeks was completed over a period of 31 weeks and instead of requiring four lessons a week, the study developed in six units of four sessions for a total of 24 treatment sessions. This was due to many groups not being able to start during the expected period of September to October. The flu epidemic had a major effect on attendance and group starting dates; there were three blizzards when groups were finishing the treatments and/or were ready to begin post-testing, and changes in school schedules and the Pennsylvania State System Assessments (PSSA) contributed to these delays. Table 1 below reflects each school's actual testing and treatment schedule. The treatment schedule was intact for all groups with the exception of one school experiencing a two week delay between sessions 18 and 20 due to the postponement of "Power Hour," the differentiated support groups set up by the Response to Intervention

team to provide instructional support to small groups of students according to their needs, and the selected group time for the implementation of the treatments.

Table 1

Actual Testing and Treatment Schedule

	School A	School B	School C	School D	School E	School F
Pretest	10/5	10/5	10/12	12/1	11/9	12/1
Instruction began			10/19	12/7	12/1	12/7
Instruction completed			1/4	2/8-2/17	2/1	3/1
Post-testing	2/1	2/1	2/8	3/22	3/8	4/19
Comments						11/16-11/30 Half day conferences Thanksgiving break
				11/16-11/30 Half day conferences		12/7-1/4 Christmas programs and Winter Recess
	11/16-11/30 Half day conferences Thanksgiving break	11/16-11/30 Half day conferences Thanksgiving break	11/16-11/30 Half day conferences Thanksgiving break	11/16-11/30 Half day conferences Thanksgiving break	11/16-11/30 Half day conferences Thanksgiving break	1/18-2/5 No Power Hour groups
	12/7-1/4 Christmas programs and Winter Recess	12/7-1/4 Christmas programs and Winter Recess	12/7-1/4 Christmas programs and Winter Recess	12/7-1/4 Christmas programs and Winter Recess	12/7-1/4 Christmas programs and Winter Recess	2/10-2/16 Snow storm and Presidents' Day break
				2/10-2/16 Snow storm and Presidents' Day break		3/1-4/12 PSSA* preparation and PSSA exams

*PSSA-Pennsylvania State System Assessment

Participants

The sample was comprised of fifth and sixth grade struggling readers. It was a sample of convenience. The sampling contained 54 participants; one participant moved out of the district after the first week of pre-testing, leaving 53 participants. The sampling was preselected by each school's identification of RTI intensive grouping and the response of schools and teachers willing to participate in the study. The division of the treatment group was as follows: the Control Group was comprised of participants from two schools with four sixth graders and four fifth graders from one school and two sixth graders and six fifth graders from the second school; the Word Mapping Group was comprised of participants from one school with ten sixth graders and seven fifth graders; finally, the Guided Reading Group was comprised of participants from three schools with five fifth graders from one school; four fifth graders and six sixth graders from the second school; and five fifth graders from the third school. Groups did include General and Special Education students from general education classes. There were no English as Second Language (ESL) participants in the groups.

The schools are in a suburban school district outside of Philadelphia, Pennsylvania. The population is low-middle socioeconomic status (SES).(See Table 2 for demographics per school.) Some schools have a history of not making annual yearly progress (AYP) on the PSSA statewide assessment test.

The treatment groups were taught by certified special education teachers, with the exception of one guided reading group that was taught by a special education teaching assistant. One guided reading group was split half way through the treatment by the RTI

team group review and was taught by a special education teacher that began the treatment and me (also a Sp. Ed. teacher).

Table 2

Demographics by School

Treatment/School	Enrollment by Race		Free, and Reduced Lunch	
Control Group				
School A	Black	21.74%	Free	47.22%
	Hispanic	9.29%	Reduced	10.52%
	White	67.00%		
School B	Black	6.96%	Free	30.23%
	Hispanic	6.67%	Reduced	11.86%
	White	85.22%		
Word Mapping				
School C	Black	14.69%	Free	40.44%
	Hispanic	11.22%	Reduced	12.07%
	White	66.94%		
Guided Reading				
School D	Black	14.69%	Free	34.63%
	Hispanic	9.06%	Reduced	6.47%
	White	68.93%		
School E	Black	30.40%	Free	52.74%
	Hispanic	15.83%	Reduced	12.90%
	White	50.25%		
School F	Black	30.95%	Free	48.24%
	Hispanic	10.42%	Reduced	13.53%
	White	55.06%		

Treatments

As my review of related research makes clear, the two fundamental methods of vocabulary instruction are incidental learning and explicit/direct instruction. Each of my treatments represents one of these approaches. Guided reading of passages that include target words is one method of fostering incidental learning, whereas word mapping is an explicit method of instruction. The guided reading treatment required the students to use context clues and prior knowledge to discover the meanings of the targeted words

through repeated exposures, while word mapping provided explicit instruction in which the students experienced activities are designed to directly teach them meaning and usage of the word through repeated exposures.

The first treatment was a mini guided reading lesson with the focus on the meanings of the targeted words. The teacher introduced the targeted words by reading them out loud while the participants were directed to look at the word. The participants read the passage along with teacher assistance and then read the passage out loud without the teacher assistance. If the teacher determined that the participants were having too much difficulty reading the passage without teacher assistance, the teacher read the passage out loud and then had the group read it with assistance. When the readings were complete, the teacher asked questions about the focal word meanings. This process continued until the allotted ten minute session was complete.

There were four different passages written for each group of targeted words. There was a different passage read each day. This gave me the opportunity to introduce multiple meanings of the targeted words and allowed the participants to use context clue strategies each day.

Guided reading has demonstrated effectiveness for developing skills and fluency (Rasinski, 2003) through teacher direction and questioning. This approach allows the teacher to talk participants through learning new strategies and helps to develop comprehension. In this study, the teacher only concentrated on the target words for instruction, set the purpose and introduced the target words, and then questioned the use and meanings of the words. This is considered implicit instruction since the teacher did not directly offer the meaning of the word to the participants.

The second treatment involved participants completing a word map for each targeted word. During the first session of the treatment, the teacher lead the participants in writing the words (or tracing the word during subsequent sessions) and in developing a definition of the words with the teacher providing the final definitions; if the word had multiple meanings, multiple meanings were also developed. During the second session, the participants wrote sentence(s) to demonstrate the meaning(s) of the words. This activity also provided written reinforcement of the words. The third session provided an opportunity to discover synonyms for the targeted words with the teacher's directions. If participants were unable to provide synonyms, the teacher provided them. During the fourth session, the participants drew a picture to illustrate the meaning of the word.

The word map design in my study was developed based on the Frayer model (Graves, 2009). I modified the information used on the word map to include a participant drawn picture to help develop a schema for the word (U.C. Manzo and Manzo, 2008). I also added synonyms that allowed participants to make connections from known words to the targeted words. Definitions were given by the teacher to provide direct/explicit instruction and reduce the time of the activity; and participants wrote sentences to provide them repeated exposure of the word in their own words.

The third group examined in this study was the flashcard/control group. The flashcard treatment was labeled as a control group because it was the group that employed the district designated method of treatment that has been used for the last four years--using flashcards of Fry's Instant 1000 Word List to monitoring and practice of word mastery. The implementation of this treatment varies from building to building, from Classroom teachers, special education teachers, reading specialists, or

paraprofessionals may provide the flashcard instruction Time schedules for the treatments were not standardized and often depend on the instructors' availability.

As a travelling itinerant teacher, I had opportunities to have conversations about or observe the program in many schools. There appears to be no consistency between or even within buildings of how this program is implemented. Due to the difficulties of getting participation in the study, agreements was made with two principals to use their groups as control groups without any changes to what was the common practice in the school. The approach to using the flashcard was left up to the paraprofessionals who were used in the two schools to work with the fifth and sixth grade students. Having previously worked at one of the schools, I had opportunities to observe the techniques one of the paraprofessional used.

From my observations, there was no scheduled time to work with particular students. The paraprofessional had a the names of the students that needed help and during her assigned period, would get a child out of the classroom to work with his or her words. Each child possessed an envelope of flashcards that he or she was working on. The paraprofessional would take the cards and display them one at a time for the child to read. If the word was correctly read, the student would get a chance to replace that card with a new card that the paraprofessional wrote out. If the child had difficulty with the word, the paraprofessional would say the word correctly and move on to the next word. If a word was particularly troublesome, the paraprofessional would offer a short sentence or definition for the word and then move one. There was no minimum or maximum length of time the student would work with the paraprofessional. The number of words

the child was working with was determined by the paraprofessional's judgment of how many words the student could handle.

Unable to observe the treatment in the second school, I spoke to the paraprofessional about how she implemented the treatment. In this school, she scheduled students from different classrooms to work with her on specific days, so the students saw her on a more regular one to two days a week basis. They were seen during a 45 minute scheduled period for as much time as they needed. These students worked in the back of their classroom with her while the rest of the class was receiving other instruction. Each student had a folder with all of his or her mastered word cards along with words they were working on. These folders were kept by the paraprofessional, so the students did not have access to them during different times of the day. When it was their time to work with her, she shuffled the word cards and showed each card to the student. If the student was successful the card went into the right pile and if they were unsuccessful, the card went into the left pile. This process occurred three times. The paraprofessional marked the results on a chart to record their progress. If the child was successful three times in a row, the card was removed and the child wrote a new word on a new card. At the end of the session, the paraprofessional reviewed the incorrect words and asked the child for a sentence with the word. When the child was unable to supply a sentence, the paraprofessional modeled one for them.

Measures

Group selection was determined by the Response to Intervention committee based on the school-wide assessment administered each marking period. The school-wide testing consists of the San Diego Quick Word Test for word recognition levels, DIBELS oral reading for fluency levels, the 4 Sight test for predictability of PSSA scores and the Fry Instant 1000 Word List for participants that have not reached mastery in the past. These scores and teacher observations were used during “Data Digs” to group participants according to their needs. There are three basic levels: Benchmark, Below Benchmark and Intensive. The intensive group was usually limited to 3-6 participants and all were taught by a Special Education teacher due to the severity of their reading limitations, with one exception - a teaching assistant taught one group for the guided reading treatment.

Several assessment measures were administered pre-treatment to determine baseline levels for fluency, word recognition, vocabulary knowledge of targeted words and comprehension. A word usage assessment was added to the post-testing round to determine whether the word was part of the participant’s receptive or productive vocabulary. Post-testing of fluency, word recognition, vocabulary knowledge and comprehension to determine delayed retention of the skills was administered to all groups.

The Gates-MacGintie Level 4, Form S test was administered to the subjects to measure general vocabulary knowledge and comprehension achievement on a standardized test that is normed to their nation-wide peers before the treatment began and four weeks after the treatment concluded. These tests were administered because the

purpose of learning high frequency words extends beyond knowing the words themselves. The National Reading Panel (2000) established a clear relationship between word knowledge and comprehension. Moreover, knowing high frequency words should make it easier for the readers to learn other new words incidentally.

One school had to delay the final testing by three weeks because of the PSSA state-wide testing. This test was group administered. Off- level testing was administered because the participants in the study were expected to be one or more years below expected reading level. I completed the scoring to prevent bias and preserve reliability. The test, when administered as a pre-test, provided a standardized, norm-referenced baseline of the participants' vocabulary knowledge and reading comprehension achievement, to compare to nation-wide student achievement. The test confirmed the subjects' below level performance. The Gates-MacGintie (McGintie, McGinitie, Maria & Dreyer, 2000) is commonly used as a reading achievement instrument in current research studies. As a post-test, the test served as a measure of growth during the study.

The teacher administered a word recognition list of the 30 (see Appendix A) randomly selected target words from the last 50 words on the Fry Instant 1000 Words list to determine a baseline for the participants' ability to recognize and read the target words. The teacher administered the test individually to each student. The student had to read each word from the list within two seconds of seeing the word in order to score mastery on the word recognition of the word. The percentages of correct words were recorded as the results. This test was administered to establish a baseline of word recognition of high frequency words before the study began and was able to be re-administered to establish progress of students' word recognition, speed and accuracy during the treatments. These

tests could then be compared to the progress of the students in the control group who received the traditional flashcard instruction that is used by my school district.

I wrote two sentence closure tests, one pre-test and one post-test (see Appendix B), to evaluate the students' knowledge of the targeted words. The sentence closure test had four multiple choice responses which were crafted to provide the students with enough context clues to determine the correct response. Distracters that were similar in nature were provided - one word that sounded similar to the word, and two that would fit the sentence grammatically but had distinct meanings that did not fit the sentence.

The purpose of the sentence closure was to provide an instrument that would provide a baseline and comparison of word knowledge growth and an understanding of the students' receptive ability to recall high frequency definitions in context of a sentence. The results would establish the effectiveness of the treatments and the flashcard instruction during the study period.

Two forms of the sentence closure test were designed and were administered in order to avoid rehearsal effect since the intervals between tests were so close to each other. The test consisted of a sentence closure and four multiple choice responses. The responses were composed of the correct response with three distracters — one distracter closely resembled the correct response (i.e., century and sentry) while the other two distracters were the same part of speech as the correct response. The set of distracters remained consistent for all forms of the test. Forms 1 and 2 have different sentence probes. The sequence of the questions had also been changed on forms 2 and 3. The sentences were crafted to provide enough contexts so that vocabulary knowledge and word recognition would be assessed. Successful completion of the task would require the

students to draw on their receptive reading vocabulary for knowledge of completing the text correctly and word recognition skills to choose the correct response. Comprehension skills would also be used to understand the sentence and fill in the blank with the correct response.

A one-minute timed fourth grade level reading passage from the QRI-3 was administered to determine a baseline fluency level. The QRI-3, a well recognized informal reading assessment, provides several reading passages at each grade level. However, after the baseline was determined, the QRI-3 passages were re-examined and I determined that the subsequent passages did not contain the target words and would not be a reflection of improved fluency results based on teaching the target words. To accommodate for this problem I wrote new fourth grade level passages for the post-testing (see Appendix C) to include targeted words. The teacher administered the tests individually. The student read for one minute while the teacher recorded any errors. The total number of words read in one minute was counted and errors were subtracted resulting in the “words correct per minute” (wcpm) score.

The fourth grade level passages were used because all the readers in the study were reading below level and doing so maintained the consistency of the level of the Gates test. The reading passages were used to determine baseline and comparison scores for progress in fluency, which is affected by quick and accurate recognition of high frequency words in the passage and the incidental generalized knowledge of new words that accompanies the learning of high frequency words.

The reading passages could have been used to test comprehension instead of the Gates-McGintie, however, this posed potential problems: The reading passages would

have had to be administered individually, which would have been time consuming; doing so allowed for teacher biases; and this would not have provided a standardized, norm-referenced profile.

Sentence closure with multiple choice responses of the targeted words assessed vocabulary knowledge and measured the receptive vocabulary needed for reading comprehension. It is a common tool used in curriculum based and standardized tests. Students were provided with 30 fill-in sentences and asked to choose the correct response from the four multiple choice words. This test allowed them to use context clues and recall words from recognition skills. The correct answers were counted and the percentage correct was recorded.

The instrument had been piloted in June 2009, by the sixth grade participants who were mostly achieving at or above grade level. Twenty-seven participants piloted the test; four of whom were below level. Seventeen participants scored 100% on the assessment, indicating that the words chosen for the study should be mastered by the end of sixth grade. The mean score of the group was 98.6%, which indicated mastery for the entire group (90-95% is the standard for independent mastery). The mode was 100%. Since the majority of scores were within the mastery range, the ceiling effect had been considered. This effect concludes that when scores are so high, the possibility for further improvement is minimized. Further examination of the below level participant scores indicated that their scores were much lower than the average score, further indicating the lack of mastery of the low achieving participants, the targeted population of the study.

The pilot test consisted of Form 1 of the sentence closure test. The response choices were re-examined and changed to make sure there was a similar sounding

response, and that all other choices were the same part of speech. In all, 17 responses were changed and one set of responses changed from lower case initial letter to upper case letters for the pre-test since the response was the first word of the sentence.

Word recognition and the ability to read words in isolation were assessed by reading a list of the 30 targeted words before and four weeks after the completion of the treatment. This provided information about the student's ability to read high frequency words in isolation. The words must be recognized within two seconds and must be accurately read. This is a skill that often proceeds and benefits the student's ability to read the word in context with fluency. Baseline and post-test results of all groups were then compared to check for the effect each treatment and the flashcard instructional approach had on the student's growth. The rehearsal effect was also a factor that was considered for this test, so to avoid any effect, three forms of the word lists were developed with random sequencing of the words.

Because a number of students on the sentence closure pre-test demonstrated high, ceiling effect scores on the pre-test, I added a sentence construction task as a post-test (see Appendix D), believing that such a task might provide the opportunity for more variable performance. This test would provide an assessment of the student's productive ability to use the high frequency words correctly in their own sentence. This instrument could be used to determine the stage of word knowledge of a student upon completion of the study. Without the foresight of the value of this instrument before the study began, a pre-test was not used and progress comparisons will not be available for this skill; therefore, effectiveness of the treatments and flashcard instruction will not be able to be analyzed. This test required the participant to write a sentence with each of ten randomly

selected words. The test was then scored using a rubric (Table 3) to determine if the students had enough knowledge to use the word in correct context, demonstrating the meaning of the word.

Table 3.

Productive Sentence Scoring Rubric

Points	Description
0	Did not write a sentence Sentence does not demonstrate any understanding of the word
1	Sentence reflects minimal understanding of the word either in terms of the definition or the way it's used or both
2	Sentence reflects some understanding of the word and how it's used
3	Sentence reflects clear understanding of the word and how it's used

Materials

The Fry's Instant 1000 Words List is used by the school district for all students from kindergarten to sixth grade. The selection of this frequency based list was based on the established usage of this list in the school district. Mastery of the list should have been accomplished by the end of third grade.

Students in all grades are supposed to meet with a paraprofessional or teacher several times a week to read words from the list and determine ten words they need to work on until they achieve mastery. As words are recognized, they are marked as mastered and new words are added to their lists. Many of the intensive readers have not mastered the list even though they are in fifth or sixth grade. Many times words that had been considered mastered were not retained long term.

For my study, 30 words (five words per unit repeated for four sessions) (see Appendix E) for targeted instruction were randomly selected from the last 50 words of the list. I chose to use the last 50 words on the list because most of the participants had not mastered the frequency list of 1000 words and were somewhere in the 700-980 range of mastered words. By selecting the last 50 words, the chances that the participants would not have been introduced to the words were increased. I selected 30 words randomly for the list in order to predetermine the five words used for each of the six units of treatment.

I prepared a total of 24 guided reading lessons (reading level ranged from 3.6 to 4.9). Four guided reading passages (See Appendix F) were developed using the five targeted words for each unit of the treatment. The readability levels of the passages were determined by the Flesch-Kincaid readability test. The passages were accompanied by a focus question and questions based on the vocabulary before and after the passage.

The purpose of each passage was to find the meaning of the targeted words. The teacher listed the words for the participants before reading the passage and asked questions that were directed towards the instruction of the word meanings. There were also a few questions for each passage that asked about strategies of affixes. Multiple meanings of the words were also part of the instruction.

The passages were constructed to allow students to draw the meaning of the word from the context of the passage. Different strategies were used to allow the participants to infer or read the definition of the word. Passages ranged from 125 to 350 words in length. There were two narrative passages and two expository passages for each unit.

This allowed participants a variety of reading experiences. (See Appendix F for the guided reading passages and the directions to teachers.)

Since the treatment was a ten minute treatment session, it was designed so the teacher would introduce the words (2 minutes), the participants would read the passage with teacher assistance (2 minutes), and the participants would read the passage out loud (2 minutes), and the teacher and student would engage in a question and answer session about the targeted words (4 minutes). Five blank word maps were presented to each subject during each unit in treatment 2. The teachers elicited responses from the students for the word map. They were also provided with sample responses for each word. (See Appendix G for a blank map.)

Procedures

Pre- and post- testing. Pre- and post-testing procedures have been discussed in the Measurement section of this paper.

Teacher training. Each teacher received approximately one hour of training. I met with each individual teacher for training purposes at mutually convenient times. The teachers were trained in testing procedures, materials and delivery techniques for their treatment. Teachers were also handed guidelines and a written description of the tests and how to administer them. They were presented with instruction guides for each unit and the necessary materials.

I was available for additional training, answering questions and solving problems throughout the study.

Teacher fidelity. Due to the nature of the study, there were five teachers involved. In order to keep the teachers true to the assigned treatments and time period, I

contacted the teachers weekly either in person or by phone. The teachers were asked about the instruction and time the treatment took.

In order to check the fidelity of the teaching, an outside observer was trained in the treatments and completed three fidelity checks for each teacher. The first fidelity check observation was completed by the observer and me to determine reliability of what the observer was looking for. Most observations were pre-arranged to make sure the teacher was available and the treatment was scheduled for the set observation time. (See Appendix H for the observation protocol.)

Analysis

For the purposes of the study, ANCOVA was conducted to compare the effect of the independent variables: guided reading, word mapping and control group treatments.

The ANCOVA had been chosen because of its ability to adjust for non-random grouping of treatment groups and ability to adjust for the high starting scores of the word mapping group, where an ANOVA would not be able to do this. With the ANCOVA the pre-test became the covariant, and the post-test was the dependent variable. and Unlike an ANOVA, an ANCOVA reduces their likelihood of a Type II error.

The Gates-MacGintie test results were used only for pre- and post-testing; an ANCOVA was used to analyze these results to adjust for non-random group selection and the difference of pre-test scores by the word mapping group, which was much higher than the other groups.

The significance level of $p < .05$ was used for all statistical testing.

The sentence production test that was administered only in the post-testing sessions was not subject to an ANCOVA analysis. The sentences were scored according to the rubric found in Table 3.3. They were scored by my outside observer and me. We found 95% reliability in the scoring. Sentences that were not scored the same by both of us were then discussed until a score was agreed upon by the scorers. The total numbers of points were then reported as a percentage. Scores were then analyzed by comparison of the groups' mean scores.

A tukey post hoc test was run after the ANCOVA test when a significant effect was found to determine the group that was different from the others.

Conclusion

Building on established research and theory of the importance of teaching struggling adolescent readers vocabulary recognition and knowledge, this quasi-experimental design study was designed to investigate the effectiveness of two methods of vocabulary instruction and compare them to the school district's method of teaching high frequency words to students through the use of flash card drill. The impact of the methods was compared through the administration of pre-, and post-testing of word recognition, word knowledge of targeted words, fluency and comprehension as well as by post-testing of students' ability to use the targeted words accurately. The study also provided a comprehensive look at the impact of guided reading and word mapping on struggling upper elementary readers in comparison to the flash card instructional approach that my district has been using.

The instruments used were both standardized, norm-referenced instruments and researcher designed curriculum-based instruments. All of the instruments were designed

to provide a baseline and comparison measure of the students' progress and group effect of the treatments compared to the district's use of flashcard instruction for high frequency word knowledge, recognition and fluency. The improvement of skills in these areas are important to the generalized application of skills to new words encountered in reading passages as the learner begins to close the learning gap that is experienced by these students.

CHAPTER 4

RESULTS

Based upon my teaching experience with adolescent struggling readers, I developed a personal interest in investigating alternative methods of improving their word knowledge. By improving word knowledge, current research demonstrates (Beck, McKeown & Kucan, 2002; Marzano, 2004) that students would improve their word recognition, fluency and comprehension. Since I came to the conclusion that these struggling readers lacked word knowledge of common, high frequency words, I chose the Fry Instant 1000 Words List, used by my school district, as a base for my source of vocabulary words for this study. Based on the theory that explicit exposure to vocabulary words would lead to improved student word recognition, word knowledge, fluency and comprehension of adolescent struggling readers, I structured this study to examine the effects of explicit and implicit vocabulary (McGee & Johnson, 2003) instruction on improved word knowledge and reading skills. The effects of these treatments would then be compared to a control (flashcard drill and practice) group to examine the overall effectiveness of treatment. The purpose of the study is to answer the following questions:

Considering each treatment on its own:

1. Considered separately, did word mapping, guided reading and control/flashcard treatments have a significant effect on vocabulary knowledge, word recognition, fluency and comprehension?
2. Were there significant differences among the word mapping, guided reading and control/flashcard treatment groups?

The sample consisted of 53 struggling readers in grades five and six in three groups: the control group, which had no treatment but did use flash card drill with a teaching assistant or classroom teacher to practice the words; a word mapping group and a guided reading group. Both of the treatments, word mapping and guided reading were instructed for ten minutes a day during their Power Hour (a district wide supplemental reading period). The study consisted of six units of five high frequency words studied over a period of four sessions. The word mapping group was introduced to the word, wrote the word and wrote a definition of the word on the first day, traced the word and wrote a sentence on the second day, traced the word and wrote synonyms for the word on the third day and traced the word and drew a picture on the fourth day.

The guided reading group was directed to focus on the five words and read a story that included the word twice each day and asked about the definitions of the words each day using four different stories for each unit.

Each groups was administered pre- and post-tests using the Gates-MacGinitie Reading Level 4 reading test, as well as a pre- and post-word recognition test, a sentence closure test, and a fluency test. The treatment groups were also given an interim test for all the tests except the Gates-MacGinitie. A sentence production test was given to all the groups after the treatments were complete to check their productive word knowledge. The post-tests were given four weeks after the last unit was complete to determine long-term retention of the words.

Gates Vocabulary Tests

The standard level of vocabulary in this study was measured according to the Gates Vocabulary test. This provided a comparative level of vocabulary of the students in the study to their peers and provided a reference for how much of the learning gap has been closed during the period between evaluations. This is an important factor to monitor when working with struggling readers because the greater the progress students can make in a short period of time, the quicker the learning gap will be closed. The same off-level (level 4) test was administered to accommodate for below level reading for the pre- and post-tests. It is important to remember that in this study the focus of the treatments is on increasing specific word recognition and knowledge and not general knowledge of vocabulary, the focus of the Gates test.

Table 4 provides the summary statistics by group on the Gates Vocabulary test expressed as grade equivalency scores. The table indicates the largest average gain was in the control/flashcard treatment group (pre: 2.90 and post:3.78 with a gain of +.88). The guided reading group and word mapping group had a minimal gain of +0.08 and .28, respectively.

Table 4

Mean and Adjusted Mean Summary of Gates Vocabulary Test Scores by Grade Equivalency by Group

	N	Pretest	Post-test	
		MN	MN	ADJ MN
Guided Reading	20	3.25	3.33	3.44
Word Mapping	17	3.96	4.24	3.70
Control/Flashcards	16	2.90	3.78	4.21

Analysis of the impact of each treatment on Gates Vocabulary test. To assess whether the changes in each treatment's performance is statistically significant, correlated t-tests were done. As shown in Table 5, the control/flashcard group had a statistically significant improvement between pre- and post-tests. The other groups did not have a statistically significant change.

Table 5

Correlated t-tests for Gates Vocabulary

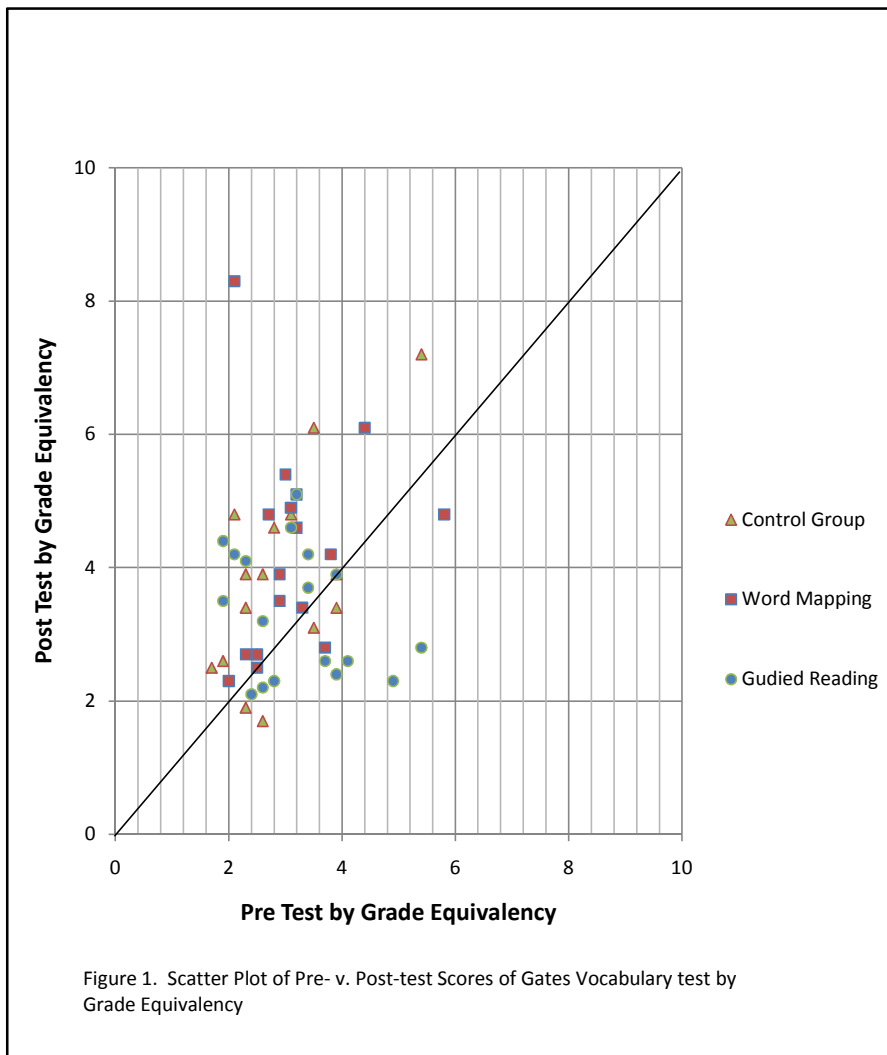
	Post-test Minus Pre-Test	Significance of Change
Guided Reading	.08	.756
Word Mapping	.28	.150
Control	.88	.007

As a teacher, however, I am interested not only in group performance but also in the impact that the treatments appeared to have on each individual student. Therefore, I examined scatter plots on each measure (See Figure1).

The scatter plot in Figure 1, Scatter Plot of Pre- v. Post-test by Grade Equivalency Scores for the Gates Vocabulary test, provides a way to examine the performance of individual students, allowing me to identify both patterns in performance and outliers. The identity line indicates no change between the pre-and post-tests. Points above this line indicate improved performance while points below the line indicate worsened performance. Points on the line indicate no change in the learning gap.

Using the scatter plot, one can easily identify, at a glance, outliers and trends of each group. In this chart, it is obvious that students of the guided reading group made the least amount of progress, with the majority of the students falling on the identity line or below. A closer examination of the group indicates that eight students fell below the identity line. An examination of each plotted point can indicate the exact amount of deterioration each student experienced. The range of students fell below the identity line weakened between $-.3$ and -2.6 years on this subtest. The number of students that fell above the identity line was nine. These students ranged from $+.6$ to $+2.5$ years of growth. This indicates an almost equal number of students benefitted as those who did not benefit from the treatment.

The control group had one student who made no change and four students who fell below the identity line. Further examination of the individual plotted points reveals that the four students who fell below the identity line weakened between $-.5$ and $-.9$ years. There was less deterioration of the students' scores compared to the guided reading group. Eight students showed growth ranging from $+.7$ to $+2.6$ years. The word mapping group had one student on the identity line with a cluster of students close to the line. The word mapping group had two students who fell below the identity line, ranging from $-.9$ to -1.0 years. One student showed no change in scores and ten students fell above the identity line. The range of growth for this group was $+.3$ to $+6.2$ years. The validity of the student scoring an increase of 6.2 is questionable. Eliminating that score, the range was $+.3$ to $+2.4$, which is also similar to the growth ranges of the control and guided reading groups. These students ranged from $+.6$ to $+2.5$ years of growth.



Comparison of treatments. The results of the group scores were analyzed by an ANCOVA in order to compare the effects of the treatments while adjusting for group differences in scores on the pre-test. The results of the ANCOVA are presented in Table 6. The ANCOVA indicates there was not a significant difference between groups'

Table 6

ANCOVA for Gates Vocabulary Test

Source	df	Mean Square	F	Sig.	Partial Eta Square
Pre-Test	1	42.069	42.069	.000	.464
Group	2	2.608	2.627	.082	.097
Error	49	.993			

performance in vocabulary ($p = .082$, where $p < .05$) on the post-test when adjusted for pre-test differences. The partial eta squared of .097 indicates that approximately 10% of the variance was accounted for by the treatment. The standard for educational research accepts the eta squared = .1 as a meaningful effect.

Gates Comprehension Test

Like the Gates Vocabulary Test, the comprehension test is a standardized, norm-referenced test to provide a comparison of the national population to the individual student. The summary statistics by group on the Gates Comprehension test as expressed in grade equivalency score is presented in Table 7. The control group appears to have made the most progress when comparing the pre- and post mean score (+.43) and the word mapping made the least progress (+.09).

Table 7

Mean and Adjusted Mean Summary of Gates Comprehension test Scores by Grade Equivalency

	N	Pretest	Post-test	
		MN	MN	ADJ MN
Guided Reading	20	2.58	2.80	2.90
Word Mapping	17	3.05	3.14	2.95
Control/Flashcards	16	2.61	3.04	3.12

Analysis of the impact of each treatment on Gates Comprehension. To assess whether the changes in each treatment's performance is statistically significant, correlated t-tests were done. As shown in Table 8, the results indicate the control group improved significantly between pre- and post-tests, while the other two groups' scores did not significantly change.

Table 8

Correlated t-tests for Gates Comprehension

	Post-test Minus Pre-Test	Significance of Change
Guided Reading	.22	.394
Word Mapping	.09	.626
Control	.43	.008

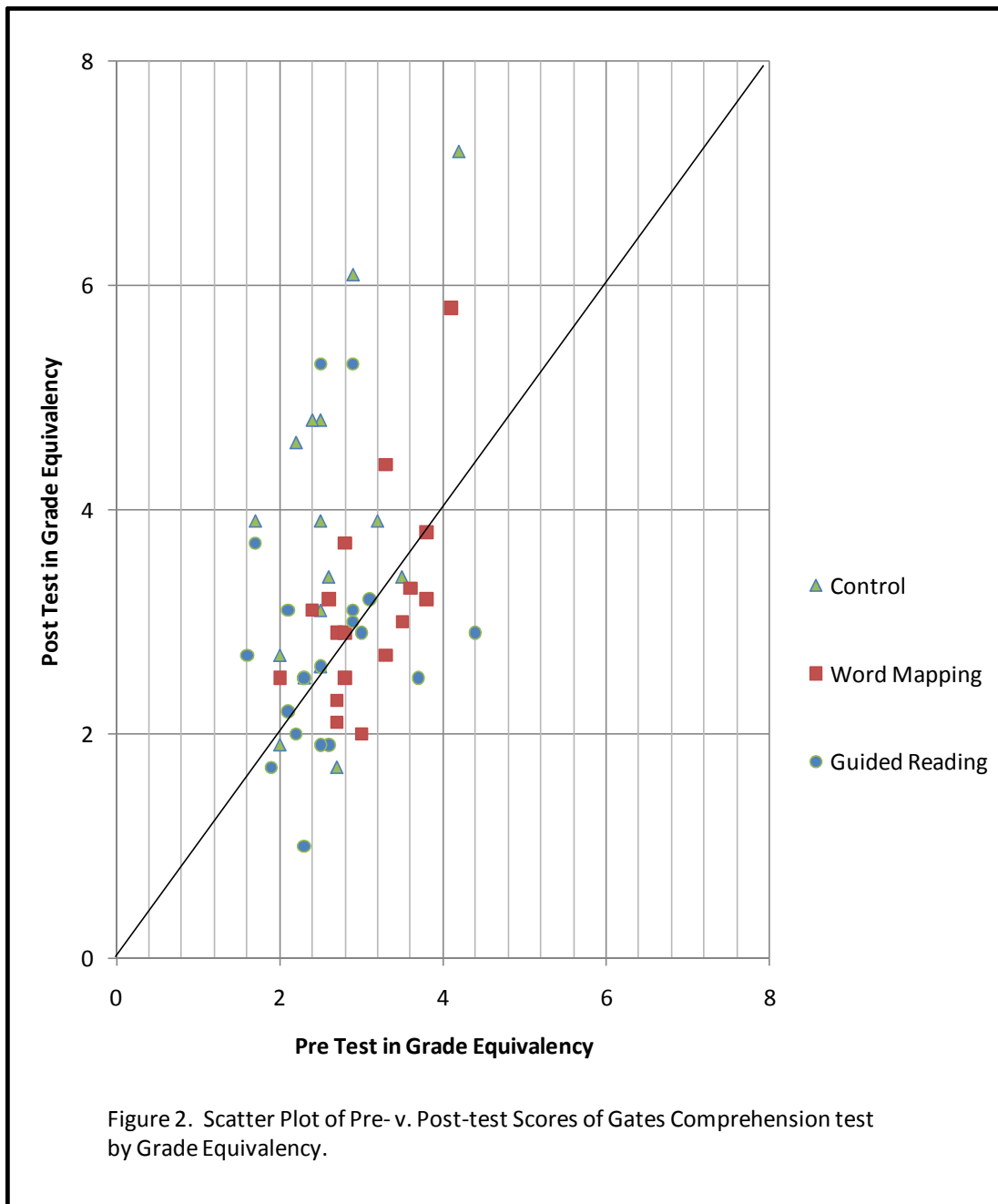
Once again, the scatter plot below (Figure 2, Scatter Plot of Pre- v. Post-test in Grade Equivalency Scores for Gates Comprehension) was carefully examined to assess the impact of the treatments on individual students. Upon initial examination, it is evident that there is a large cluster of points around the identity line. This cluster is larger for the word mapping group than the other two groups. This indicates there was a small

amount of growth for this group in comprehension. This finding is consistent with the summary findings of $+0.09$ changes in mean scores between pre- and post tests. It is interesting to note that by looking at this plot, the greatest proportion of students pre-tested around or below fourth grade level in comprehension which verifies their classification as struggling readers. It is also interesting that most of the word mapping group is also clustered in the area below fourth grade level for both pre- and post-tests. There are two outliers in this sample who appear to pre-test in the fourth grade range and appear to have made more progress than the other students in the group.

Since there are no evident clusters, the control/flashcard group appears to be scattered throughout the chart, which suggests there was no particular pattern of growth. There were three students that showed a decrease ranging from -0.1 to -1.0 years. The rest of the group made gains in comprehension in the range of $+0.7$ to $+3.2$ years. This indicates that five students using flashcard drill closed the learning gap by 2.3 to 3.2 years.

The word mapping group appears to have made the least amount of growth, with the difference in pre-post test scores ranging from -1.0 to $+1.7$. Only six students made minimal progress while three students demonstrated no change in their scores at all.

Similar to word the word mapping group, the guided reading group appears to have a cluster of scores around the identity line. The number of points below the line seems to be fairly equal to the number of points above the line. There are no outliers and



deterioration appears to be minimal. The range of deterioration is between -.1 and -1.3 for eight students. The range of progress is +. - to +2.8 for ten students. Three students made progress of two or more years which is similar to some of the results of the control/flashcard group.

Comparison of treatments. The results of the group scores were analyzed by an ANCOVA in order to compare the effects of the treatment while adjusting for group differences in scores on the pre-test. The results of the ANCOVA are presented in Table 9. The ANCOVA indicates there was not a significant difference between groups'

Table 9

ANCOVA for Gates Comprehension

Source	df	Mean Square	F	Sig.	Partial Eta Square
Pre-Test	1	7.137	9.070	.004	.156
Group	2	.224	.285	.753	.011
Error	49	.787			

performance in comprehension ($p = .753$ where $p > .05$) on the post-test when adjusted for pre-test differences. The partial eta squared of .01 indicates that approximately 1% of the variance was accounted for by the treatment. The standard for educational research accepts the eta squared = .1 as a meaningful effect.

Fluency

Fluency in this study was measured according to the standards utilized by the school district. This means that the definition of reading rate and word accuracy as defined by NPR in 2000 was used. Different forms of the fluency test were administered

for the pre- and post-tests. The pre-test was a fourth grade passage from the QRI-2, while the post-tests were written to include the words studied during the treatment. The measurement of the number of words read minus the errors is referred to as the words correctly read per minute (wcpm), which was the measure used for this analysis.

Table 10 provided the summary statistics by group on the fluency test expressed as wcpm scores. The table indicates the largest average gain was in the guided reading treatment group (pre:82.60 and post: 95.50, with a gain of +12.90) and similar improvement in the word mapping group of +12.37. The control group showed a drop in fluency rate of - 2.96.

Table 10

Mean and Adjusted Mean Summary of Fluency Scores by Words per Minute by Group

	N	Pretest	Post-test	
		MN	MN	ADJ MN
Guided Reading	20	82.60	95.50	107.51
Word Mapping	17	109.93	122.31	109.38
Control/Flashcards	16	96.47	86.80	85.65

Analysis of the impact of each treatment on fluency. To assess whether the changes in each treatment's performance is statistically significant, correlated t-tests were done. As shown in Table 11, the improvement of the guided reading and word mapping groups is statistically significant as is the decline in performance of the flashcard/control group. This and the significant decline in fluency are a valuable result to be aware of as a

teacher since improving fluency is such an important goal and such a driving goal from the standpoint of my school district.

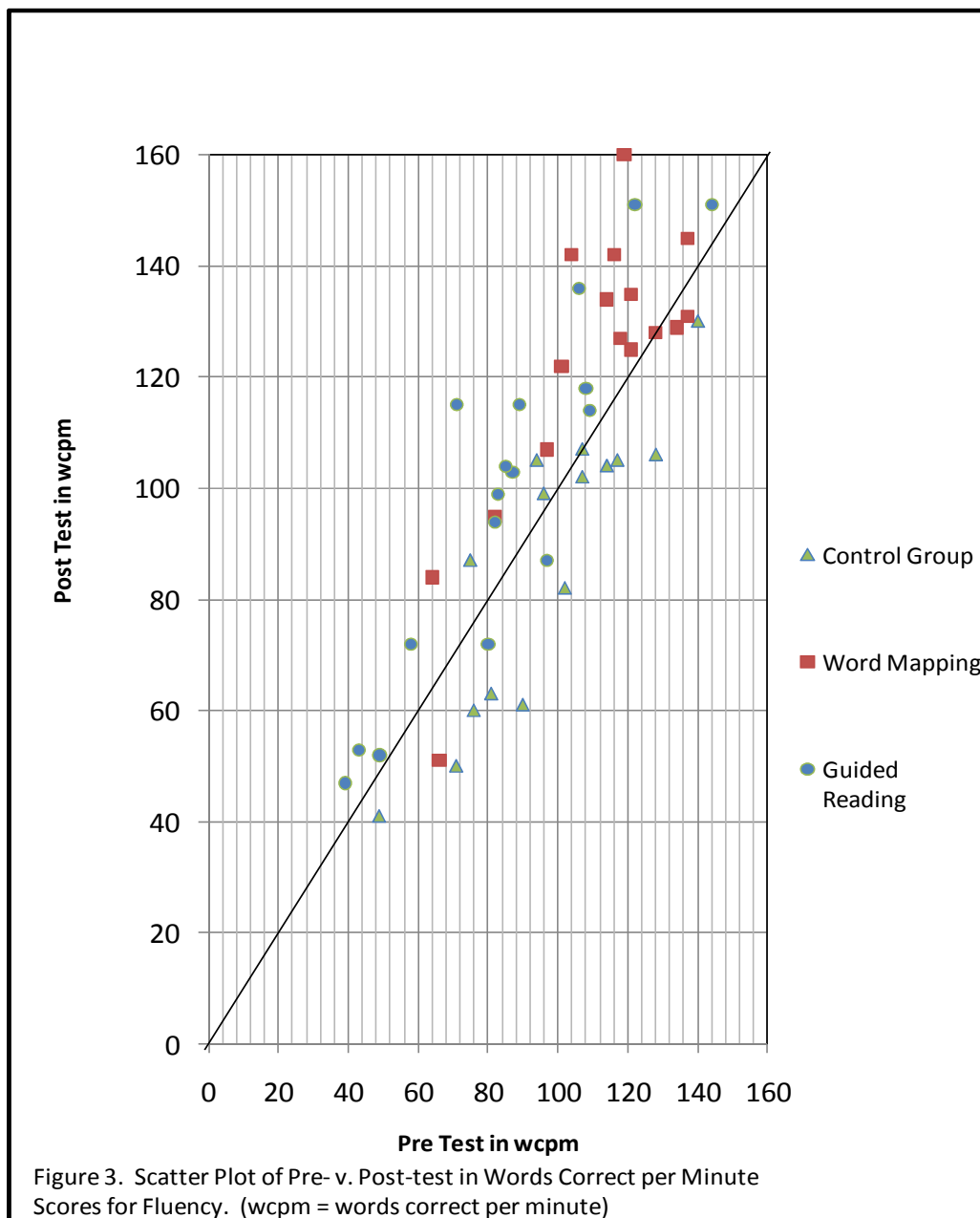
Table 11

Correlated t-tests for Fluency

	Post-test Minus Pre-Test	Significance of Change
Guided Reading	12.90	.001
Word Mapping	12.38	.006
Control	-9.67	.008

The scatter plot in Figure 4, Scatter Plot of Pre- v. Post-test in Words Correct per Minute Scores for Fluency, provides a way to examine the performance of individual students, allowing me to identify both patterns in performance and outliers.

The scatter plot reveals that five students of the word mapping group are clustered towards the top of the chart around the 120 (words correct per minute—wcpm) or better mark, indicating that they were near fluency (150 wcpm is the benchmark in the school district at the fifth and sixth grade level) when they took the pre-test. Three students' performance weakened between 5 wcpm and 15 wcpm while eleven students progressed between 4 and 41 wcpm. The scatter plot also reveals that the guided reading group had the most variability in performance. Individual analysis of the points indicated two students' performance weakened, ranging from -8 to -10 wcpm; fifteen students progressed between +3 and +44 wcpm. There was a small cluster around +26 to +30 wcpm and one student did not show any change. The scores for the control group cluster around the identity line.



Comparison of treatments. The results of the group scores were analyzed by an ANCOVA in order to compare the effects of the treatment while adjusting for group differences in scores on the pre-test. The results of the ANCOVA are presented in Table 12. The ANCOVA indicates there was a significant difference between groups' performance in fluency ($p = .000$, where $p < .05$) on the post-test when adjusted for pre-test differences. The partial eta squared of .349 indicates that approximately 35% of the

Table 12
ANCOVA for Fluency

Source	df	Mean Square	F	Sig.	Partial Eta Square
Pre-Test	1	28426.635	136.776	.000	.744
Group	2	2622.769	12.620	.000	.349
Error	47	207.834			

variance was accounted for by the treatment. The standard for educational research accepts the eta squared = .1 as a meaningful effect.

The Tukey Post Hoc test was run to determine which groups differ from each other. Table 13, Tukey Post Hoc Test for Fluency, as presented below indicated the control/flashcard group was significantly different from the word mapping group ($p = .003$) and the guided reading group ($p = .005$). The Guided Reading group and the word mapping group were not significantly different ($p = .881$).

Table 13

Tukey Post Hoc Test for Fluency

Groups	Significance
Control v Word Mapping	$p = .003$
Control v Guided Reading	$P = .005$
Word Mapping v Guided Reading	$p = .881$

Word Recognition

Word recognition is the ability to identify an isolated word quickly and accurately. Good fluency depends on the student's ability to recognize words. The students were presented with a list of 30 targeted words and asked to read the word correctly. If they read the word correctly within two seconds they were given credit for the words. The percentages of correct words were recorded for data purposes.

Table 14 provides the summary statistics by group on the word recognition test expressed as percentage correct. The group with the highest post-test mean is word mapping (+96.27). Guided reading and the control group had post-test means of +84.99 and +80.63, respectively.

Table 14

Mean and Adjusted Mean Summary of Word Recognition Scores by Percentage Correct

	N	Pretest	Post-test	
		MN	MN	ADJ MN
Guided Reading	20	64.33	84.99	86.54
Word Mapping	17	78.43	96.27	92.60
Control/Flashcards	16	63.11	80.63	82.61

Analysis of the impact of each treatment on word recognition. To assess whether the changes in each treatment's performance is statistically significant, correlated t-tests were done. Table 15, indicates that all groups significantly changed between the pre- and post-tests.

Table 15
Correlated t-tests for Word Recognition

	Post-test Minus Pre-Test	Significance of Change
Guided Reading	20.66	.000
Word Mapping	17.84	.000
Control	17.52	.001

The scatter plot in Figure 4, Scatter Plot of Pre- v. Post-test in Percentage Correct for Word Recognition, illustrates the individual pre- and post-test differences or the progress/deterioration students made during the treatment. It also indicates a ceiling effect for students in the word mapping and guided reading groups. There is a large cluster of students near the top of the chart, indicating many students were either able to recognize the 30 target words on the pre-test. Those that knew all or most of the words before the pre-test would be found at the right of the chart. Those who score high because they learned the words during the treatment period would be at the top of the chart closer to the left side. No students from the control group reached the ceiling. Four students scored on the identity line, while one student hit the ceiling in both the pre- and post-test, indicating no growth was possible to.

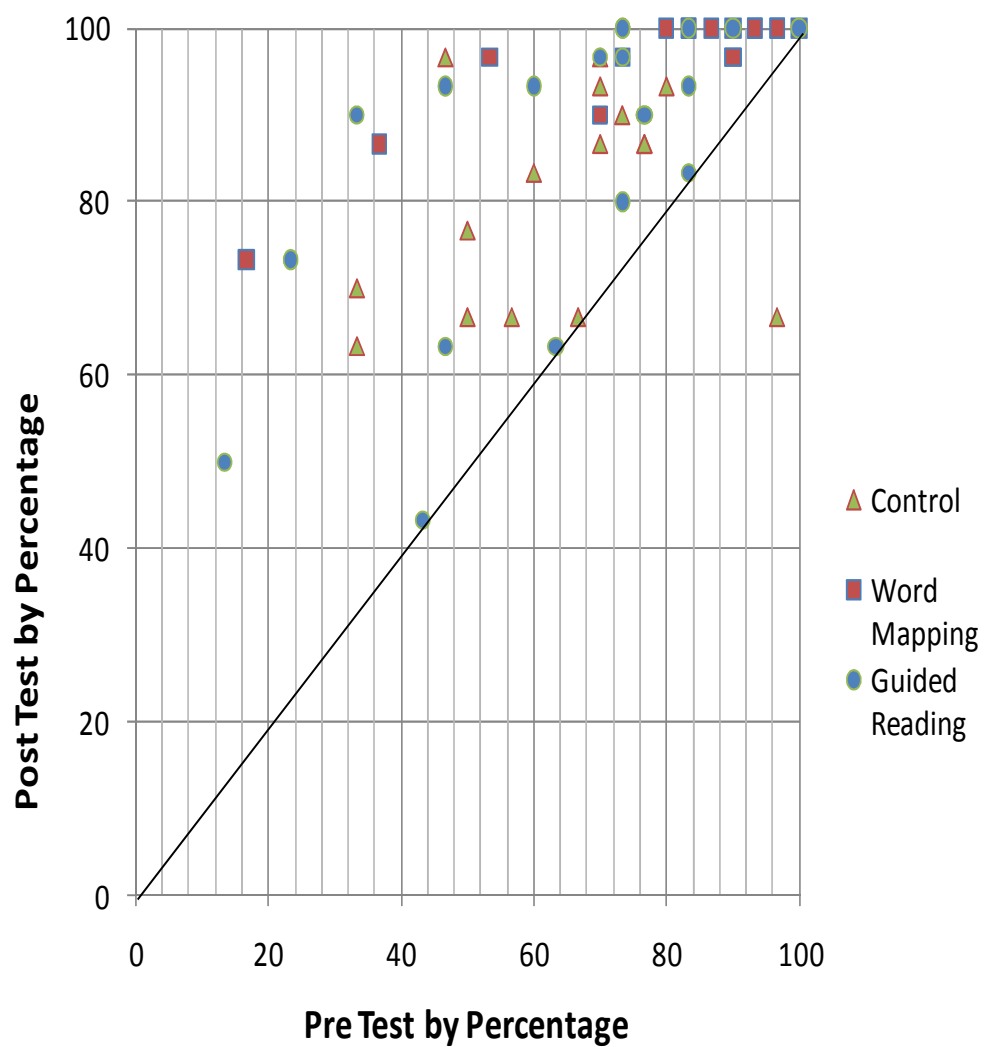


Figure 4. Scatter Plot of Pre- v. Post-test Scores of Word Recognition by Percentage Correct.

measure according to this instrument and one control group student scored below the identity line, an indication of a weakening of knowledge.

Deterioration was reported in the control group by one student whose performance weakened -30%. One student had no change in scores and the rest of the group improved their word recognition in the range of +10% to +37%.

The improvement in word mapping was positive for all the students in the group, ranging from +3% to +57%. It is important to remember that since many of the students began so close to the ceiling, high percentages of improvement are reduced greatly, even though they met the criteria of 100% mastery of the words.

Similar effects are reported in the guided reading group. Three students did not achieve a change in their scores, but the rest of the group ranged from +24% to +57%. The same observation about the ceiling effect applies as reported with the word mapping group.

Comparison of treatments. The results of the group scores were analyzed by an ANCOVA in order to compare the effects of the treatment while adjusting for group differences in scores on the pre-test. The results of the ANCOVA are presented in Table 16. The ANCOVA indicates there was a significant difference between groups'

Table 16

ANCOVA for Word Recognition

Source	Df	Mean Square	F	Sig.	Partial Eta Square
Pre-Test	1	2123.026	26.995	.000	.355
Group	2	383.798	3.318	.045	.119
Error	49	115.688			

performance in word recognition ($p = .045$ where $p < .05$) on the post-test when adjusted for pre-test differences. The partial eta squared of .119 indicates that approximately 12% of the variance was accounted for by the treatment. The standard for educational research accepts the eta squared = .1 as a meaningful effect. A Tukey post-hoc test indicated that the Word Mapping Group was significantly different from the control group ($p = .023$). None of the other comparisons were significant.

Sentence Closure

The sentence closure test was designed to monitor the student's receptive word knowledge of the 30 targeted words. It required the students to choose the correct word from a list of four words after reading a sentence and determining which word fit the context of the sentence.

Table 17 provided the summary statistics by group on the sentence closure test expressed as percentage correct. The group with the greatest gain between pre- (58.54) and post-test (74.79) with a mean difference of +16.25 was the control/flashcard group. Guided reading and word mapping resulted in a pre- and post-mean difference of +14.16 and +11.57 respectively.

Table 17

Mean and Adjusted Mean Summary of Sentence Closure Scores by Percentage Correct

	N	Pretest	Post-test	
		MN	MN	ADJ MN
Guided Reading	20	57.00	71.16	74.01
Word Mapping	17	75.88	87.45	82.07
Control/Flashcards	16	58.54	74.79	76.96

Analysis of the impact of each treatment on sentence closure. To assess whether the changes in each treatment's performance is statistically significant, correlated t-tests were done. Table 18 indicates that all groups significantly changed between the pre- and post-tests.

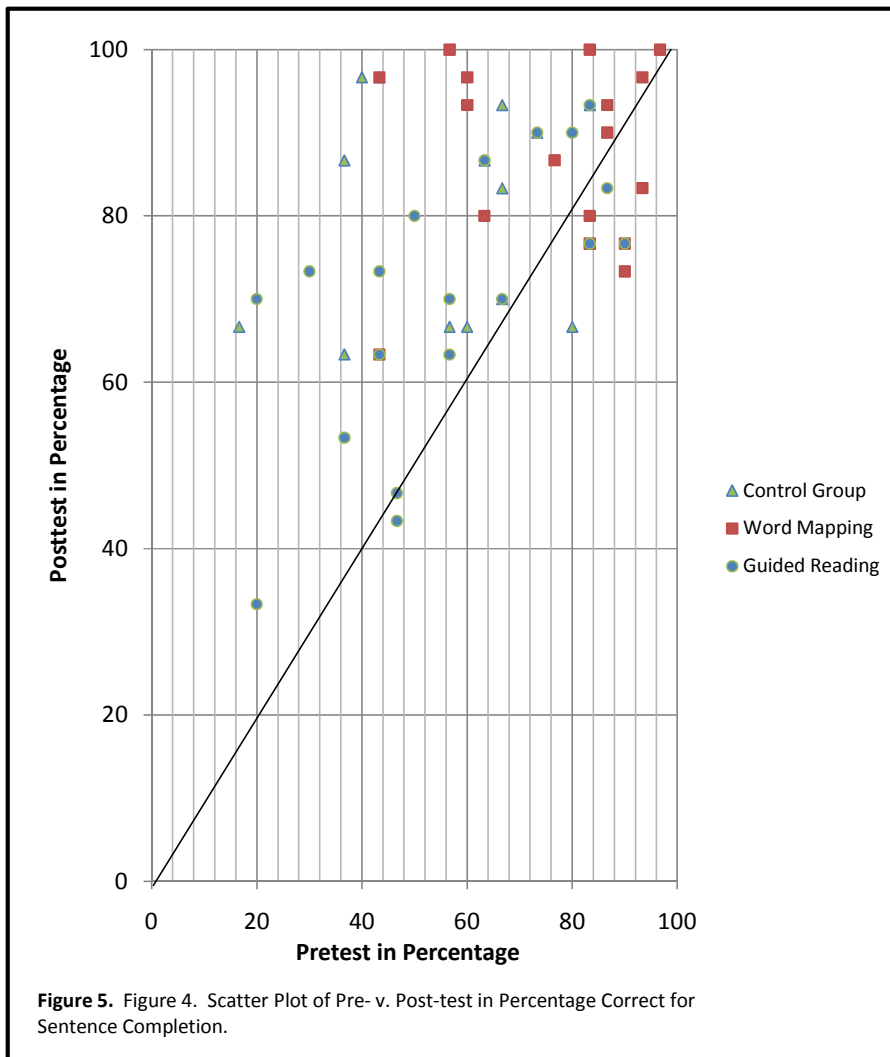
Table 18

Correlated t-tests for Sentence Closure

	Post-test Minus Pre-Test	Significance of Change
Guided Reading	14.16	.001
Word Mapping	11.57	.033
Control	16.25	.000

A scatter plot in Figure 5, Scatter Plot of Pre- v. Post-test in Percentage Correct for Sentence Completion, illustrates the individual pre- and post-test differences or the progress/deterioration individual students made during the treatment. Upon first glance at the chart, it is evident that the word mapping group scores cluster near the ceiling of the test. It is also evident that the word mapping group's scores on the pre-test were much higher than the control/flashcard and guided reading pre-test scores.

The guided reading scores appear to be distributed throughout the chart with no particular pattern. Most of the scores are above the identity line, with four markers below the identity line and one marker on identity line, suggesting that one student did not change and four students did not make progress. The scores that demonstrated a worsening ranged from -.33% to -13.34% while the scores that demonstrated progress ranged for +3.34% to 50.00%. The control group had one student that did not make



progress. The scores that demonstrated deterioration ranged from -0.33% to -13.34% while the scores that demonstrated progress ranged from $+3.34\%$ to $+50\%$. The control group showed large gains indicating that they did not pretest in the ceiling range, The control group had one student that showed a worse performance while the other students scored above the identity line. Examining the plot, many of the markers show a large rise in the post score. The scores showed progress that ranged from 6.67% to 56.67% . There was a high incidence of scores in the 50% and higher range indicating that a number of students made good progress with the flashcard instruction.

The word mapping group displays an interesting pattern of scores clustered in the upper right corner of the chart. This indicates high scores for some students during the pre-test and high gains for other students after the post-test.

Comparison of treatments. The results of the group scores were analyzed by an ANCOVA in order to compare the effects of the treatment while adjusting for group differences in scores on the pre-test. The results of the ANCOVA are presented in Table 19. The ANCOVA indicates there was not a significant difference between groups'

Table 19

ANCOVA for Sentence Completion

Source	df	Mean Square	F	Sig.	Partial Eta Square
Pre-Test	1	3654.241	20.694	.000	.297
Group	2	255.869	1.449	.245	.056
Error	49	176.586			

performance in word recognition ($p = .245$ where $p > .05$) between group performance. The partial eta squared of .56 indicates that approximately 6% of the variance was accounted for by the treatment. The standard for educational research accepts the eta squared = .1 as a meaningful effect.

Sentence Production

The sentence production instrument required the students to use 10 randomly selected target words in a sentence that reflected their knowledge of the word. Even though this was scored according to a rubric, scoring of the sentences are subjective depending on the scorers' experience and expectations of the students' writing skills. The sentences were scored individually by two scorers (an outside observer and me). When the scorers were not in agreement, the sentence was discussed and a score was determined. The test score was presented as an average of the scores for all the sentences. The descriptive summary in Table 1 reports the group's mean and standard deviation. There was no pre-test so progress could not be analyzed any further. All three mean scores were close to each other.

I first compared the writing skills of each group. Generally, all the groups seemed to write below expected level of fifth or sixth grade students. Most of the sentences were short in length and simple. There appeared to be a correlation between the below reading level performance and the level of performance in writing. While the control and guided reading group seemed to average six to eight words per sentence, the word mapping group appeared to average eight to twelve words per sentence, indicating more information and complexity to their sentences (i.e. my mom told me to clean my room and continued to watch the movie). The word mapping group often wrote sentences that

used conjunctions such as “because,” “but,” and “and.” These sentences gave more information about the targeted word and its meaning: “I am different from others because I wear dresses.” The guided reading and control group appeared to write simpler sentences such as “My shoes are different” or “My mom’s house had to be different than the others.” There seemed to be a slight difference among the sentences between groups. I think the word mapping group showed more creativity and explanation in their sentences. This may have been due to the inclusion of sentence writing in their treatment. The sentence writing segment provided students with teacher feedback on their writing skills and more practice with their skills. They also seem to have paid more attention to matching the word to the grammar of the sentence. For example, the word mapping group wrote sentences like “Cars are made in several factories,” while the control and guided reading groups tended to concentrate on the meaning of the word “factories” but made it fit into their sentence, “I got the pretzel from the pretzel factories.” This showed their understanding of the word but did not make it a stage 4 word because proper grammar would have used the singular form, “factory”. I believe the word mapping group had an edge on this also because of repeated practice, sharing and feedback on the sentences.

In each group there appeared at least one student that wrote the formula sentence, _____ means _____. As scorers, we discussed the validity of this sentence. Grammatically, the sentence was correct, as it reflected the direct meaning of the word, but did not demonstrate their ability to use the word linguistically. After a great amount of discussion, we settled on giving these sentences a three if they truly demonstrated the word knowledge of the targeted word. We came to the conclusion earlier that most of the

sentences were probably written at a second or third grade level and these sentences reflected the limited writing skills of the students that wrote them.

Discussion

My first research question asked whether considered separately the guided reading, word mapping, and control/flashcard treatments had a significant effect on students' vocabulary knowledge, comprehension, fluency, word recognition, sentence completion, and sentence production. The control/flashcard group demonstrated a significant differences on all of the measures. However, the control group showed a negative effect in fluency. Word mapping and guided reading also showed significant differences between the pre- and post-test scores in fluency, word recognition and sentence completion.

My second research question compared the effectiveness of the three treatment between groups. ANCOVA analyses revealed a significant difference among the groups on fluency and word recognition. A post-hoc tests demonstrated that the guided reading and word mapping groups were significantly different from the control/flashcard group on fluency. A post-hoc test demonstrated a significant difference between word mapping and the control/flashcard treatment on word recognition.

CHAPTER 5

IMPLICATIONS

The study examined the effectiveness of word mapping and guided reading interventions in comparison to the district endorsed use of flashcard drill and practice to improve struggling fifth and sixth grade readers' word recognition, word knowledge, fluency and comprehension using 30 targeted words from Fry's Instant 1000 Words List. I approached the study with the hypothesis that word mapping would provide the most benefits for closing the vocabulary gap that this population often displays. Effectiveness was measured by five different pre- and post- instruments: the Gates-MacGintie Reading Assessment's vocabulary and comprehension tests, a word recognition instrument, a sentence closure instrument, a one-minute read, and a post intervention word usage instrument. With the exception of the word usage measure, statistical analysis (ANCOVAs and Correlated t-tests) was used to analyze the data.

My hypothesis predicted the word mapping group would be the most effective method to improve these skills by building schema and connections to the word. My findings surprised me, especially the effectiveness of the flashcard/control group that was found to result in a statistically significant improvement on four of the measures, though it resulted in a statistically significant decline in the other measure. It is worth examining what elements of this treatment would have led to this result.

My first argument that pointed to the use of flashcards as being ineffective for struggling adolescents was that teachers have been using this technique since they first started to learn to read and the students have not been successful. Nist and Joseph (2008) have shown in their study of first grade students that flashcards are effective for learning word recognition and generalizing the recognition of the words in text. My study

confirms their results of the technique for improving word recognition with adolescent struggling students. But what could have led the flashcard/control group to have statistically significant improvements in measure for which the other two treatments did not. factors make flashcards more effective than the other interventions in comparison? Why did the control group improve their word recognition and comprehension skills but not their fluency skills? In order to understand this, it is necessary to look more deeply at the technique.

When using flashcard drill and practice, students were shown the word during an instructional period. They usually worked with a paraprofessional in a one-on-one situation, making the instructional period very personal and focused and allowing for explicit instruction, Manset-Williamson and Nelson's (2005) study of adolescent students confirmed that the degree of explicitness during instruction determined the amount of gains the students made.

During flashcard drill and practice, the goal of the drill was to identify specific words that the student cannot read in a quick and accurate manner and target those words for learning. This made flashcard drill an explicit activity when it came to word recognition in isolation. It did not always provide explicit instruction in the meaning of the word, nor did it provide the opportunity to read the word in context. Sometimes these skills became implicit and incidental to learning. The paraprofessionals often provided opportunities to use the word in an oral sentence when the child did not know the specific word. Flashcard drill is not as simplistic as it seems. In some instances teachers flashed the cards without providing a verbal example and in other instances teachers provided verbal sentences or meanings to provide a connection to schema. It should also be noted that one cannot assume that students do not have a schema for words that they are unable to read. Sometimes, the student may have heard the word, understood it verbally and

can use it while talking. In this case, learning to read the word makes the connection to schema for them.

During the drill and practice, flashcards showing the targeted word were shown to the student during repeated sessions until they were able to name the word to mastery. This indicates that the student received opportunities for repetition until the word was learned. During the guided reading and word mapping treatments, repeated opportunities to see and practice the word were part of the design because recent research (Beck, McKeown, Kucan, 2000; Berends, 2006) suggested that repetition is an effective method for learning words. Repetition was not part of the flashcard design because the treatment was left up to the paraprofessional; however, the repetition was a natural part of the design if the child did not recognize the word. One paraprofessional actually included three repetitions of all the flashcards in her treatment while the second one did not. The repetition may have allowed students to develop a consciousness of the word, allowing them to take ownership of additional vocabulary (Marzano, 2004) which is essential to learning. When students viewed the flashcard often enough and began to realize the written symbol was connected to a meaning they were familiar with, they began to develop a for that vocabulary word. It began to become connected to other schema and a meaning was developed, thus allowing the pattern of written symbols to take on an identity.

Unlike the other interventions, flashcard drill and practice allowed the student to replace cards, once mastered, with new words to master. This allowed the student to determine how they progressed through the list in a given period by being successful in fewer than four sessions. It also allowed the student to spend more time with the difficult words, if they did not master them in four sessions. They kept that flashcard in their target pack until it was mastered. Again, this was important to give the student ownership and responsibility for their pace of learning. The word mapping and guided

reading interventions only allowed the students to progress at the rate that was set, four days of repetition and practice. The students who already knew the targeted word had to spend time focusing on the word instead of progressing through the list, minimizing the number of words studied during that intervention. Students' exposure to additional words may have resulted in the statistically significant improvement in performance on both Gates tests.

Since the vocabulary used in this study was categorized as high frequency, words that are common to text and speech, once the students had the ability to recognize the word, they probably had multiple opportunities to see and hear it in context, outside the intervention time frame, which allowed them to connect the meaning incidentally. Incidental word knowledge through social experience and text is the most common way children increase their vocabulary knowledge (Beck & McKeown, 1996). Generalizing the knowledge of these words into text would lead to improved comprehension. The use of repeated phrases with embedded meanings was shown by Tan and Nicholson (1997) to improve comprehension of poor readers. Although flashcard drill did not provide repeated phrases with embedded meanings in its framework, Nist and Joseph (2008) indicated in their study that during the instructional period of the flashcard drill, the instructor will often model the word and provide a sentence or meaning to words that are known to the reader, which proved to be the case with difficult vocabulary in both flashcard groups. This incidental act becomes a vehicle through which the student is provided with knowledge about the word. The number of exposures to the incidental learning is not consistent from word to word or instructor to instructor. Further study of the actual methods of flashcard instruction within the district could be studied and guidelines for providing such opportunities could be shared with the instructors to provide a more standardized manner of delivering word knowledge information.

One disadvantage of flashcard drill and practice is that the words were presented in isolation. It was only through incidental experiences during other reading experiences that students saw the word in context. There was no opportunity for repeated, explicit instruction designed to present the vocabulary in reading passages or in contextual material. Phrase-like text or opportunities to read words in chunks is necessary for the student to learn to read fluently according to Rasinski (1987). Aulls (1977) demonstrated that struggling readers did not develop the ability to read in phrases as quickly as non struggling readers. Since flashcards did not provide written contextual and phrasing opportunities, the lack of these elements during instruction may be one disadvantage of flashcard drill and could be related to the cause of the negative performance results as measured in the statistical analysis in the area of fluency.

Although the post hoc test did not show a significant difference between the word mapping and guided reading groups in fluency, there were commonalities and differences in each treatment that should be noted. Both groups had the opportunity to see and read the targeted words in context. This guided reading group had opportunities to learn the words and had repeated practice reading contextual passages. They also had the opportunity to have the passage modeled by the teacher when the passage was too difficult for them to read independently. This not only provided the group with practice with the target words, but it included opportunities to hear and practice prosody skills and reading rate. This provided numerous opportunities for repeated reading of the a written passage, which according to Rasinski (2003) is a key element of improving fluency. The word mapping group had the opportunity to write their own sentences, giving them the experience of writing and visualizing the word in context. They practiced reading and sharing their sentences, which provided repeated experiences with the word. Again, they had repeated opportunities to see the word in context. It is also important to note the difference between the small group treatment group instruction of the word mapping and

guided reading and the individual, one-on-one, instruction that was provided to the flashcard students. When students receive individual instruction, there are many benefits to the student. One benefit might be the motivation and attention factor that the student receives, provides the student more opportunity to focus on the activity and not drift away from the instruction without the instructor noticing. This is especially important for some Attention Deficit Disorder (ADD) students. The individual attention also allows the instructor to hone in on the individual needs and errors the student is making and adjust instruction accordingly. It is unfortunately, expensive and difficult for school districts to provide more individual instruction to the struggling reader.

The statistical analysis also indicated that there were significant effects on vocabulary knowledge, word recognition, and fluency in the word mapping and guided reading treatment groups at the post-tests. This indicated that both guided reading and word mapping groups made progress during the treatment period and these methods should not be overlooked as alternative means of instruction. When a student is having repeated failure of a word, it may become necessary to provide a supplemental instruction of the word to booster the flashcard learning. It may also be necessary to use a different method of support when the student can recognize the word, but is having difficulty with the meaning of the word. In these cases, word mapping can provide opportunities to explicitly instruct the student with the definition of the word and developing schema to connect to other known words. Guided reading activities can provide the student with additional fluency reading practice and highlighting of developing the meaning of the word in context and using context clues and an opportunity to understand what a reader's voice sounds like. It should be recognized, that one method is not always the best answer for students of this population. Different methods tap different learning styles and can be more successful than others. This emphasizes the importance of knowing each student as an individual and thinking about their individual learning styles.

It is interesting to note that the only group that had significant differences on the norm-referenced Gates-McGinitie general comprehension measure was the control/flashcard group. However, all groups had significant differences in their performance on the sentence closure measure, which specifically measured the word knowledge of the targeted words.

Guided reading and the control group scored an identically while the word mapping scored a slightly higher mean in sentence usage. I wondered if analysis of the actual sentences for grammatical patterns, sentence length, and general writing level was also similar for each group or if each group had developed their own writing patterns. I found this to be a relevant question to ask because each intervention approached the word usage in a different way. This could have provided each group with different advantages to developing the student's ability to use the word productively and moving the word from a stage 3 word to a stage 4 word. New ways to develop vocabulary movement from stage 3 to stage 4 words is an area that should be further investigated for ways to improve students' ability to increase their writing level.

The flashcard group showed significant gains in all areas with the exception of fluency when compared to the word mapping and guided reading. It is interesting to note that although fluency was not impacted, showing negative results between the pre- and post-tests, the group made positive gains in the Gates vocabulary and comprehension between the pre- and post-tests. The Gates was a timed test so reading rate was a factor in the results. The question is what caused the students improved on general knowledge tests and yet their fluency scores decreased. Although this was not looked at during the study, it is possible that one main factor of the improvement on the Gates tests could be attributed to the ten minutes of treatment in the word mapping and guided reading group that was used for focusing on high frequency words, was used implementing other instruction during the Power Hour time possibility implementing focused instruction on

general vocabulary and strategies to improve reading level words instead of high frequency words. It is not uncommon for the low groups to spend time reviewing vocabulary from the Core reading story and/or listening to the story on tape to provide the students with extra preparation for the Core reading group. The flashcard students did not receive the supplemental opportunities to repeated readings and practice reading the high frequency words in context. This could have had a direct effect on their fluency scores.

I realized the struggling adolescent reader is a unique population with various types of problems regarding closing the reading gap. Some students suffer from a lack of decoding skill abilities, others lack comprehension skills, which can often be related to their available reading vocabulary, and others need explicit instructions on how to develop schema or using a reader's voice when they read. It is a group that should be studied closer in the future. When trying to design an effective method of instruction to improve vocabulary knowledge, many factors have to be considered, such as whether there are decoding problems, comprehension problems or vocabulary differences than some of their peers. By identifying the precise area of need, instruction can be more effectively planned for each student. Repeated practice and opportunities to work through their challenges need to be addressed. Explicit learning opportunities need to be specific and repetitive to maximize their learning.

Challenges

There were some challenges that occurred in setting up this study that may have had some impact on the effectiveness. The first challenge was finding enough schools in the district that were willing to participate. I was able to get six out of nine elementary

schools to participate which limited my sampling size and my ability to randomly assign treatments to groups. The word mapping and guided reading treatments were limited to ten minutes during the scheduled Power Hour period, where the time on the flashcard treatment was up to the discretion of the instructor and not linked to an instructional period. The time and scheduling issue could have been an advantage or disadvantage to the flashcard group. The study was designed to have as little impact on Power Hour time as possible. It was expected to begin by the middle-end of September in order to conclude in time for the second marking period group changes. The planned eleven week schedule allowed one day a week for unexpected changes in the schedule. Unfortunately, as the study began to take shape, it became apparent that there were many more conflicts in schedules than I had anticipated. The conflicts resulted in turning an eleven week anticipated start to finish schedule into almost 31 weeks for some of the groups. This may have had some effect on the study, but the continuity of the interventions was preserved to the best of everyone's ability.

How the Study Relates to My Role as an Educator

Throughout my twenty-seven years of teaching special education students, spanning from the kindergarten to high school seniors in all areas of special education from mentally disabled to learning disabled, autistic and emotionally handicapped, I have always been interested in reaching struggling adolescent readers. I have always felt there has to be a way to teach them so they do not continue to fall behind in the learning gap and harvest the embarrassment that accompanies reading deficits. In this study, I

examined some approaches to helping these students at the point they seem to begin to give up on reading, fifth and sixth grade.

My role as a teacher has varied over the years. I have taught full-time classes; itinerant/resource room/pull out programs; cooperative push in programs and most recently as an itinerant reading specialist. In each role, I have tried to analyze what the reader is doing and what is blocking her from closing the learning gap. One conclusion I came to was that students were memorizing the high frequency word list even though they were not always aware of what the words meant. I also found that when they “mastered” the word, they were not able to apply their knowledge in general situations. My study, a closer look at this problem, has enlightened me in many ways.

One of the important parts of my present position is not only to work with struggling readers, but also to be a consultant to classroom teachers and provide them with support, information and suggestions for working with the struggling reader. The findings of the Gates Vocabulary Test, confirmed my belief that these students suffer from a large vocabulary gap when compared to their peers. Although the results in the study concentrated on improving high frequency word knowledge, the strong effect of improving word knowledge through instructional treatments indicates that vocabulary instruction will benefit these students. It may be in the form of introducing new words and connecting them to their meaning during repeated experiences or it may be in the form of more focused, structured vocabulary learning lessons. This is a result that is important to impress upon other teachers while I advise them on different ways to present vocabulary knowledge in a meaningful way.

To my surprise, the study indicated that the students that were in the control group, flashcard drill, made the most progress in word recognition, reading the words in isolation, when the pre- and post-test means were compared. All groups made some progress, which indicates the learning gap can be closed in small steps. The difference in scores were not significant, indicating a small effect among approaches, suggesting that some type of attention to the words will benefit closing the learning gap and fluency rate. No matter what approach, some element of vocabulary study should be made part of a remedial program for these students. Upon assessing the needs of the vocabulary different student, an appropriate approach could be chosen. The administration of a word recognition list could be used to identify students that can identify words, a sentence closure test would identify students that do not have enough vocabulary knowledge and a one minute read could be used to detect fluency and through recording of reading rate, prosody and recall questions. Word mapping may require the most amount of time but it may be best for the student with an extreme lack of vocabulary skills. Flashcard drill may fit most the students that require repeated drill for word recognition but has an idea of what the word means. Guided reading would be good for students who are ready to use context to determine the meaning of the word.

The study also suggests two questions that can be researched in the future. One question is whether instruction in vocabulary, not limited to high frequency words, would be more effective in closing the learning gap. The second is whether a longer period of the treatments would lead to focusing on more high frequency words and therefore be more effective in the long run.

During my interviews with teachers in the study, there was an overall consensus that they were surprised how difficult it was for the students to initially define and use the focus words. They expressed their surprise at how the students did improve as the study progressed. Many expressed their desire to continue using some type of instruction with the high frequency words to make them meaningful to the students. This suggests that in my role as a consultant, it is important to point impress upon classroom teachers the need to review high frequency word meanings with students and not to take it for granted that they have mastered the word that has previously been noted on the student's list as mastered.

Reading fluency was affected by both the guided reading approach and word mapping approach. This could have been because the students met the words in some form of context and had a consistent number of repeated experiences with the word. The control group did not necessarily have repeated successful experiences with the word and did not have the opportunity to read the words in context. This suggests that meeting the words in context is an important element of improving fluency skills. For me, this implies that in order to overcome the severe reading problems I work with, context and repeated experiences with words is essential. These students may master a reading skill today, but repeated experiences with the word are essential to their retention of the word knowledge. Occasional repetition and review should be part of any program for struggling readers. Adolescents have had experience with basic skills, whether it be decoding, comprehension or generalization of word recognition and phonics skills, in earlier grades and are unable to apply them. Repeated review of skills with varied

experiences of encountering the word, as presented in this study, seems to be an important element in improving their vocabulary skills.

The productive subtest indicated that many of the students were able to use the words in sentences at the end of the study. However, the examination of the sentences indicated that these below level readers were also below level writers. The word mapping group had experience writing sentences with the words and scored slightly above the other group on the productive measure of the test. Further research into the effectiveness of the use of writing under a structured lesson which uses the vocabulary words and provides direct feedback should be investigated to see if it not only improves the word knowledge, but also improves the level of writing. I intend to make this element part of my instruction with students in the future.

Word recognition was improved for all groups. There was no significance difference between the groups' pre- and post-test. Looking closer at the design of each treatment, word mapping provided the most differentiated experiences with the vocabulary word, developing a stronger schema of the word and therefore, making the recognition of the word stronger and faster. The flashcard drill provided the least ability to develop a schema of the word. This emphasizes the need for me to think about teaching students who need to develop a schema of vocabulary words in order for them to master recognition.

How the School District Can Benefit from the Study

At the present time, the school district makes use of teaching assistants and/or classroom teachers to review the high frequency words with students through the use of

flashcard drill. The number of times a student receives this practice varies widely depending on the amount of time available and the number of students that need this service. Some of the students are obviously responding to the flashcard drill; others are taking a long time to learn the words on the list. One of the purposes of this study was to investigate approaches that would make vocabulary instruction more meaningful, perhaps more time efficient and provide instruction that would be retained longer. The results of the study were inconclusive in many aspects. There was no one approach that appeared to be more significantly effective than the others.

The Gates-MacGinitie subtest did indicate many students were more than one year below level in vocabulary and comprehension. At the present time, the school district does not test the students with a standardized, norm-referenced test, so it is difficult to know how wide-spread the vocabulary and comprehension deficits are in the district. I would encourage the district to provide such testing at the beginning of the year to those students who are below benchmark on the PSSA test so that they can use the data to accurately assign vocabulary deficient students to an RTI group that focuses on vocabulary instruction along with other skills.

I would also recommend to the district that they provide training for the paraprofessionals in providing more structured and consistent instruction within the buildings and the district for those at risk and struggling students to maximize the schema development and word knowledge of words for which they are working towards word recognition. This instruction should encompass some type of reading the word in context as well as in isolation to improve fluency rates.

Fluency is the district's main focus to improve overall reading skills. As discussed in earlier chapters, the district focuses on reading rate and does not encourage accurate prosody when measuring fluency. Instruction in word knowledge should lead to more prosody and comprehension because it demonstrates that the student is making meaning out of what he is reading (Kleinman, 1979). Although this study did not measure prosody, it is an area that should be included on the inservice agenda. This will require some in-service training for teachers and paraprofessionals so they understand that prosody is the use of intonation, stress and rhythm which helps provide oral cues to the author's message for the child and provides the instructor with a method of predicting the child's comprehension of the written passage. During informal discussions with the teachers implementing the word mapping and guided reading, I explained the role of prosody. As the school year went on, the teachers began to recognize the connection between fluency and prosody. Further research can be done to examine the interaction of word knowledge on prosody and comprehension.

Sentence writing was examined as a post-test to the treatments. It was very apparent that these below level readers were also below level writers. The correlation of reading and writing skills should be examined further. In the meantime, the district should encourage more writing that is specific to the use of the high frequency words in order to emphasize these important words and provide the students the experience of using and seeing the words in context. Such writing exercises should be closely monitored by the teacher and provide feedback for expanding sentences that would increase the level of writing for these students.

What this Research Means to Me as a Researcher

As a novice researcher, the implementation of this study has opened my mind to the value of research and the need for research in many areas of reading. As I pursued this study, I found myself asking questions and thinking about how I could use cases I was working with as subjects for different studies. I found my world opening up to the world of research. All of a sudden I found new ideas, new questions, new situations that could be researched either quantitatively or qualitatively. Finding a research question and refining it into a study seemed like an impossible task when I began this project. I could not imagine coordinating and managing a study until I actually did it. I now find myself thinking about how other studies can be done.

As a teacher, I found the research experience to be meaningful. I found myself not taking everything that I do for granted and analyzing the common elements of teaching students to find if they were meaningful. In the past I have made assumptions about learning and just acted upon them. In this study, I assumed that students did not retain the words from the high frequency list and they did not know what the words meant. I assumed that this led to their poor fluency and weak comprehension. In the study, I found that this may not be as widespread as I assumed. Through diagnostic testing, I gained more information about the students and their reading problems. In general, I learned not to assume things without backing the information with evidence. I will be a much more evidence-, research-minded teacher.

In respect to becoming a researcher, my biggest lesson was that the study does not always get implemented as planned. There are problems that arise because we are

examining the real world of schools, with many interruptions and unexpected circumstances. In order to minimize these interruptions, the researcher has to be flexible and creative to keep the study as balanced and true to the plan as possible.

Overall, I learned that I really enjoyed the world of research. I became intrigued with examining the results of my research and finding out that what appears one way when looking at it as it appears, changes and takes on new meaning when statistical tests are run and a whole new light is shown on the results. When I first looked at the raw data, the control group appeared to gain more knowledge and growth than the word mapping and guided reading groups did, but when we ran the adjusted means, the picture changed and word mapping appeared to have the highest scores in most of the categories. It also surprised me to find there was no significant difference between the results. I had to interpret these results and form an opinion of their meaning. I realized that for the group of struggling adolescent readers, there is probably no single approach that will significantly improve their reading skills, but a combination of approaches should be used and analyzed for individual results because what is meaningful for one student, may not be meaningful for another student. One cannot assume there is one general way to teach these students. Each struggling student needs to be assessed individually, and if one approach does not work, try another approach.

Research is the foundation to effective teaching. Teaching is an art that should be guided and influenced by new findings and studies in the field of education. It takes a long time for findings to trickle down to the field of teaching, so it is important to stay on the cutting edge of research by reading professional publications that report on the most

recent studies in the field. Through the consistent reading of research articles, the educator can make decisions based on their knowledge and the field tested findings.

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APPENDICES

APPENDIX A**WORD RECOGNITION PRE-**

___ continued	___ interest
___ similar	___ solution
___ molecules	___ consider
___ century	___ property
___ represent	___ Japanese
___ already	___ factories
___ elements	___ probably
___ division	___ various
___ located	___ natural
___ important	___ suggested
___ separate	___ remember
___ different	___ president
___ indicate	___ paragraph
___ direction	___ industry
___ carefully	___ suddenly

WORD RECOGNITION POST-TEST

- | | |
|---------------|---------------|
| ___ century | ___ solution |
| ___ remember | ___ industry |
| ___ property | ___ important |
| ___ division | ___ molecules |
| ___ continued | ___ natural |
| ___ various | ___ separate |
| ___ located | ___ consider |
| ___ Japanese | ___ president |
| ___ suggested | ___ remember |
| ___ factories | ___ indicate |
| ___ similar | ___ different |
| ___ direction | ___ probably |
| ___ separate | ___ paragraph |
| ___ carefully | ___ interest |
| ___ represent | ___ already |

APPENDIX B**SENTENCE CLOZE PRE-TEST**

1. The old man was 100 years old. He has lived a _____.
 - a) center
 - b) decade
 - c) sentry
 - d) century

2. Please _____ the paper and plastic bottles into different boxes for recycling.
 - a) replace
 - b) separate
 - c) combine
 - d) serenade

3. The accident occurred _____ when the dog ran into the road.
 - a) strangely
 - b) weekly
 - c) suddenly
 - d) often

4. The teacher _____ a different word be used in my essay.
 - a) suggested
 - b) congested
 - c) imported
 - d) told

5. The test will _____ be on Thursday unless we are not finished the unit.
 - a) probe
 - b) already
 - c) consider
 - d) probably

6. _____ to bring your math book to class.
- a) Forget
 - b) Locate
 - c) Represent
 - d) Remember
7. The different story _____ are the plot, the setting and the characters.
- a) words
 - b) elements
 - c) illustrations
 - d) probably
8. When you visit Japan, you will see many _____ customs.
- a) American
 - b) Jamaican
 - c) Japanese
 - d) Spanish
9. How many _____ combinations can you make?
- a) property
 - b) different
 - c) carefully
 - d) differences
10. The sign, +, can _____ addition.
- a) represent
 - b) direct
 - c) relay
 - d) presents
11. Mary had _____ finished her work when the bell rang.
- a) separately
 - b) already
 - c) already
 - d) continued

12. You need to _____ what you want from the lunch menu.
- a) industry
 - b) forget
 - c) indicate
 - d) comment
13. Do not damage the _____ of another person
- a) harm
 - b) probably
 - c) direct
 - d) property
14. It is _____ to know your phone number.
- a) forgettable
 - b) dangerous
 - c) import
 - d) important
15. Many goods are made in _____ to sell at the market.
- a) supermarket
 - b) beaches
 - c) factors
 - d) factories
16. When two shoes are alike , they are _____.
- a) similar
 - b) synonyms
 - c) natural
 - d) different
17. We need to find a _____ to the problem.
- a) division
 - b) separate
 - c) solution
 - d) represent

18. I _____ you my friend.
- a) similar
 - b) suggested
 - c) consider
 - d) century
19. The _____ of the classes was done to make sure there were equal numbers of team members on each team for Field Day.
- a) elements
 - b) teachers
 - c) division
 - d) elephant
20. You need to start your essay with a good opening _____.
- a) word
 - b) synonym
 - c) paragraph
 - d) parasail
21. It is _____ for a bird to build a nest.
- a) careful
 - b) variety
 - c) natural
 - d) nature
22. The police _____ the missing girl.
- a) located
 - b) licensed
 - c) nationalized
 - d) after
23. When you like something, you show an _____ in it.
- a) inspect
 - b) interest
 - c) dislike
 - d) represent

24. The glass can break, so handle it _____.
- a) care
 - b) carefully
 - c) carelessly
 - d) continued
25. We did not finish the story yesterday, so we _____ it today.
- a) stopped
 - b) carefully
 - c) continued
 - d) listened
26. We read _____ books on space, in order to research our projects.
- a) property
 - b) pretty
 - c) various
 - d) natural
27. Can you tell me the _____ the man went?
- a) division
 - b) school
 - c) direction
 - d) separate
28. The automobile _____ makes many different cars.
- a) property
 - b) already
 - c) industry
 - d) buyer
29. Who is the _____ of the United States?
- a) present
 - b) represent
 - c) important
 - d) president

30. In science we studied about _____ when we talked about atoms.
- a) factories
 - b) moles
 - c) molecules
 - d) weights

SENTENCE CLOZE POST-TEST

1. Would you _____ taking the job?
 - a) similar
 - b) suggested
 - c) consider
 - d) century

2. The smallest part of something is a _____.
 - a) factories
 - b) moles
 - c) molecule
 - d) weights

3. Sara picked out two _____ dresses to wear to the dance.
 - a) property
 - b) different
 - c) carefully
 - d) differences

4. My friend has a _____ phone that looks like mine.
 - a) similar
 - b) synonyms
 - c) natural
 - d) different

5. The weather man said it _____ rain all day.
 - a) stopped
 - b) counted
 - c) continued
 - d) listened

6. Read the first _____ of the story to get the main idea.
 - a) word
 - b) synonym
 - c) paragraph
 - d) parasail

7. One of the school rules is to respect the _____ of others.
- a) harm
 - b) probably
 - c) direction
 - d) property
8. Listen carefully for to the teacher's _____ during a fire drill?
- a) division
 - b) school
 - c) direction
 - d) separate
9. The salesman put the boxes in two _____ bags.
- a) replace
 - b) separate
 - c) combine
 - d) serenade
10. _____ produces many different things.
- a) Property
 - b) Industrial
 - c) Industry
 - d) Buyer
11. Chances are good that this is _____ the correct key.
- a) probe
 - b) already
 - c) consider
 - d) probably
12. Food from Japan, is served in a _____ restaurant.
- a) American
 - b) Jamaican
 - c) Japanese
 - d) Spanish

13. Mother had _____ cooked dinner before we came home.
- a) separately
 - b) allready
 - c) already
 - d) continued
14. The _____ in the area make many goods to be sold all over the world.
- a) supermarket
 - b) beaches
 - c) factors
 - d) factories
15. You need to _____ which is the correct answer.
- a) industry
 - b) forget
 - c) indicate
 - d) comment
16. We _____ taking sun block to the beach.
- a) suggested
 - b) congested
 - c) imported
 - d) told
17. The statue is fragile, so pack it _____.
- a) care
 - b) carefully
 - c) carelessly
 - d) continued
18. You need to _____ your times tables.
- a) forgive
 - b) locate
 - c) represent
 - d) remember

19. I have an _____ message for you.
- a) forgettable
 - b) dangerous
 - c) import
 - d) important
20. What are the major _____ of the weather?
- a) words
 - b) elements
 - c) illustrations
 - d) probably
21. Jason will _____ our views at the meeting.
- a) represent
 - b) direct
 - c) relay
 - d) present
22. I love finding the _____ to the crossword puzzle.
- a) division
 - b) separate
 - c) solution
 - d) represent
23. The sales _____ of the company increased their sales this month.
- a) elements
 - b) teacher
 - c) division
 - d) elephant
24. The museum had a vase that was from the civil war. It was over a _____ old.
- a) center
 - b) decade
 - c) sentry
 - d) century

25. It is fun to watch the _____ habits of squirrels.
- a) careful
 - b) variety
 - c) natural
 - d) nature
26. We _____ the information on the computer.
- a) located
 - b) licensed
 - c) nationalized
 - d) after
27. We had _____ ideas of where to go for vacation.
- a) property
 - b) pretty
 - c) various
 - d) single
28. I collect carousel horses because I have a special _____ in them.
- a) inspect
 - b) interest
 - c) dislike
 - d) represent
29. The _____ of the company reported the company was growing.
- a) present
 - b) represent
 - c) important
 - d) president
30. Yesterday, Jose tiptoed up on Kathy and _____ scared her.
- a) strange
 - b) weekly
 - c) suddenly
 - d) often

APPENDIX C**FINAL 1-MINUTE READ**

Jason's father noticed that Jason took an interest in the special effects in movies. He saw how Jason carefully watched the movie trying to figure out how the natural looking scenes were made by the special effects industry.

Jason's father took Jason to the library to get books on the subject. They located the section where special effects in movies were kept. Jason had to consider which books he wanted to take home. Jason found how similar scenes were made and the solution to many of his questions.

He read a paragraph about what movie makers used to show the division of molecules in a sci-fi movie. He continued to read the next paragraph. He found out the president of the movie company helped in the direction of the movie.

Jason enjoyed reading the books. He told his friends about them. They started a club. They shared their information. They learned a lot about how movies are made.

APPENDIX D
WORD USAGE ASSESSMENT

Student _____

Use each of the following words in a sentence that reflects the meaning of the word.

Example: hat: The man wore a hat to protect his head from the cold.

1. **different:** _____

2. **interest:** _____

3. **similar:** _____

4. **factories:** _____

5. **president:** _____

6. **probably:** _____

7. **continued:** _____

8. **division:** _____

9. **direction:** _____

10. **represent** _____

APPENDIX E**FRY'S UNIT LISTS**

Week 1	Week 2	Week 3
century	remember	already
separate	elements	indicate
suddenly	Japanese	property
suggested	different	important
probably	represent	factories
Week 4	Week 5	Week 6
similar	natural	various
solution	located	direction
consider	interest	industry
division	carefully	president
paragraph	continued	molecules

APPENDIX F**FRY GUIDED READING PASSAGES: UNIT 1, PASSAGE 1****Flesch-Kincaid Grade Level: 4.5**

Purpose: to look for the meaning of: suddenly, suggested, separated, probably and century

The Kelly twins liked exploring new places. One day, when they were out running through the hills, Sam stopped so **suddenly** that he almost fell down. He pointed to what looked like a cave. “What should we do?” asked Tommy. Sam **suggested** that they could explore the cave. “We need a flashlight to see where we are going and rope to help us climb around safely,” Tommy said. The boys decided to return the next day.

When Sam and Tommy returned, they decided they should stay together because getting **separated** could be dangerous. They went into the cave and found some artifacts that were **probably** left by some old explorers. Tommy looked at the artifacts carefully. They seemed to look like something the Native Americans would have used. Sam thought they were at least a **century** old. The boys decided to take some of the items to the museum.

At the museum, the experts looked at the artifacts and agreed with Tommy. One expert agreed that they were at least a hundred years old, if not more. He told the boys the Native Americans used to live in the nearby caves.

Questions:

1. What clue tells you what a **century** is?
2. What does **probably** mean?

FRY GUIDED READING PASSAGES: UNIT 1, PASSAGE 2**Flesch-Kincaid Grade Level: 4.4**

Purpose: To discover how the author uses the words: separate, suggested, probably, century and suddenly

The automobile was first invented during the late 19th **Century**. It changed the way many people lived. At first cars were **probably** owned by the very rich. As the cars became popular, and cheaper, people started buying cars and entered the new age of transportation. People were **suddenly** able to travel longer distances. The roads suddenly began to get crowded. There were no rules about which side of the road the car could travel, so there were many accidents. Law makers **suggested** new laws that **separated** cars going in the opposite direction.

Today, we don't think about the days when cars were changing the way people live. We don't think about traffic laws or building better roads. Cars have become part of our lives.

Questions

1. How did the author help you figure out the meaning of separated?
2. What does suddenly mean?

FRY GUIDED READING PASSAGES: UNIT 1, PASSAGE 3**Flesch-Kincaid Grade Level: 4.2**

Purpose: What clues can you use to find the meaning of: separate, suddenly, suggested, century and probably.

One of the most famous homes in the United States is the White House. The White House is in Washington, DC and is the home of the country's president. It is **probably** one of the most visited sites in our country. The White House was designed by George Washington. His family never lived in it.

It did not look the same as it does today. During the War of 1812, the building was **suddenly** set on fire.

About a **century** ago, in 1902, the government gave money to repair the White House. A third floor was added to the building so the president's family could live **separate** from the offices and people that came to visit.

If you plan to take a trip to Washington, DC, it is **suggested** that you should plan to take a tour of it.

Questions:

1. What does suggested mean?
2. What suffix is the added to suggested?

FRY GUIDED READING PASSAGES: UNIT 1, PASSAGE 4**Flesch-Kincaid Grade Level: 4.1**

Purpose: How do the words: suddenly, separate, century, probably and suggested add meaning to the story?

Moving day was finally here. I was looking forward to moving into the new house but I **suddenly** realized I was going to miss my best friend Katie. Katie and I have been friends forever, we went through everything together—kindergarten, dance classes, and even tough times, like when her grandma died. It seemed like we knew each other for a **century**. We were never separated before.

I wasn't sure it was going to be easy going to **separate** schools next year. We had always been in the same class and did our homework together. I was sad leaving her behind; I thought I would **probably** never get to see her again. My mother asked me why I was so sad about leaving; she thought I was excited about the move. "I just thought about leaving Katie. I will probably never get to see her again," I replied. Mom reassured me it wasn't going to be the last time I ever saw Katie. She suggested we plan a weekend for Katie to come visit. I asked my mother if she could come to the shore with us this summer. She said that would be fun. I couldn't wait to tell Katie. I wanted to go tell her but the moving men were finished packing the moving van.

It was finally time for us to leave, which saddened me because I wasn't going to be able to say good-bye to Katie. Just as I was getting into the car, I looked down the street, remembering the good times I shared with Katie. "Stop the car," I yelled as I suddenly saw Katie running up the street. She had come to say good-bye. We talked

about going to the shore and how much we were going to miss each other. We promised to call each other every week.

Mom finally said it was time to leave. Katie gave me a hug and a special gift to remember her by. I wasn't feeling so sad anymore. I was excited about moving into our new house and planning the trip to the shore with Katie this summer.

Questions:

1. What does the word century mean?
2. What does the author mean by, "... we knew each other for a century?"

FRY GUIDED READING PASSAGES: UNIT 2, PASSAGE 1**Flesch-Kincaid Grade Level: 4.5**

Purpose: We are going to read today to find the meaning of the words: **elements, different, represents, Japanese and remember.**

If you visit the Philadelphia Art Museum, you will have the chance to see many different types of art. One of the exhibits is the **Japanese** Teahouse and Gardens. In the Japanese culture, serving tea has become an artistic ceremony. If you were able to see the tea ceremony, you will always **remember** it for its beauty and grace.

An average tea ceremony can take from three to five hours. The teahouse is usually located away from the living quarters. It has a garden for the guests to enjoy the beauty of nature before the ceremony. There are many **elements** or parts to the ceremony. Each element takes careful planning and execution. Some of the elements are the water, the fire, a tea bowl, tea whisk, tea cloth and tea scoop.

The water **represents** yin or the moon. The fire represents yang or the sun. There is a special jar of fresh water that represents purity and is only touched by the host. When the host is ready to begin the ceremony, she calls the guests to the teahouse using a gong or bell. The host goes through several **different** steps to make the tea and serve the guests.

This is a special event for the Japanese. It holds a lot of beauty, representing the different elements of nature. It is an event that is known worldwide.

Questions:

1. How does the author use the word **elements**?
2. What country or culture would a **Japanese** person come from?

FRY GUIDED READING PASSAGES: UNIT 2, PASSAGE 2**Flesch-Kincaid Grade Level: 3.8**

Purpose: Yesterday, we used the word elements to mean a part of something. Let's see what the meaning of elements is used in this story.

Mr. Sashi walked around the deck of the big ocean liner. He was on a journey from his home land, Japan to the United States. He hoped to be able to find a job when he got to San Francisco and save up enough money to bring his family to America. Mr. Sashi had heard how beautiful America was and always wanted to live there. His brother's family moved to America a year ago and he missed them.

As he walked around the ship, he could **remember** what Japan was like in typhoon season. He did not like living with the harsh **elements** of the weather during that season. It was always raining and very windy. The warm sun was a nice change from those harsh elements. He heard that California was usually sunny and warm. He would enjoy that. Life would be quite **different** in America than in Japan. He would remember and practice his **Japanese** customs, but he will learn new ones.

The trip across the ocean was a long one, but a memorable one. Mr. Sashi had met many people making the same journey. They represented many different countries and cultures. He had made many friends. Everyone was travelling to America for different reasons. Some were going to make a new life like Mr. Sashi, some were travelling to visit family and some were just coming to visit the United States.

His journey would come to an end tomorrow when the ship lands in San Francisco. His brother will be waiting to meet him. Mr. Sashi thought about his family

in Japan. He suddenly realized that his journey not only **represents** a new life for himself, but also for his family. As he ends one journey, he begins another one.

Questions:

- 1. What did the word elements mean in this story?**
- 2. What did the author mean by “his journey not only represents a new life...”?**

FRY GUIDED READING PASSAGES: UNIT 2, PASSAGE 3**Flesch-Kincaid Grade Level: 3.9**

Purpose: We are going to read today to find how the meaning of the words: **elements, different, represents, Japanese and remember are used today.**

It was a cold, stormy winter day. It had been snowing hard all night and had accumulated six inches of snow. It was a surprise when Jim woke up. He heard the radio announcer say that school was closed due to the snow. Jim thought it would be fun to go out to build a snowman, but his mother told him the weather was too harsh to go out until the storm passed. Jim was disappointed. What could he do to pass the time?

He really hoped the storm would be over quickly. He decided to call his friend Marty to see what Marty was doing. They both lived in the same apartment house, so maybe they could play together. Jim called Marty and they talked about **different** things they could do. Marty said, “Do you **remember** the time we played checkers? It was a lot of fun.” Jim replied, “I remember that; it really was fun. Let’s play checkers.” Marty went downstairs to Jim’s apartment. They played checkers for about an hour and then wondered what else they could do.

Jim’s mother told the boys she had found a book on Origami, the **Japanese** art of paper folding; perhaps they wanted to learn how to do Origami. Both boys agreed it sounded like fun and gave it a try. They had a lot of fun learning how to make many things by just folding paper in a certain way. They made houses, birds, horses, cups and Jim’s favorite-- bowls. They looked at the book for a while and found out that the Japanese culture uses many symbols to **represent** the **elements** of nature. They looked at many pictures of Japanese life.

The morning passed very quickly. Jim's mother surprised the boys by making pizza for lunch. Finally, after they ate lunch, they looked out the window. It had stopped snowing. They dressed for the snow by putting on their boots, jackets, hats and gloves and went outside to build a snowman. Both Jim and Marty had a fun day.

Questions:

1. How do symbols represent things?
2. What is the meaning of different?

FRY GUIDED READING PASSAGES: UNIT 2, PASSAGE 4**Flesch-Kincaid Grade Level: 4.6**

Purpose: Let's see if the words: different, elements, represents, remember and Japanese have any new meanings today?

The United States is home to many people from around the world. Every group brings many of their customs and foods to this country with them. Soon their foods are liked by other people.

Italian food, one of the favorite foods of Americans, comes from Italy. Pizza is eaten for lunch or dinner. Pasta is a **different** Italian dish that many people enjoy.

Chinese food comes from China. Their fried rice with chow mien is an American favorite. Many people **remember** having fun when they eat with chopsticks. A visit to a Chinese restaurant allows the customer to see many of the symbols that **represent** the connection the Chinese people have to nature.

A trip to a **Japanese** restaurant also allows the diner to enjoy the symbols of the **elements** of nature while eating sushi. Japanese food is also eaten with chopsticks.

Mexican food is enjoyed by many children and adults. One of the American favorites is tacos. Rice and beans are often side dishes that come with the tacos.

America is a lucky country. Many ethnic groups are represented in this country and food brings them all together.

Questions:

1. How was remember used in this story?
2. What suffix was added to represent in the last sentence of the story?

FRY GUIDED READING PASSAGES: UNIT 3, PASSAGE 1**Flesch-Kincaid Grade Level: 4.9**

Purpose: this week, we will read to find the meanings of: already, indicate, property, important and factories.

Everyday we use products that we buy in stores. When we go into the store, we notice that there are many of the same items on the shelf. Have you ever wondered how so many items can be made in such large amounts? In order to make so many products at one time, **factories** play an **important** role in the production process.

Factories are found all over the world. Each factory specializes in making special goods to be sold at the market. Some factories produce car parts, some produce food products, and others produce clothing. There are all kinds of factories.

Many factories use an assembly line to make the goods. That means that there are different sections doing different jobs. The first section or stations in a potato chip factory may clean the potatoes. The second station may peel the potatoes. The third station may take the **already** peeled potatoes and run them through a machine to slice them. The potatoes then move on to a machine that washes the potatoes and gets them ready for frying. When the potatoes are fried, a light may come on to **indicate** they are done. The chips are then moved along a conveyor belt to be salted or covered with spices. When the chips are done, machines package the goods and they are boxed for shipment.

Very often, the factory will have a large supply of boxes ready for shipment to the stores. In this case, they are put in warehouses on the company's

property or land for storage. Trucks or trains usually pick up the boxes and ship them to the market where they are sold to you.

Questions:

1. What are factories?
2. What does the word property mean in this passage?

FRY GUIDED READING PASSAGES: UNIT 3, PASSAGE 2**Flesch-Kincaid Grade Level: 4.9**

Purpose: To understand the meanings of: already, indicate, property, important and factories.

There are many places in Pennsylvania worth visiting. Many are free to visit and to see what happens in **factories**. Many factories can be toured and enjoyed while you learn how products are made.

In Easton, you can tour the Crayola crayon factory. You will see the process from melting wax to coloring wax and pouring the crayons, to putting labels on to **indicate** the name of the color and how they are boxed. It is a fun family outing where you can enjoy many activities right on the **property**.

Nottingham is the home of Herrs Snacks. It is here that you can see how potato chips and other snacks are made. The factory is open for free tours. At the end of the tour you can have fun trying free samples. The factory is **important** because many people from the area work there.

Already famous, York is the home of the famous Harley-Davidson motorcycle plant. Visitors see how the bikes are made, painted and roll tested before shipping. Sorry, no free samples here. Visiting factories can be a fun experience for families during summer vacation.

Questions:

1. What does the author mean by “already famous”?
2. How does a label indicate the name of the color?

FRY GUIDED READING PASSAGES: UNIT 3, PASSAGE 3**Flesch-Kincaid Grade Level: 4.2**

Purpose: To understand the meanings of: already, indicate, property, important and factories.

“Are we there yet?” Bonnie asked her mother. “We will be there in about an hour. I know it’s a long trip,” her mother responded. They had **already** been travelling for two hours. The trip to the mountains is always a long trip, but one well worth it, once they get there.

Bonnie thought about how far they had travelled. They had already passed the **factories** in the city, which indicated they were more than half way there. She thought about all the things that are made in factories. She thought about the people that worked in factories. She had learned about how **important** they were in school. Factories were responsible for producing many of the products we use every day.

Bonnie continued to look out the window. She was looking for other landmarks that would **indicate** they were getting closer to their **property** in the mountains. Her parents owned a large piece of property in the mountains; they owned the land and the house they lived in. The property had a stream that ran through it, which Bonnie enjoyed fishing in with her father. Bonnie thought about what she would do when she got to their house. First she was going to go into the field and pick some flowers. Then she would help her parents unpack the car. They had already done the grocery shopping before they left home, so they would be able to make lunch and go for a walk.

Bonnie waited for the car to slow down and turn onto a long dirt road. She knew that would indicate they were just about there. No sooner did she think about it, the car turned on the dirt road. Bonnie was excited now. She knew her long wait was over and she could begin her vacation.

Questions:

1. What does important mean?
2. What is the root word of indicated?

FRY GUIDED READING PASSAGES: UNIT 3, PASSAGE 4**Flesch-Kincaid Grade Level: 3.9**

Purpose: To understand the meanings of: already, indicate, property, important and factories.

Mr. Trally came home from work late almost every night. When he came home the family usually had **already** finished eating, so he cooked his own dinner and settled down for the evening news on TV. Mr. Trally looked forward to coming home and changing from his business suit to his jeans and t-shirt, his favorite shirt which read, “**Property** of Joe Trally.” He liked the shirt because it told people that the shirt belonged to him. Mr. Trally was very particular about what he ate for dinner.

This particular night, Mr. Trally was going to make steak, potatoes and carrots for dinner. He cooked the steak on the grill. It cooked for about fifteen minutes before he put the meat thermometer into the steak. The thermometer would **indicate** whether the meat was cooked to his liking or not. While the steak was cooking he cooked up the potatoes and carrots. Everything seemed to be ready at the same time. This was very **important** to Mr. Trally because he didn’t like his food getting cold while something else was still cooking.

After dinner Mr. Trally turned on the TV. He liked watching the Food Channel. Tonight they had a show about how different snacks were made in different **factories**. They showed the machinery and assembly lines that make M & Ms, cheese curls and pretzels. Mr. Trally found the show to be very interesting.

Questions:

1. What the difference is between indicate and indicated?
2. What does property mean in this story?

FRY GUIDED READING PASSAGES: UNIT 4, PASSAGE 1**Flesch-Kincaid Grade Level: 4.6**

Purpose: This week we will study the meanings of: **similar, solution, consider division and paragraph.** So as we read the stories, think about how these words are being used and what they mean.

Writing a report can be a hard job if you never wrote one before. First, you need to **consider** the topic you are going to write about. You need to find out information by reading various books. Then you can organize your thoughts and information. One **solution** to this task is to write an outline.

When your planning is done, you are ready to begin writing. Start with a beginning **paragraph.** This paragraph will tell the reader what your topic is.

The middle of the report will be two or three paragraphs that talk about the details of your topic. Each paragraph will begin with the main idea and add details in the next few sentences to allow the reader to get a picture of what you are talking about.

You will have to make a decision about the **division** of main ideas. Each new main idea should be a new paragraph. **Similar** information should be put together. When you have written about all the main ideas and details, you will want to write an ending paragraph that will let the reader know you are finished writing.

Questions:

1. What is a **paragraph**?
2. How is the word **division** used in this passage?

FRY GUIDED READING PASSAGES: UNIT 4, PASSAGE 2**Flesch-Kincaid Grade Level: 4.3**

Purpose: To read to find the meaning of: consider, division, similar, paragraph, and solution.

Ellen had a great day at school today. She got 100% on her spelling pre-test and she finished her computer project. She was able to play with her best friend after school, but the time had come. The moment she was not looking forward to - doing her math homework.

Ellen was in fifth grade and learning how to do **division**. She knew all her multiplication tables and learned how multiplication relates to division. She had 8 division problems to do and 2 word problems to do for homework. She was still a little confused about the steps of doing division. Ellen asked her mother for some help.

The first thing her mother told her was to **consider** looking in her math book for examples of **similar** problems to see how to solve the problem. Ellen did just that. She found a problem that looked like one she had to do and was able to follow the steps in her book to solve her example. That was not so hard, thought Ellen. She completed the rest of the division problems and was left with the two word problems.

Finding the **solution** for word problems was not so easy. First, she read the **paragraph** that told her that 56 children were going on a trip and the teacher wanted to make 8 groups. The problem asked how many children would be in each group. Ellen's mother told her the solution was similar to solving the division problems. She had to figure out what the division problem was first. Ellen thought for a while and realized she needed to divide 56 by 8 to find the answer. The answer was 7 because she

knew that 8 times 7 equal 56. She now understood how easy word problems could be. Ellen finished her homework in time to watch her favorite TV show. Ellen had a good day indeed.

Questions:

1. What does solution mean in this story?
2. What does consider mean in this story?

FRY GUIDED READING PASSAGES: UNIT 4, PASSAGE 3**Flesch-Kincaid Grade Level: 4.5**

Purpose: To read to find the meaning of: consider, division, similar, paragraph, and solution.

The Centers for Disease Control, also known as the CDC, help doctors find out about unusual diseases in the United States. When there are many people getting sick, they are called into action. After doing tests, they try to find the cause. If the diseases are **similar** to each other, they have a clue. When it is spreading fast, the Field Disease **Division** will find a **solution** to stop the disease from spreading and a way to treat the people that are already ill.

Many doctors work long hours to find the cause. They have to **consider** the good and the bad sides of any plan they make. They write a **paragraph** or two to tell the doctors what to do for their patients.

For many people, the CDC finds a plan for the people in time. Their hard work helps prevent the disease from making too many people ill.

Questions:

1. How does the author use the word **similar**?
2. How does the author use the word **division** differently than she did in the first passage when it meant a math operation?

FRY GUIDED READING PASSAGES: UNIT 4, PASSAGE 4**Flesch-Kincaid Grade Level: 4.4**

Purpose: To read to find the meaning of: consider, division, similar, paragraph, and solution.

Nicholas was a Philadelphia Phillies baseball fan. He loved watching the games on TV or listening to the games on the radio. He could remember some seasons when they did not play well and then he could remember the 2008 season when they won the National League **Division** title and went on to win the World Series.

It was the beginning the beginning of the 2009 season and he couldn't help but wonder if this season would be **similar** to last season when they won the championship. Nicholas was a good fan. He had Phillies shirts and hats; he had pictures of the Phillies on the walls of his bedroom. The only thing he was missing was a ticket stub from the game. He wondered if he would ever get to see a real game.

Nicholas ran down to breakfast one morning to check the morning sports section in the newspaper because he missed the end of the game the night before. He looked for the article about the game. He skimmed the article until he got to the **paragraph** that said the Phillies won. He was glad to read that news. Nicholas ate breakfast and got ready for school. Before he went to school, his father asked him if he would **consider** doing something special that night. Nicholas wanted to think about that. He would have an answer when he got home from school.

All day long, Nicholas thought about his father's question. He thought it would be nice to do something special with his dad. Dad told him to put on his Phillies shirt and hat and get ready to leave. They went for a ride in the car. His father stopped at

the Phillies ballpark and said this was the surprise. They were going to see a real live game.

Nicholas remembered to get the ticket stub. He had found the **solution** to completing his collection of pictures on his bedroom wall. Nicholas had fun at the game with his dad. It was an experience he will never forget.

Questions:

1. What does the word solution mean?
2. What does the word similar mean?

FRY GUIDED READING PASSAGES: UNIT 5, PASSAGE 1**Flesch-Kincaid Grade Level: 4.4**

Purpose: This week we will study the meanings of: natural, located, interest, carefully and continued. So as we read the stories, think about how these words are being used and what they mean.

The oldest national park in the United States is **located** in Arizona. The Grand Canyon is the deep, narrow valley of the Colorado River. It is considered to be one of the world's **natural** wonders. The south side of the Grand Canyon has the most popular view. You can see the colorful layers of earth that have been cut away by the river.

Visitors come from all over the world to see this sight. One has to look **carefully** over the edge of the Grand Canyon because it is a very long drop to the bottom. Some visitors take an **interest** in taking an all day donkey ride to the bottom.

It became a national monument in 1908. The sight **continued** to get visitors on a daily basis and became a national park in 1919. Today visitors can camp in the park or stay in one of their lodges to enjoy the beauty.

Questions:

1. What does natural mean?
2. What does carefully mean?

FRY GUIDED READING PASSAGES: UNIT 5, PASSAGE 2**Flesch-Kincaid Grade Level: 4.4**

Purpose: This week we will study the meanings of: natural, located, interest, carefully and continued.

Brian and Sara enjoyed going for hikes through the parks. They enjoyed looking at the plants and trees, watching for birds and other animals as they hiked the trails. There was always something new to see and discover. Every once and a while, they would stop and listen **carefully** to the sounds of the crickets and other animals. Their walks were always exciting.

One of the special trails they enjoyed hiking on was quite long, so they didn't take it too often. When they did, it was worth it. It was a steep trail that lead them right up to the top of a waterfall. This trail really kept their **interest**. There were many **natural** surprises **located** along the way. One special spot along the river trail was home to some beavers. They liked sitting and watching the beavers build a dam. It was very interesting to see how they could move and place the sticks along the wall they were building in the river.

After resting and watching the beavers, they **continued** along the trail and spotted chipmunks. Chipmunks were also fun to watch as they scattered amongst the leaves and climbed trees. Finally, Brian and Sara would reach the top of the trail. They would unpack their lunch and find a nice spot to watch the waterfalls flow over the rocks and into the river.

Brian and Sara made a hobby of hiking. They enjoyed the natural beauty of nature and the peace and quiet of hiking the trails.

Questions:

1. What does continued mean?
2. What's the difference in meanings between continued and continue?

FRY GUIDED READING PASSAGES: UNIT 5, PASSAGE 3**Flesch-Kincaid Grade Level: 4.7**

Purpose: This week we will study the meanings of: **natural, located, interest, carefully and continued.**

Skateboarding is a popular sport among young people. Jonathan was a **natural** at it. He was able to glide along the street with ease. He was able to ride the rail with no problem. As matter of fact, Jonathan could do almost anything he wanted to do on a skateboard.

Skateboarder Magazine was his favorite magazine. He read about other skateboarders, found out tips to do new tricks and learned about new types of skateboards. The magazine would keep his **interest** for hours.

When Jonathan learned about new tricks he would go to the skate park **located** just two blocks from his house. He would spend hours **carefully** practicing the new trick. At first, he would fall off his skateboard but he always got up and tried again. Jonathan **continued** to practice day after day until he got it right. Sometimes, Jonathan would stop his practice to help new skateboarders learn to ride. He enjoyed giving them tips and watching them learn new things.

Sometimes, Jonathan would enter skateboarding contests. Very often he would win or come close to winning the contest. Jonathan was good at what he did because he practiced so hard at the sport.

Questions:

1. What does **interest** mean?
2. What does **natural** mean? Is that what **natural** always means?

FRY GUIDED READING PASSAGES: UNIT 5, PASSAGE 4**Flesch-Kincaid Grade Level: 4.6**

Purpose: This week we will study the meanings of: natural, located, interest, carefully and continued.

The library was quiet and filled with books. Donna enjoyed the quiet of the library; she enjoyed all the books that were around her. It was one of her favorite places to spend a hot summer afternoon. Donna took an **interest** in learning how to make puppets. She was looking for a summer project.

She went to the computer and found the exact location of books on puppets. Donna **carefully** looked around the library to see where the books were **located**. She **continued** her search by looking on the shelves where the books would be found. She found two interesting books.

One book told her how to make puppets using recycled material. She thought she could easily find the materials at home, so she decided to check the book out. The second book showed her how to make puppets using **natural** materials like sticks and leaves. She thought this was cool but she didn't know where to find the materials. Donna put this book back.

When Donna got home with her book, she started to look for the materials to make her puppet. Her mother helped her find some of the things she needed. Donna got right to work and made her puppet. She thought she could make another one tomorrow and have a puppet show. Donna was quite happy with her summer project.

Questions

1. What does located mean?
2. How would location be different from located?

FRY GUIDED READING PASSAGES: UNIT 6, PASSAGE 1**Flesch-Kincaid Grade Level: 4.7**

Purpose: This week we will study the meanings of: **various, direction, industry, president and molecule.** So as we read the stories, think about how these words are being used and what they mean.

During an interview with the **president** of the Science Club at the high school, Jen asked, “What part of science do you find interesting?”

“I would have to say the **molecule**,” replied the president.

“What is a molecule?”

“It is the smallest part of a living or non-living thing. They are made of atoms put together. They make up everything people, plants or even stars.”

“Oh, do they move?”

“Yes, they are always moving in a different **direction**. Sometimes they are far apart, like in gases, they are closer together in liquids and very close to each other in solids.”

“What makes them so important?”

“**Industry** is always studying them so they can make **various** new products.”

“Wow, thanks for the interview.”

Question:

1. What is a **molecule**?
2. What does **direction** mean?

FRY GUIDED READING PASSAGES: UNIT 6, PASSAGE 2**Flesch-Kincaid Grade Level: 3.6**

Today we will study the meanings of: various, molecule, industry, president and direction.

It was raining for the third day in a row. Debbie and Matt were looking for something to do. “How about a game of Scrabble?” asked Matt. “That’s a good idea,” said Debbie, “We haven’t played that for a while.” Playing word games was always a favorite. It helped them learn how to improve their word skills, and learn about new words.

Matt set up the game. Debbie went first. Debbie had **various** choices for the first word to be put on the board. When her turn started, Matt turned the sand timer to make sure she went in a fair amount of time. Debbie thought carefully and put the word “scatter” on the board. When Matt and Debbie played, they always read the word out and told the definition or used the word in a sentence. “Scatter—the cat will scatter if you scare her.”

Now it was Matt’s turn. He looked at the board and in delight said, “**President**—the leader of our country is the president.” That’s 50 extra points for me because I used all my letters.” Debbie thought that was unfair but she knew she would have played the same word if she had the chance.

The game went on for awhile and the board was filling up fast. It was getting harder and harder to place the words on the board. It was Matt’s turn again and he was having a hard time. He looked at the timer and watched each **molecule** of sand go down. He was running out of time. Suddenly, he saw two possible words. He didn’t know what

direction to go. There was a y open and he quickly counted the points and said, “**Industry**—the business of making products.” He counted his points. He was leading Debbie. There were only two tiles left and the game was almost over.

In no time, Debbie used all the tiles she had in her hand and counted the points. It was a tied game. Debbie and Matt looked out the window and saw that it had stopped raining. They were now going to go outside to play.

Question:

1. What does various mean?
2. How does the author let you know what the meaning of president is?

FRY GUIDED READING PASSAGES: UNIT 6, PASSAGE 3**Flesch-Kincaid Grade Level: 4.6**

Today we will study the meanings of: president, molecule, industry, various and direction.

Water is probably the most important material on Earth. Without water, life would not be able to exist. Every living thing needs water. Water is made of two atoms of hydrogen and one atom of oxygen that come together to form 1 **molecule** of water. **Various** clumps of water molecules make water drops. Water is colorless and has no taste or smell.

Water is unique in that it is found in all three states of matter: a liquid, a solid (ice) and a gas (steam). Water freezes at 32 degrees and boils at 212 degrees.

Water helps to regulate air changes and temperature, so as our seasons change we notice gradual change in temperatures. Water also is important for life.

All living things are made up of water, some as much as 90% water. Our blood is made up of 83% water. Water also helps our bodies digest food, transport waste, and control body temperature.

Water is one of the oldest ways of producing power. The hydroelectric power **industry** makes use of water flowing in the **direction** of a dam. The water then spins blades that are connected to generators, which produce power. One of the most famous power producing dams is the Hoover Dam, named after **President** Hoover. Water is one of our most valuable resources.

Questions:

1. What does industry mean?
2. What does various mean?

FRY GUIDED READING PASSAGES: UNIT 6, PASSAGE 4**Flesch-Kincaid Grade Level: 3.6**

Today we will study the meanings of: president, molecule, industry, various and direction.

There were **various** e-mails waiting for Mrs. Roberts when she arrived in her office. Mrs. Roberts worked as a chemist in the medical **industry**. It was her job to test new medications for interactions with other drugs. The e-mail was from the **president** of her company.

Mrs. Roberts opened the e-mail from the president first. It had one **direction** for her. It directed her to check for interactions between the company's newest drug and drug X right away. This seemed very important. Mrs. Roberts checked the rest of her e-mail and then got right to work.

First she had to find out what the new drug was made of. She checked the records to find a drawing of the **molecule** of the new drug. She then checked the molecule drawing of drug X. She had to research the two drawings. She wanted to see if they could combine together and make a new molecule. She tried drawing various combinations of new molecules. She could not find any way the two drugs would combine together.

When she was finished examining the drawings, she went into the lab and did various tests on the drugs. Mrs. Roberts worked for three weeks on the task. She did not find any interaction with the drugs. Before writing a report to the president detailing what tests she did and the results, Mrs. Roberts consulted with her coworkers. They

agreed with her results and she sent a report to the president. She was now ready for a new project.

Questions:

- 1. Does president always mean the head of a country?**
- 2. What is it the head of in this passage?**
- 3. In the last story direction meant “a way to go.” What does it mean in this passage?**

APPENDIX G

WORD MAP

Definition	Sentence
Synonyms	Picture

A horizontal rounded rectangular box is positioned in the center of the page, overlapping the four quadrants of the word map grid.

APPENDIX H

Word Mapping Fidelity Checklist

	1	2	3	4	5	COMMENTS
	L o w				H i g h	
Day 1 Used allotted 10 minutes for interventions session						
Teacher introduced word visually and orally						
Teacher discussed meaning with students leading students to their ability to define the word						
Students wrote definitions in kid-friendly language						
Teacher checked the work by asking each child what the word means						
Day 2 Used allotted 10 minutes for interventions session						
Teacher asked students to read the targeted word and the kid-friendly definition						
Students wrote 1 sentence using each targeted word that reflects the meaning of the word						
Teacher had student read sentence orally to the group or teacher						
Day 3 Used allotted 10 minutes for interventions session						
Teacher asked students to read the targeted word and the kid-friendly definition						
Teacher helped group brainstorm synonyms for the targeted word						
Students wrote synonyms for the targeted words						
Teacher reviewed words and meanings						

Students drew a picture to depict the definition of the words						
Teacher gave students an opportunity to explain their pictures						

Guided Reading Fidelity Checklist

GROUP _____

WEEK _____ SESSION _____

	1	2	3	4	5	COMMENTS
	L o w				H i g h	
Used allotted 10 minutes for intervention session						
Teacher displayed words and stated the purpose of the lesson						
Teacher modeled reading story to students						
Teacher re-read story as students orally read along						
Students orally read story as group without teacher assistance						
Teacher used rovided questions to guide students' vocabulary knowledge of targeted words						