SOCIALLY MEDIATED VS. CONTEXTUALLY DRIVEN VOCABULARY STRATEGIES: WHICH ARE MOST EFFECTIVE?

by

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Title: SOCIALLY MEDIATED VS. CONTEXTUALLY DRIVEN VOCABULARY STRATEGIES: WHICH ARE MOST EFFECTIVE?

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Dr. Gerald Tindal

Results of the 2007 National Assessment of Educational Progress (NAEP) reported the need for improving reading comprehension, especially in the upper elementary and middle school grades. Because the field of vocabulary research evidenced the strong relationship between vocabulary knowledge and reading comprehension, the National Reading Panel (2000) recommended the inclusion of direct vocabulary instruction as a necessary component in a comprehensive reading program. The field of vocabulary research, however, lacks consensus on which strategies result in the most gains in vocabulary development and reading comprehension.

In this study, vocabulary development of students who learned word meanings through socially mediated strategies was contrasted with students who learned word meanings using contextually driven strategies. A total of 14 teachers of fifth grade students were randomly assigned to one of two treatment groups. The intervention group

taught the socially mediated strategies of semantic mapping and the Frayer model. The teachers in the comparison group taught contextual and morphemic analysis, both contextually driven strategies. The effects of these two types of vocabulary instruction were measured using three tests, two proximal researcher developed vocabulary assessments and the more distal Gates MacGinitie vocabulary assessment.

Results of this study revealed that while students in both groups made significant gains as measured by the more proximal measures, students taught through contextually driven strategies gained the most. On the distal measure only the students taught socially mediated strategies improved their performance.

This study adds to the field by confirming three prior findings. Direct vocabulary instruction improved students' vocabulary development. Instruction in contextually driven strategies improved students' vocabulary learning when the dependent measure assessed knowledge of taught words. Instruction in socially mediated strategies improved students' vocabulary development when the dependent measure assessed unknown words.

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In thanksgiving to God the Father and Jesus Christ

Dedicated to my loving husband, children and parents for their support and encouragement

In loving memory of Dr. Alan B. Curtis

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CHAPTER I

INTRODUCTION

The 2007 National Assessment of Educational Progress (NAEP; Lee, Grigg & Donahue, 2007) revealed gains in reading comprehension for students in fourth grade, however, showed only slight to no gains in eighth grade. Students in fourth grade performed higher in 2007 than in 1992 with the percentage of students at the basic level improving by five percentage points. Students at the proficient levels improved by thirteen percentage points. However, the eighth grade results showed only a small gain of two points for students at the basic level from 1992 to 2007 and no significant change in the percentage of students performing at the proficient and above levels. While the gap closed some between Black and White students at both grade levels, the gap between White and Hispanic students showed no significant change since 1992 for either fourth or eighth grade. Since 1992, the gap between students who qualified for reduced price lunch and those not eligible stayed the same for fourth grade, but widened by three points at eighth. The NAEP reading assessments measured students' skill in reading comprehension as a literary experience and for the purposes of gaining information and performing a task. These reported results of the 2007 NAEP evidenced the need for improving reading comprehension especially in the upper elementary and middle school grades.

For nearly a century, research has pointed to the importance of vocabulary development in reading achievement (National Reading Panel, 2002). Becker (1977) identified inadequate vocabulary knowledge as a factor contributing to the school failure

of disadvantaged children. The authors of The Report of the National Reading Panel (2002) contended, "the finding that vocabulary is strongly related to comprehension seems unchallenged" (p. 4). Their review of 50 studies revealed a relatively small number of studies dealing with a large number of variables. They identified specific implications for teaching vocabulary development. Direct instruction that included active engagement and task restructuring was recommended with repetition and multiple exposures to items in rich contexts. Because there was little evidence on which method or combinations of methods resulted in the most gains, the authors of this report recommended that vocabulary instruction not depend on a single method.

In an effort to address the need for improvement in reading performance the National Institute for Literacy published *Put Reading First (2001)* as a guide to the essential components of a comprehension reading program. This guide recommended the inclusion of vocabulary instruction as one of the five essential components of an effective reading program. Stahl and Fairbanks (1986) found effect sizes of .97 for vocabulary instruction on measures of reading comprehension when students read passages containing the words taught in their meta-analysis of twenty-six studies from 1932 to 1984. Additionally, they found significant, though slightly smaller effects on students' comprehension of passages not containing taught words. They concluded that "vocabulary instruction generally facilitates growth in reading comprehension on measures containing and not containing taught words" (p. 100).

In spite of close to a century of research documenting the strong connection between vocabulary knowledge and reading comprehension, examinations of classroom

practice revealed that teachers put very little emphasis on vocabulary learning (Blachowicz, Fisher & Ogle, 2006; Watts, 1995). Additionally, when both teachers and publishers focused on vocabulary instruction they employed methods not supported by empirical research as effective practice (Watts, 1995).

In my review of the most recent publications of five reading textbook programs recommended by the Oregon Department of Education as meeting their criteria for basal programs, I found the recommended publishers attempted to remedy this lack of effective vocabulary instruction evidenced in earlier studies. These publishers provided a plethora of vocabulary strategies for instruction that drew from the wide range of vocabulary research. The text offered 20-40 activities in the lesson plans for one week, more than a teacher could use in a week. Teachers with limited planning and instructional time were left to select which activities to implement for instruction. When a majority number in the field argued for comprehensive, integrated and school-wide approaches to vocabulary instruction that enabled students to become active word learners, these publishers included research based strategies, but without guidance as to which strategies provided the best systematic approach to improving both vocabulary knowledge and ultimately, reading proficiency.

There are two problems with leaving the selection to teachers. First, while individual teachers may be successful in developing such a program, the individual approach does not lead to a comprehensive and systematic school-wide approach (Blachowicz et al., 2006). Second, teachers would spend "considerable instructional time for what some consider a low return on investment of time" (Blachowicz et al., p. 41) due to lack of

understanding about which strategies could result in greater gains in word learning and comprehension. This study was designed to provide teachers with guidance on the selection of strategies in designing a systematic and comprehensive school-wide approach to vocabulary development.

The purpose of my study was to find out if fifth grade students learned more words when they participated in instructional strategies that enabled them to socially construct word meanings rather than utilize contextually driven strategies to learn word meanings for a specific context as measured on three vocabulary assessments. The findings from my study could provide guidance for teachers in selecting strategies for instruction that result in improved vocabulary development and reading comprehension. For this study, the teachers in the intervention group developed lessons and taught strategies for learning word meanings in a social context, while the contrast group taught vocabulary focusing only on independent word learning strategies for developing meanings of words in a specific context.

A large body of research evidenced that students learned more words and made greater gains in reading comprehension when they learned vocabulary through socially mediated strategies (Beck & McKeown, 1991; Blachowicz & Fisher, 2000; Blachowicz et al., 2006; Harmon, Hedrick & Fox, 2000; Stahl & Fairbanks, 1986). I hypothesized that students in my study would perform better on curriculum based vocabulary word tests and a general vocabulary test when they learned word meanings through socially mediated strategies.

CHAPTER II

LITERATURE REVIEW

The following review of the research in vocabulary development is presented in two sections. The first section *history of vocabulary research* briefly summarizes the history of empirical vocabulary research over the past 100 years. The second section *research to practice in vocabulary teaching* presents the empirical evidence in support of vocabulary instruction from two different views. One view argues that students learn the meanings of words through reading widely. The other view supports directly instructing students the meaning of words. The research that argues for a direct approach to vocabulary instruction is divided further into two distinct types of strategies.

History of Vocabulary Research

Since Thorndike's 1917 landmark study, *The Teacher Word Book*, researchers have been interested in the strong relationship between vocabulary knowledge and reading comprehension (Stahl & Fairbanks, 1986; Beck & McKeown, 1991). This historical view begins with a link to the early vocabulary research. However, the bulk of this review provides a more thorough review of the literature from the 1990's to the present documenting almost a century long interest in the relationship between vocabulary knowledge and reading comprehension. The current research focuses most on which methods should be employed to best develop vocabulary knowledge. This research centers around two different philosophies. Some researchers find students best develop vocabulary incidentally through wide reading, while others evidence gains in both

vocabulary and reading comprehension through strategies requiring direct vocabulary instruction.

Most of the research prior to 1990 focused on vocabulary size (Nagy & Anderson, 1984) and the connection between vocabulary knowledge and mental ability (Stahl & Fairbanks, 1986). While some research from 1990 to 2000 continued to focus on size of vocabulary and its relationship to incidental word learning (Goulden, Nation & Read, 1990; Zechmeister, Chronis, Cull, D'Anna & Healy, 1995), the field was shifting to issues related to vocabulary instruction. Some researchers continued studying which words were most useful and which words created a more readable text (Beck & McKeown, 1991). Others focused on direct vocabulary instruction (Beck, & McKeown, 1991; Beck, McKeown, & Kucan, 2002; Bos & Anders, 1990; Fukkink & de Glopper, 1998; Kuhn & Stahl, 1998; Lubliner & Smetana, 2005; Mason, Stahl, Au, and Herman, 2003; McKeown & Beck, 2004; Medo & Ryder, 1993). Across multiple studies and over 15 years the question of which instructional strategies result in the most gains in vocabulary knowledge and reading comprehension remained. Baumann, Kame'enui and Ash (2003) conducted a review of the literature assuming they would find a best method to teaching vocabulary, but while they found that vocabulary could be taught, "the superiority of one strategy over another could not be established" (p. 763).

Becker (1977) stimulated a debate about vocabulary size and vocabulary development that continues today (Beck, McKeown, & Kucan, 2002; Cunningham & Stanovich, 1997; Lubliner & Smetana, 2005; Mason, Stahl, Au, & Herman, 2003; McKeown & Beck, 2004; Nagy & Scott, 2000; Zechmeister et al., 1995). While the field

of vocabulary research revealed that we have learned much about vocabulary knowledge, there is an abundance we do not yet know. Baumann et al. (2003) said "we know too much to say we know too little, and we know too little to say we know enough" (p. 752).

Given the importance of vocabulary development in learning to comprehend written material evidenced in the literature, combined with the national charge to include vocabulary development in reading instructional programs, I wanted to learn if specific instructional strategies would result in the most gains in students' vocabulary knowledge and ultimately reading comprehension. My search revealed multiple studies in the past 15 years that pointed to the effectiveness of specific strategies for developing word knowledge. While some strategies required students to analyze words and texts, other strategies required collaborative construction of meaning. Though the field has not reached a consensus about which strategies were most effective, recent researchers argued for a rich instructional program of vocabulary development that integrated multiple strategies and required students to collaboratively construct meaning. The programs included the strategies used in this study, however, none of these studies contrasted results from these two types of strategies. It seemed important to learn if a particular type of similar strategies could produce greater gains than a program combining different types of strategies.

Research to Practice in Vocabulary Instruction

Wide reading and direct vocabulary instruction, two distinct philosophies about vocabulary instruction have been contested in the literature since the 1980s as the best approach to vocabulary development. The National Reading Panel (2002) described wide reading as indirect vocabulary instruction, where students acquired vocabulary knowledge incidentally by reading broadly. Wide reading relied on students learning the meaning of new vocabulary words incidentally as they read independently. *Direct vocabulary instruction* required a teacher to teach strategies for learning the meaning of new words both prior to and following reading. Directly teaching vocabulary is a direct approach to vocabulary development that includes two distinct types of instruction: contextually driven and socially mediated strategies. The National Reading Panel (2002) described contextually driven strategies as explicit instruction and refers to strategies focused on contextual and morphemic analysis. The National Reading Panel (2002) described socially mediated strategies as multi-media instruction and employs semantic mapping and other related strategies. Figure 1 provides a visual showing the how different types of vocabulary strategies are connected.

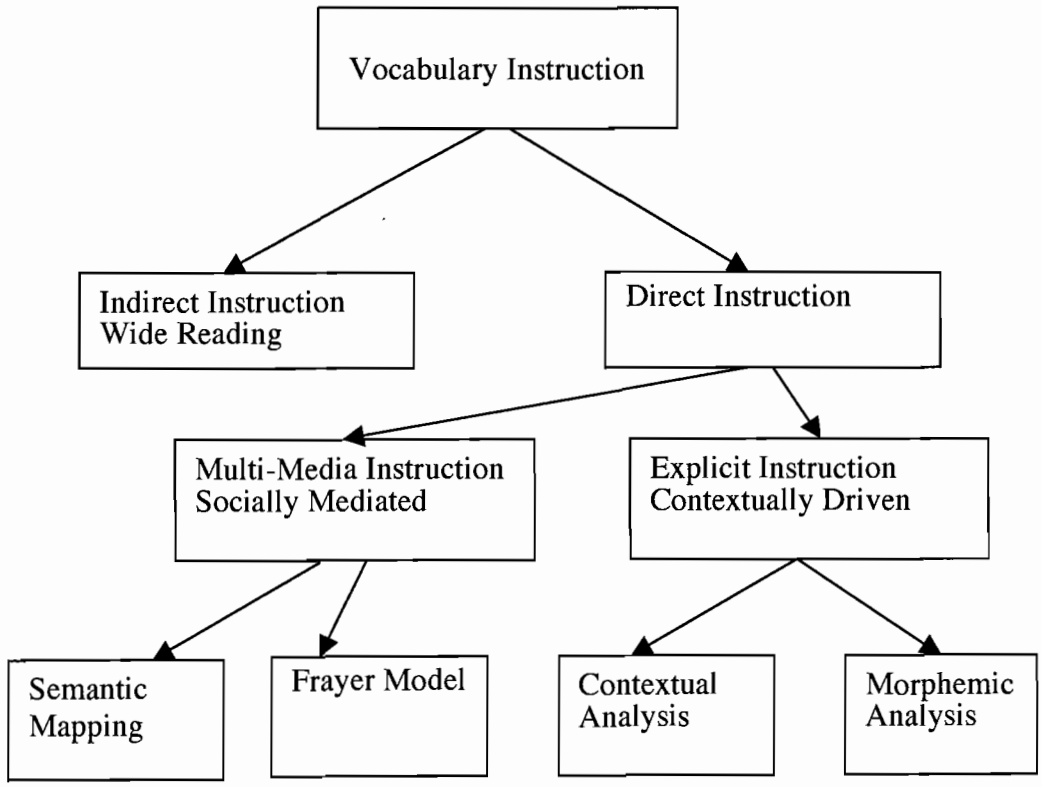

Figure 1. Vocabulary Instruction.

Wide Reading

The researchers studying wide reading as a strategy to develop students' vocabularies provided empirical evidence showing students learned incidentally by reading without explicit instruction (Nagy, Anderson & Herman, 1987). These researchers also contended that students could not learn enough words through direct instruction at a rate sufficient to increase their vocabulary (Nagy & Anderson, 1984; Nagy et al., 1987). In support of their hypothesis that children learned most new words incidentally from context while reading and listening, Nagy and Anderson (1984) offered the results of their study contending that students appeared to learn 3,000 new words each year. They estimated that there were 88,533 distinct word families in printed school English and that the wide range of estimates was due to different definitions for a word.

Nagy, Anderson and Herman (1987) studied incidental word learning from both narrative and expository texts during normal reading (independently reading text without prior vocabulary instruction) of 352 students in grade three, five and seven. In the study, all students read two of four texts at their grade level, but were tested on the target words from all four passages. Even with this one exposure to new words in the text, the results, though small, revealed that students "who read a text knew 3.3% more of the target words than those that had not read the text" (p. 254). These authors contended that their results supported the assertion that "regular, wide reading must be seen as the major avenue of large-scale, long-term vocabulary growth" (p. 266).

Nagy and Scott (2000) argued that students learned an average of 2,000 words through wide reading. Additionally, they argued that providing concentrated instruction

in developing word knowledge introduced two sets of difficulties. First, developing word meanings was complex and most teachers and students lacked understanding of the "the nature of word knowledge and reasonable expectations about the word learning process" (p. 280). Second, students in elementary school were still developing the metalinguistic knowledge (ability to reflect on their thought processes) necessary for vocabulary instructional activities and more research was needed on the "varying levels of metalinguistic awareness on children's ability to profit from different types of vocabulary instruction or from different types of information about words" (p. 280).

Though Nagy and Anderson's (1984) estimations of vocabulary size are referenced frequently in the literature supporting wide reading as opposed to direct instruction as support for the argument that there are too many words to teach directly, Baumann, Kame'enui and Ash (2003) found great variability in the field of vocabulary research on estimations of vocabulary size at each grade level depending on how it was measured. For example, researchers such as D'Anna, Zechmeister and Hall, (1991) and Zechmeister, Chronis, Cull, D'Anna and Healy, (1995) argued for a definition of vocabulary size expressed in terms of functionally important words. This definition dramatically reduced the estimates of vocabulary size and in turn the number of words that needed to be taught.

Because individual studies on incidental word learning failed to reveal significant results, Swanborn and de Glopper (1999) wondered if analyzing a group of studies together would reveal statistically significant results. These researchers analyzed 20 studies of incidental word learning during reading using a computer program VHLM to

estimate the random effects model. This meta-analysis revealed small gains, "a mean effect size of logit (p) = -1.70" (p. 276) which translated to a mean probability that students had only a 15% chance of learning new words incidentally from reading over long periods of time (Swanborn & de Glopper, 1999; Marzano, 2004).

Though the large estimates of vocabulary size made direct vocabulary instruction seem a daunting task, the lack of significant gains in vocabulary knowledge and reading comprehension resulting from incidental word learning failed to support the assertion that vocabulary development should be focused primarily on wide reading. Additionally, the alternate definition for vocabulary size provided by Zechmeister et al. (1995) provided in the next section supports the argument for directly teaching vocabulary development.

Directly Teaching Vocabulary

This part of the literature review presents first, the argument for a more direct approach to vocabulary instruction. Second, I present both the background for and the description of a general theory for vocabulary instruction that provided the framework for my study. Third, I provide the evidence for using social construction strategies over contextually driven strategies for vocabulary instruction that guided the development of my hypothesis.

Argument for Directly Teaching Vocabulary

Both researchers on the side of wide reading and those who supported explicit instruction framed their arguments around the estimates of vocabulary size. Nagy, Anderson and Herman (1987) recommended wide reading, as opposed to explicit instruction. They used the higher estimates of vocabulary size to argue that students

learned enough words incidentally through free reading and there were too many words to be taught directly. McKeown and Beck (2004) contended that the rate of learning words in context was slow and occurred in small increments. Some researchers used lower estimates for vocabulary size in arguing that explicit instruction was the best approach to vocabulary development, providing both empirical evidence for and detailed description of instructional strategies that improved both vocabulary knowledge and comprehension (Beck & McKeown, 1983; D'Anna et al., 1991; Goulden, Nation, & Read, 1990; Zechmeister et al., 1995). McKeown and Beck (2004) argued that directly teaching vocabulary played an important role in students' development and increased their vocabulary learning and comprehension.

General Theory for Vocabulary Instruction

Until recently, researchers offered two major hypotheses for thinking about the relationship between vocabulary instruction and reading comprehension: world knowledge and instrumentalist hypotheses. Anderson and Freebody (1981), as cited by Stahl, contended that the general aptitude and the general knowledge hypotheses were related to a third factor they labeled as intelligence or world knowledge. This world knowledge hypothesis supported vocabulary development strategies focused on semantic relatedness and background knowledge because building understanding required the learner to rely on what he already knows (Baumann et al., 2003). Beck and McKeown (1983) offered a program of *rich vocabulary instruction* focused primarily on semantic relatedness and semantic mapping with an additional focus on multiple encounters with a word. This program implemented long-term and intensively had positive effects on word

learning and comprehension (Baumann et al., 2003). The instrumentalist hypothesis causally linked word knowledge to reading comprehension. Word knowledge referred to in the instrumentalist view was most often linked to strategies for teaching morphemic and contextual analysis (Baumann, Edwards, Font, Tereshinski, Kame'enui, & Olejnik, 2002; Beck & McKeown, 1991; Blachowicz et al., 2006; Stahl & Fairbanks, 1986). Many researchers however, argued that very little research existed on the transfer effect of instruction in contextual and morphemic analysis to reading comprehension (Baumann et al.; Kuhn & Stahl, 1998). This information begs the question, why spend instructional time on contextual and morphemic analysis strategies when several studies (Beck & McKeown, 1991; Blachowicz & Fisher, 2000; Blachowicz et at.; Harmon & Hedrick, 2005; Stahl & Fairbanks, 1986) evidenced gains in both vocabulary knowledge and reading comprehension when teachers taught vocabulary knowledge using strategies linked to the world knowledge theory.

More recently, Blachowicz and Fisher (2000) offered four main principles as guidelines for a "general theory" (p. 504) of vocabulary instruction in which students: (a) actively developed their understanding of words, (b) personalized word learning, (c) immersed themselves in words, and (d) built on multiple sources of information through repeated exposures. While Blachowicz and Fisher were the only researchers to name this "general theory" for their principles, there was a great deal of crossover in the guiding principles and components offered by others. McKeown and Beck (2004) recommended engaging students in multiple strategies for deep processing and interacting with word meanings. Additionally, they recommended careful attention to selecting words for

instruction that students would encounter often and across domains, provided rich instruction that resulted in "deep and thorough word knowledge" (p. 17), taught context clues only through pedagogical contexts, and utilized both formal and informal opportunities for students to learn vocabulary. Baumann et al. (2003) recommended 10 principals for making global instructional decisions regarding vocabulary instruction focused on aligning decisions to the objectives. They identified three instructional objectives: (a) learn words independently, (b) learn the meanings of specific words, and (c) develop an appreciation for words, experiencing enjoyment and satisfaction in their use.

My study contrasted strategies linked to the instrumentalist theory with strategies taught by the intervention group linked to the world knowledge theory. However the intervention strategies engaged students in active construction of word meaning using multiple sources and repeated exposures all components of the general theory. Gains were measured using three vocabulary measures.

Two Types of Direct Vocabulary Instruction

In the literature that focused on strategies for direct instruction, two distinct types emerged. One set of strategies focused on the meaning of a word within the context of other words in a specific passage. These strategies included using contextual analysis, morphemic analysis, cognates and dictionary definitions for deciding on the meaning of a word within a passage. Contextual analysis required the reader to use the other words in the same passage to provide clues to the meaning of the unknown word in the particular context. Morphemic analysis required the reader to break words into word parts—base

words, prefixes and suffixes, and to know the meanings of the smaller parts. When students used cognates, they made connections to words with similar spellings, related meanings or words similar to words in a reader's native language. Using dictionary definitions required the reader to understand and apply the meaning of a word provided in a dictionary. Researchers showed that these strategies seemed to improve student learning of a given set of specific words (Brett, Rothlein & Hurley, 1996).

In contrast, another set of strategies enabled students to derive word meanings within a social context far beyond the specific passage containing the new word. Studies indicated growth in students' vocabulary of both the specific words and related words, as well as, improvement in reading comprehension when students participated in a vocabulary development program that focused on strategies that required students to construct the meaning of a word through making connections to background knowledge, engaging in discussions or role play, and developing semantic maps of the word, related words and feelings attached to the word (Beck & McKeown, 1991; Blachowicz & Fisher, 2000; Blachowicz et al., 2006; Harmon, Hedrick & Fox, 2000; Stahl & Fairbanks, 1986). When students socially constructed the meaning of a word they participated in cooperative activities that required them to explore and discuss the relationships between the new word and other words. First, they made connections to words they already knew. Then, they identified synonyms or antonyms, words that described the new word or argued for why a word was related in some way. Students drew a map showing these relationships, acted out the meaning or wrote passages revealing the multiple uses of a word.

Though studies in which students learned the meaning of words through contextually driven strategies showed some gains, studies where students learned the meanings of words through socially mediated strategies revealed greater gains. The findings from these studies guided the development of my hypothesis and the design of my study. In my study, the results of instruction using social construction strategies were compared to the results of instruction using contextually driven strategies.

Contextually Driven Strategies

Researchers who studied vocabulary from the perspective of the meaning of words within a particular context studied independent word learning strategies that included contextual analysis, morphemic analysis, cognates and dictionary definitions (Baumann et al., 2002; Nagy & Scott, 2000; Swanborn & de Glopper, 1999). In light of the frequent recommendations to teach students to use context clues, meta-analyses of studies that focused on deliberately teaching students to derive word meanings from contexts proved to be disappointing (Fukkink & de Glopper, 1998; Kuhn & Stahl, 1998).

Contextual analysis. While Fukkink and de Glopper (1998) found an effect size of .43 in their meta-analysis of 12 studies focused on deliberately teaching students to derive word meanings from contexts, they cautioned that the effective size of .43 after instruction could also be attributed to the difference that could be found after two years of natural growth. These authors recommended that future studies include larger sample sizes taking statistical power under consideration and that the design "evaluate the transfer of deriving word meaning to incidental word learning abilities" (p. 465). Kuhn and Stahl's (1998) review of 14 studies focusing on teaching students a list of context

clues or general strategies for using context to learn word meanings revealed that students learned to use the strategies, but the use of the strategies did not improve the learning of word meanings. Additionally, in studies that also included a practice group, the results were the same for both the treatment and practice groups.

Beck, McKeown, and McCaslin (1983) contended that when teaching vocabulary development through context, one must consider that text with "pedagogical contexts are specifically designed for teaching designated unknown words" (p. 178). Natural contexts, however, represent all the other contexts surrounding an unknown word. They are not written to teach meanings of words. Further, they identified four categories of texts on a continuum of effectiveness in assisting readers with learning target words in context. On one end, *misdirective* contexts actually guided students to the wrong meanings for target words (Beck et al., 1983). The next category provided no assistance in acquiring the meaning of the target words. The label for these contexts was *nondirective* contexts. Further along the continuum, *general* contexts only helped students place words in general categories. Finally, some texts were *directive* and provided some assistance to students in deriving the meaning of target words. Of the four, only the *directive* contexts actually assisted the student with learning the meaning of a new word in a passage. Using the context to derive meaning in the other three types of text was misleading and often confusing when the reader was trained to use the context to derive meaning. Because basal reading programs were using natural contexts to teach students reading, teaching students to derive the meanings of unknown words through contextual analysis was an unreliable process. Beck et al. (1983) recommended that

context vocabulary instruction should be approached only through pedagogical context and only as one part of the instruction. Additionally, while teaching about context clues through pedagogical context was the basis of context vocabulary instruction, careful attention must be paid to helping students understand that the meanings for words from context clues is not a reliable strategy for all words (Beck, McKeown, & Kucan, 2002).

Morphemic analysis. After 46 years of research on the effectiveness on vocabulary knowledge and reading comprehension of teaching students to break words into small parts a process called morphemic analysis, the evidence in support of this strategy was limited and little research existed about the transfer effects of "instruction in morphemic or contextual analysis to reading comprehension" (Baumann et al., 2002, p. 155). In the Baumann et al. study on the effects of instruction in morphemic and contextual analysis strategies on vocabulary knowledge and comprehension in fifth grade students revealed a strong immediate and delayed effect, but there was no evidence that this instruction improved students' comprehension of text even when the text contains words morphemically decipherable and rich in context.

Baumann et al. (2002) suggested at least three possible explanations for their findings. First, perhaps the transfer power of using morphemic elements or context clues alone, had limited influence on comprehension. Second, there existed a possibility that the vocabulary instruction and dependent comprehension measures did not match in that the comprehension measure required skills beyond those thought in the intervention strategy. Third, the duration and scope of the intervention may have needed to be increased to result in producing a transfer effect to reading comprehension. While this

study did not "support the extended instrumentalist hypothesis that teaching morphemic and contextual analysis strategies promotes vocabulary knowledge, which in turn, enhances reading comprehension" (Baumann et al., p. 170), more research was needed to rule out the possibility that morphemic and contextual analysis instruction be left out of vocabulary instruction. For this reason, I selected these two strategies for instruction in the comparison group of my study.

Socially Constructing Word Meaning

Beck et al. (2002) explained, students' contexts for learning new word meanings changes. First students learn words in oral contexts, then from written contexts. Learning words through written text becomes more complex without the advantage of body language, intonation and physical surroundings. These authors argued that direct vocabulary instruction included multiple encounters with eight to ten focus words each week and provided experiences with words students learned in previous weeks. Beyond the primary years direct instruction included *rich instruction* that provided students with opportunities for developing their own definitions, using the words, and exploring the many facets of word meanings and relationships. A strong vocabulary program included strategies for motivating students to hear, see or use words beyond the classroom. Vocabulary instruction for secondary students must focus "on exploration of complex dimensions of a word's meaning and the relationships that exist to other words along some of those dimensions" (p. 85). Additionally, instruction for older students should focus on why authors choose specific words and the role they play.

Studies in which students had multiple opportunities to develop semantic maps and diagrams with their peers revealed students achieved higher comprehension scores than control groups that employed other methods for learning word meanings (Bos & Anders, 1990; Lubliner & Smetana, 2005; Medo & Ryder, 1993). Medo and Ryder found that both average and high ability students who received text specific vocabulary instruction prior to reading achieved higher scores on a comprehension posttest of difficult expository text than students in the control group. Additionally, they found that the high ability group scored the highest. Working in pairs, students diagramed the relationships among four words from a passage, drew a semantic map of a related key word and after reading the text, were asked to write a summary paragraph about the key word.

Additionally, Bos and Anders (1990) learned that when students participated in written recalls one month after intervention, the students who constructed semantic maps scored significantly better on vocabulary conceptual understanding and a holistic rating. When the instructional strategy employed a relationship matrix the quality of long-term learning was higher than for students who participated in the definition instruction. These authors contended that for students with learning disabilities, instructional strategies for developing vocabulary that tapped into students' prior knowledge, enabled them to share knowledge, make and confirm predictions and facilitate both comprehension and long-term learning, which in turn further developed students' schemas (Bos & Anders, 1990).

McLaughlin et al. (2000) conducted a study in which students participated in a highly structured vocabulary program for 15 weeks in which students worked

collaboratively using strategies aimed at developing word concepts, connotations, and multiple word meanings for defined target words. Half of the participants were English Language Learner (ELL) students from Spanish-speaking backgrounds and half were English-only students. Both ELL and English-only students gained significantly in three vocabulary measures and a reading comprehension measure. In one year the ELL students in the intervention group outperformed their ELL peers in a control group in vocabulary knowledge and reading comprehension. Additionally, the ELL students closed the gap of one standard deviation between themselves and native English speakers by 50 percent. Students in this study were encouraged to construct word meaning using social construction strategies, another feature that informed the design of my study.

A large body of research pointed to the value of multiple opportunities for generating word meanings, developing relational understandings using strategies like semantic mapping, learning common and specialized meanings (Blachowicz & Fisher, 2000; Blachowicz et al.; Beck & McKeown, 1991; Stahl & Fairbanks, 1986), learning about the interrelationships among words, and connections between the words and students' background knowledge, and practice in using the meanings to perform tasks with the new words (Harmon, Hedrick & Fox, 2000). In their review of vocabulary research, Baumann et al. (2003) found evidence that students learned the meanings of new words and improved in passage reading comprehension when they used strategies that required students to cluster, label and make semantic relatedness connections. Active engagement was important in learning the meanings of specific words through semantic

relatedness strategies and for learners to become independent word learners, two important aspects of vocabulary development (Blachowicz et al., 2006).

Just as researchers in both the Beck and McKeown (1983) and McLaughlin et al. (2000) studies recommended an instructional vocabulary program that integrated multiple strategies for teaching students how to construct meaning in a social context, my study combined two socially mediated strategies. Because the strategy of semantic mapping was found to be effective in multiple studies as evidenced above, I selected this strategy as one of the two. Additionally, teachers in the intervention group taught students to socially construct learning using the Frayer model (Baumann, 2000; Frayer, 2008).

The Frayer model (Frayer, 2008) required students to develop shared definitions for key concept words. Additionally, they generated examples and non-examples of the target word and listed attributes for the target word. This strategy was selected for two reasons. First, the strategy was different enough from semantic mapping to provide variety in instruction while students still worked collaboratively with the same thought processes used in semantic mapping. Second, because the research on this strategy is limited and researchers recommend further research on this strategy (Baumann et al., 2003).

This review of the literature informed the development of my hypothesis that when students socially and actively constructed word meanings, they perform better on both proximal and distal vocabulary tests. The literature also guided the development of my study design including the selection of the independent variables and the theoretical framework. This quasi-experimental study was designed to compare the effects of two

socially mediated strategies, sematic mapping and the Frayer model (Frayer, 2008), drawn from the world knowledge hypothesis with two contextually driven strategies of contextual and morphemic analysis from the instrumentalist hypothesis. Inclusion of strategies from both hypotheses allowed for the development of this study design around the general theory for vocabulary instruction.

CHAPTER III

METHODS

Settings and Participants

This descriptive quasi-experimental study took place in the regular classroom setting. Teachers were randomly assigned to one of the two interventions and taught the strategies and administered the assessments to the students within their classrooms. The student participants included fifth grade students from eight schools in a single urban K-12 school district in the Oregon whose approximately 18,000 students attended 26 elementary schools, 8 middle schools and 4 high schools. The elementary schools served 6,800 students in K-5. In this district, 50% of the students were female, the poverty rate was 32% as measured by the National School Lunch Program, 16% of the students were identified as students with disabilities, 2% of the students in this district had Limited English Proficiency and the minority population was 23%. On the 2006-2007 Oregon State Assessments, 80% of the students met or exceeded the reading benchmark and 74% met or exceeded the math benchmark.

Three district staff development specialists served as researcher assistants in this study. They invited fifth grade teachers from the 16 elementary schools using the same textbook publisher program into the study. Volunteers came from eight different schools that served between 250 and 470 students. Of these schools, seven served grades K-5 and one served students K-8. Of the eight schools, seven were neighborhood and six were Title I schools.

One to three teachers participated from each of these eight schools. All of these schools varied in the percent of minority students, students with special needs and students with limited English proficiency who participated. Table 1 and Table 2 reveal the number of student participants in each school and the demographic breakdown of each school.

Table 1. *Percent of Female and Male Students in Each School.*

Schools	Female	Male
A (N= 25)	56	44
B (N = 25)	40	60
C (N = 90)	47	53
D (N = 46)	57	43
E (N - 43)	44	56
F (N = 58)	47	53
G (N = 59)	54	46
H (N = 22)	50	50

Table 2. *Percent of Student Demographic Groups in Each School.*

Schools	AmIn	AsPI	Blk	His	Uns	Wht	SPED	LD	LEP
A (N = 25)	4	8	12	4	0	72	12	8	4
B (N = 25)	0	12	32	4	0	52	20	12	0
C (N = 90)	7	3	1	8	8	73	24	17	2
D (N = 46)	2	11	2	2	0	83	15	4	0
E (N - 43)	0	5	9	21	2	63	30	12	9
F (N = 58)	3	10	5	9	7	66	24	14	2
G (N = 59)	0	7	3	10	5	75	20	10	3
H (N = 22)	5	0	9	0	0	86	23	18	0

Note. AmIn = American Indian; AsPI = Asian Pacific Islander; Blk = Black; His = Hispanic; Uns = unspecified; Wht = White; SPED = students with disabilities; LD = students with learning disabilities; LEP = students with limited English proficiency.

The assistants invited 33 teachers into the study through email. Fifteen teachers showed up for the initial training. One teacher dropped out of the study before students participated in the pretest, leaving 14 teacher participants,12 white, one Native American and one Black. The range of teaching experience in the teacher sample spanned from 1-33 years, with the majority having taught between 3-10 years. All except two teachers taught in the same building for five years or less. Only one teacher held a standard teaching certification requiring an additional year of education, but 12 held Masters degrees. Each teacher taught one group of students except one who taught in a second language immersion school. This teacher taught reading in English to two groups of fifth grade students each day. Table 3 reveals the number of students, number of instructional assistants, race and the professional information from each teacher.

Table 3. *Teacher Information.*

Teacher	N	SPED	IA	Race	Degrees	Masters	Years Teach
1	28	6	3	AsPI	I	Y	1
2	46	1	1	Wht	I	Y	9
3	21	6	0	Wht	E	Y	6
4	22	3	1	Wht	E	Y	10
5	25	2	1	Wht	B	Y	20
6	28	2	1	Wht	B	Y	3
7	30	5	0	Wht	B	N	9
8	32	7	0	Wht	E	Y	1
9	26	2	1	Wht	B	Y	8
10	25	4	1	Wht	B	Y	33
11	29	6	0	Wht	I	Y	3
12	31	7	0	Wht	E	Y	3
13	28	6	0	Blk	S	Y	3
14	27	8	0	Wht	I	Y	3

Note. N = number of students; SPED = students with disabilities; IA = Instructional assistants; AsPI = Asian Pacific Islandar; Blk= Black; Wht = White; I = Initial; E = Elementary; B = Basic; S = Standard; Y = yes, N = no; Years Teach = years of teaching.

While the participant pool included 382 students, the parents of one student refused permission to participate leaving 381 student participants among the 16 classrooms. One-third of the classrooms were similar in terms of male and female students while the remaining two-third were quite different. The size of these 16 classrooms ranged from 13 to 32 students. These classrooms varied in the percent of minority students and students with special needs, specifically students with learning disabilities. Most of the classrooms contained a relatively small number of students with limited English proficiency, with seven containing none. Table 4 and Table 5 reveal the

number of students in each classroom and the demographic breakdown of each classroom.

Table 4. *Percent of Female and Male Students in Each Classroom.*

Class	Female	Male
1 (N = 28)	36	54
2 (N = 23)	57	43
3 (N = 23)	57	43
4 (N - 20)	40	55
5 (N = 22)	50	50
6 (N = 14)	43	42
7 (N = 13)	62	39
8 (N = 30)	47	53
9 (N = 32)	42	56
10 (N = 31)	48	48
11 (N = 30)	57	40
12 (N = 29)	45	55
13 (N = 0)		
14 (N = 31)	45	48
15 (N = 28)	50	50
16 (N = 27)	41	48

Table 5. *Percent of Student Demographic Groups in Each Classroom.*

Class	AmIn	AsPI	Blk	His	Uns	Wht	SPED	LD	LEP
1 (N = 28)	0	11	29	4	0	47	18	11	0
2 (N = 23)	0	9	4	0	0	87	9	0	0
3 (N = 23)	4	9	0	4	0	78	22	9	0
4 (N - 20)	0	5	15	25	5	45	25	15	3
5 (N = 22)	5	0	9	0	0	86	23	18	0
6 (N = 14)	7	7	0	0	0	71	14	7	0
7 (N = 13)	0	8	23	8	0	62	15	8	8
8 (N = 30)	3	3	0	3	3	87	23	13	3
9 (N = 32)	13	3	0	3	13	69	29	22	0
10 (N = 31)	0	7	7	16	0	68	23	7	3
11 (N = 30)	0	2	0	3	10	77	16	13	3
12 (N = 29)	3	7	3	7	14	66	28	17	0
13 (N = 0)									
14 (N = 31)	3	13	7	10	0	61	19	0	3
15 (N = 28)	4	4	4	17	7	64	22	14	4
16 (N = 27)	0	4	4	15	0	67	30	7	4

Note. AmIn= American Indian; AsPI = Asian Pacific Islander; Blk = Black; His = Hispanic; Uns = unspecified; Wht = White; SPED = students with disabilities; LD = students with learning disabilities; LEP = students with limited English proficiency.

The demographics of the student participants closely matched the district demographics expect in the percentage of students with disabilities. The participant pool contained six percent more students with disabilities than the district. While the socially mediated (SM) intervention group contained more than 25% more students, the two intervention groups were closely matched in demographics with a slightly higher percentage of Asian Pacific Islander and Hispanic students in the SM intervention group. The contextually driven (CD) intervention group contained slightly higher percentages of American Indians and students with learning disabilities. Table 6 and Table 7 show the

number of students and the demographic breakdown of each intervention group and the district.

Table 6. Percent of Female and Male Students in Each Treatment and District.

Teacher	Female	Male
Social (N = 219)	47	50
Contextual (N = 162)	49	48
District (N = 17,969)	50	50

Table 7. *Percent of Student Demographics Groups in Each Treatment and District.*

Teacher	AmIn	AsPI	Blk	His	Uns	Wht	SPED	LD	LEP
Social (N = 219)	2	7	6	9	3	70	22	10	2
Contextual (N = 162)	4	6	6	7	5	68	21	14	4
District (N = 17,969)	4	6	4	9	5	73	16		2

Note. AmIn = American Indian; AsPI= Asian Pacific Islander; Blk= Black; His = Hispanic; Uns = unspecified; Wht = White; SPED = students with disabilities; LD = students with learning disabilities; LEP = students with limited English proficiency.

Vocabulary Intervention Strategies

Only teachers using the MacMillan/McGraw-Hill *Treasures* fifth grade reading program were invited to participate. This publisher selected words for explicit vocabulary instruction according to Isabel Beck's (2002) definition of tier two words in *Bringing*

Words to Life. These were words with multiple meanings that students encountered across subject domains. For instruction, the text provided multiple strategies for teaching vocabulary development. First, the text recommended strategies for using contextual and morphemic analysis to learn the meaning of the key tier two words in the particular selection. Second, the text recommended that the teacher provide student friendly definitions. Third, the text provided the teacher with strategies for teaching word meaning through a conceptual approach that according to the Beck et al. (2002) explanation of "rich vocabulary instruction" included such strategies as semantic mapping, semantic feature analysis and the Frayer model (2008). Teachers were asked to teach the words selected by the publisher for direct instruction, but instructed to teach vocabulary development using only the strategies assigned to each intervention group for the two units taught during this study instead of those provided in the text.

Three researcher assistants conducted the study to maintain participant anonymity because I was the researcher and evaluator of the teachers. Before the study began, I met with two researcher assistants to provide the four strategies they would teach the teacher participants. A third researcher assistant randomly assigned each teacher to either the intervention or the comparison group. The assistants met first with the participants in one large group to explain the study in general, what was expected of them and to discuss the importance of fidelity to the assigned intervention. During this session, teachers completed a survey providing information about each teacher.

After 45 minutes, the assistants provided the teacher participants with laptop computers. The teachers spent 30 minutes completing the Easycbm (Tindal, Alonzo,

Yovanoff, Glasgow, & Ulmer, 2008) vocabulary assessment to learn about this assessment. After a short break, the assistants divided the teachers into their assigned groups. For the next two and one-half hours the assistants taught each group the two instructional strategies assigned to that group independently of one another. First, the assistants explained the strategy. Second, teachers practiced the activities. Third, teachers marked the teacher's edition of the text with the guidance to note which activities aligned with the assigned strategy and which they were to avoid. Fourth, teachers inserted activities to teach the assigned strategies where they were needed for their assigned strategy type. Finally, the teachers in each intervention group brainstormed a list of observable behaviors they and their students would be doing during the vocabulary lessons for their assigned strategy type. Teachers asked clarifying questions as a way of checking their understanding for what they could and could not do to stay true to the instructional strategy. Following the training, the assistants provided teachers with additional information about the assigned strategies.

The intervention group learned to teach the meaning of words through two socially mediated strategies, semantic mapping and the Frayer model (2008). The teachers in the comparison group learned to teach the meaning of words in a specific context using two independent word learning strategies, context analysis and morphemic analysis. All four strategies are described below.

Socially Mediated Strategies

Teachers in the intervention group collaboratively developed lessons that enabled students to socially construct meanings of words and make connections between words

and word concepts. The students in this group experienced two strategies: (a) semantic maps, and (b) the Frayer model (2008).

Semantic Mapping

Using semantic mapping students graphically showed connections between groups of words that were semantically connected. First, the teacher provided the meaning of a concept word. Then, students brainstormed words related to the concept word. Next, they grouped the words into categories. Finally, they displayed the word relationships in a web design. Students continued to add to the semantic web as they read passages about the concept and participated in additional vocabulary lessons in which they came across more words related to the concept word (Diamond & Gutlohn, 2006).

Frayer Model

Using the Frayer model (2008) students graphically showed the definition, characteristics of a word, examples and non-examples. First, they listed key concepts from a reading selection. Then, they defined the key concepts. Next, students showed the characteristics, examples and non-examples using the Frayer model.

Independent Learning Using Contextual Strategies

Teachers in the comparison group designed lessons for teaching the meaning of words in context using two specific independent word learning strategies: (a) using context clues and (b) morphemic analysis.

Contextual Analysis

Students were shown a passage and directed to locate words and phrases that gave clues to the unknown word's meanings. Students searched the passage for direct

definitions within the passage. They also looked for signal words or phrases that guided them to synonyms, antonyms or examples of the unknown words (Diamond & Gutlohn, 2006).

Morphemic Analysis

Students identified parts of the word they knew such as prefixes, suffixes and base words. They then constructed an understanding of the meaning of the word by applying what they knew about the meaning for each of these parts (Diamond & Gutlohn, 2006).

The interventions took place in each classroom after each teacher had administered the pretests. The researcher expected all teachers in the study to administer the pretests and begin teaching unit two immediately following the training. However, because this was the first time teachers were teaching this textbook reading program and getting familiar with the materials, these teachers started teaching the program at different times. Ten teachers started teaching unit two in October and four begin in November. As soon as teachers completed the second unit, they administered the posttests. One teacher completed unit two in December, two in January, nine in February and two in March. Some teachers delayed in beginning unit two immediately following the initial training session and others took a break between unit two and three. The range of time teachers taught each unit was between four and nine weeks. While the researcher intended this study to take place over 12 weeks, the entire study took 20 weeks, with two weeks of winter break in the middle.

Measures

During the training session, teachers learned how to administer the three dependent measures. Two measures were curriculum-based measures (CBM) proximal to the intervention. The third was a more distal, but nationally recognized Gates MacGinitie measure. Teachers took the two curriculum-based measures to learn how these computerized tests would work for students.

Researcher Constructed Vocabulary Measures

All students participated in the two, researcher constructed CBMs. Both assessments were computerized vocabulary tests designed to assess students' understanding of 69 of the 74 words recommended by the publisher for explicit vocabulary instruction in the two units taught during the study. The first measure was a multiple-choice test where each student was provided with the focus word and instructed to select the word with the same meaning from three choices. The correct choice was a synonym. Of the two remaining choices, one word was an antonym and the other was related to the synonym, but was not the best choice.

The second test was a sentence maze in which the student read silently from a passage and selected one of three words to place in the blank where a word was removed (Shin, Deno & Espin, 2000; Wiley & Deno, 2005; Brown-Chidsey, Davis & Maya, 2003). The correct choice was the focus word. The distractor was a word related to the focus word and an antonym. This test was selected because research evidenced strong correlations between standardized assessments and mazes using text-based passages. Correlations of .80 and .85 between the maze and both the Gates-MacGinitie and

Metropolitan Achievement Tests (Jenkins & Jewell, 1993) were reported. Additionally, Brown-Chidsey, Johnson and Fernstrom, (2005) reported strong correlations between mazes from controlled vocabulary passages and literacy-based passages with fifth grade students. The maze also sensitively reflected both group and inter-individual differences in improvement for both younger and older students (Brown-Chidsey et al., 2003; Jenkins & Jewell, 1993; Shin, Deno, & Espin, 2000).

In constructing this multiple-choice word test careful attention was paid to formulating rules similar to those recommended by Pearson, Hiebert and Kamil (2007) from the NAEP framework in selecting words provided as choices in the test. Five steps explained below clarify the word selection process. Once the words were selected, a research assistant used the Easycbm (Tindal et al., 2008) online tool to construct both the word and maze tests. The sentences from the maze were designed by the researcher assistants.

Appendix A, Appendix B and Appendix C contain the list of 69 focus words used for designing the tests and the meaning of the words in the textbook selection in the order students encountered the words in the units. Four words were removed from the original list of 74 because a review of four resources did not reveal a matching synonym and appropriate antonym. One word was removed after piloting the measure. While I could have used words from my own knowledge for the four words left out, my goal was to select words for which I could apply a tracking rule for locating a word in an identifiable reference. Appendix A also shows the reference and the rule for the closest synonyms to the meaning in the text selection. Appendix B also shows the reference and the rule for

the words used as distractors that were slightly off from the meaning in the text selections. Appendix C shows the reference and the rule for the antonyms used as the distractors farthest off from the meaning in the text selections.

The letters in the third column of each table identify the reference book from which each word was selected. The following four references were used in developing this test, the American Heritage Dictionary (AHD), the Dictionary of Synonyms and Antonyms (DSA), the Webster's Collegiate Thesaurus (WCT), and the Webster's New World Thesaurus (WNWT). The abbreviations next to each word indicate the rule for locating the selected word in the reference. For example, 2syn2 was located in the second definition in the list of synonyms as the second word.

The next five steps explain the process followed for selecting the words used for choices in the test.

1. I listed the 74 words identified in unit two and three of the Treasures (MacMillan/McGraw Hill) fifth grade Teacher's Edition as focus words for explicit instruction.

2. I read the selections in the student textbook containing these words to learn the specific meaning the students were expected to know for each word. The meaning was usually clarified in the sentence or passage using a synonym, antonym or phrase. In constructing the tests, words provided in the passage to clarify the meanings were not used as choices, but provided guidance in selecting word choices.

3. I located resources that contained the focus words and at least one synonym that had the same meaning as the one taught in the vocabulary lessons. I found

appropriate synonyms for 70 of the 74 words. Sixty-two of the focus words were found in the WCT, four in the AHD, two in the DSA and two in WNWT. In an effort to form a rule for the words selected as the correct choice in the word test, I focused on the words that were both closest to the meanings in the passages and would likely be words fifth grade students had encountered, as judged from my six years of teaching fifth grade students (Pearson, Hiebert & Kamil, 2007). Usually I found the base word of the focus word. Sometimes the forms of the words selected for students to choose from in the test, were changed to agree with the focus word. For example, *transfer* provided in the reference, was changed to *transferring* to agree with the focus word *delivering*. These changes are noted in parenthesis in the rule column of Appendix A. In two cases, the meaning of the word in the story was not provided as a definition or synonym. I then looked up the meaning of the word rather than the given word to find a synonym. In these cases, the word referenced is listed before the rule. (These words were only used in the word test, not the maze test.)

4. For the first set of distractor words, I selected synonyms or related words that were slightly off from the meaning of the word in the text selection and would again, likely be words fifth grade students had encountered. I found 63 in the WCT, four in AHD, two in the WNWT, and one in the DSA. Again, I often referenced the base word rather than the word given in the selection. For example, I looked up *scorch* instead of *scorched.* Sometimes the distractor selected was an alternative definition of the focus word rather than a word related to the synonym. For example, *deflected* was selected as a distractor for *swerved.* Once again, the forms of the words selected for students to choose

from in the test, were changed to agree with the focus word noted in parenthesis in the rule column of Appendix B.

5. For the second distractor, I selected forty-six words from the DSA, twenty-two from the WCT, one from the AHD, and one from the WNWT. I selected antonyms and synonyms or definitions farthest from the meaning of the word in the passage. When a distractor could not be found by looking up the passage word, I looked up the word chosen as the synonym or related word. When this method was used, the word appears before the rule in Appendix C. Once again, the forms of the words selected for students to choose from in the test, were changed to agree with the focus word noted in parenthesis in the rule column of Appendix C.

Shortened-versions of both tests were piloted with nine fifth grade students from a class not participating in the study to find out if the construction of the test and the computers worked smoothly. After this pilot, one focus word was taken out leaving 69 items and a few changes were made in the word choices. Both tests were piloted a second time with 43 students from two classrooms not participating in the study to learn about the test items and computer glitches. The Easycbm (Tindal et al., 2008) tool provided an analysis revealing the ten easiest items and the word choices that were not working well for students. Computer glitches were addressed. Twelve changes were made in the words provided as choices, but all items were kept in the word test resulting in 69 items in the vocabulary word test. The nine easiest items were removed from the maze test resulting in 60 items in the maze test. Appendix A, Appendix B and Appendix C reveal the words used in the final test after all changes were made.

All students participating in the study took both of these tests as a pretest prior to instruction and again at the end of unit three. All except one class took the Easycbm tests before beginning unit three. Appendix D reveals the dates students took these tests.

Gates MacGinitie Measure

All students took the Gates MacGinitie (MacGinitie, MacGinitie, Maria, Dreyer, & Hughes, 2007) vocabulary test, both as a pretest and a posttest. This test assessed idioms, parts of speech, and word meaning. The publisher of this test, Riverside Publishing, provided a technical adequacy report (MacGinitie, MacGinitie, Maria, & Dreyer, 2002) revealing reliability and validity information. Item analyses, reliability coefficients using Kuder-Richardson Formula 20 (K-R 20) were computed revealing .91 on the Level 5, Form S test. The standard error of measure was 2.8. The Level 5 Form T test revealed raw score, reliability coefficients of .91 and the standard error of measure was .28.

For Form S, inter-correlations were computed among subtests and Total from the raw scores of students in the standardization sample. The correlations were .80 in the fall and .78 in the spring, with a Total of .94 for both seasons. Because a large number of students in the sample took Form S in the spring and fall, fall-spring raw score correlations were computed. These calculations revealed correlations of .85.

The Riverside Publishing Technical Report (MacGinitie et al., 2002), discussed validity issues of testing time, item difficulty range, careful test design and cultural diversity. The publishers provided evidence that the time allotted for taking the test was adequate. At grade five, 87% completed the vocabulary sub-test in the fall and 94% in

the spring. Because Form S and T were identical, the assumption was made that the time needed for both forms was the same. This Fourth Edition of the Gates MacGinitie test range of item difficulty for the fifth grade level was free of ceiling and floor limitations.

In terms of test design, the test developers claimed exceptional care in constructing tasks for each grade that measured a progression of vocabulary development. Formats were based on research findings and "on the authors' assessment of their practical usefulness" (MacGinitie et al., 2002, p. 70). Additionally, the item measurements were free of unintended consequences. The field-test forms were examined by 15 reviewers representing different ethnic groups from across the country to ensure test questions were not biased or contained content that distracted students from performing at their best. Additionally, a statistical bias analysis was performed to ensure that questions would not be unfair to African American or Hispanic students. Passages were chosen to represent both females and males in various ethnic groups.

Prior to instruction and within 27 instructional days, all students took Form T of the Gates MacGinitie test as the pretest. Form S of the Gates MacGinitie was administered to all participating students as a posttest within 18 weeks of the pretest.

Controls for Treats to Validity

At the training session, the research assistants emphasized the importance of teaching the assigned strategies to fidelity. A researcher assistant met with each group three times throughout the study as a control for researcher attending to teachers and to remind them of the importance of fidelity to implementation. Appendix E shows the dates the meetings took place.

As another control for fidelity to implementation, a fourth researcher assistant observed teachers for ten minutes during vocabulary instruction, noting observable teacher and student behaviors attributed to both intervention types. The two assistants who taught the intervention strategies developed the list of observable behaviors and the third researcher assistant created the checklist in Appendix F. This assistant was not trained in the strategies and the observable behaviors were listed randomly, therefore she did not know which strategies were attributed to each intervention type or which treatment was being implemented when she observed.

These observations provided only minimal information due to deviations from the original observation schedule and the variations in teacher's routines as a result of daily life in classrooms. Of the 14 teachers, 13 were observed once during unit two and only four were observed a second time during unit three. See Appendix G for the schedule of observations. Because of scheduling conflicts with the teachers' schedules and the observer's calendar, three observations were conducted by the other three researcher assistants. The observers collected work samples as evidence of the types of activities in which students were participating. Work samples were collected from only eight teachers however all of the samples collected revealed that students completed assignments aligned only with their assigned intervention.

As a control for threats to experimental treatment diffusion, the research assistants met with each teacher at the end of the study to learn what they knew about the contrasting treatment. Due to the random assignment of teachers to treatment, some teachers assigned to different treatments taught in the same building. While

compensatory rivalry by the comparison group was possible, the assistants reported that these teachers did not know about the strategies assigned to their peers in another treatment group and refrained from discussing the study with each other during the study.

There was potential for experimenter bias due to my supervisory role in the implementation of this reading program and reading assessments district-wide. It was also possible that teachers felt some pressure to perform due to my role. To minimize this pressure I provided written information to the co-presidents of the teacher's association and the individual teachers informing them that their participation in this study did not in any way enter into the evaluation process. This study was contracted out to the University of Oregon for payments to teachers for participating. This way I, as researcher and administrator of these teachers, did not know who participated in this study and therefore could not pressure teachers to behave in certain ways.

The researcher assistants delivered the professional development, distributed the assessments and met with teacher participants throughout the study to minimize perceived evaluation threat. Additionally, these assistants informed the teachers that the data from this study would be coded and reported in a way that kept all participants, both teachers and students anonymous.

To safeguard against differential selection, the teachers were randomly assigned to either the comparison group or the intervention group. Some students were lost through attrition because some of the student participants where highly mobile students and the study lasted between 12 and 18 weeks. It was possible that students showed

improvement due to familiarity with the format of the test. However, students from both groups were equally likely to have become wise to the test format.

The Gates MacGinitie (MacGinitie, 2007) vocabulary test and the Easycbm (Tindal et al., 2008) tests were given for the pretest and post assessment minimizing threats to instrumentation validity. The threat of maturation confounding this study was non-existent due to the 18-week window in which the interventions were administered and the assessment data collected. Additionally, the 18 weeks of this study did not allow much time for historical events to occur that influenced the data.

A one-between, one-within repeated measures analysis of variance was used to analyze the data. For all analyses, the between factor had two levels: (a) contextually driven and socially mediated. The within factor was time for the proximal measures (vocabulary and maze) which had three periods. For the distal measure, time had two periods.

CHAPTER IV

RESULTS

Descriptive statistics tables display the means and standard deviations. A repeated-measures analysis of variance was conducted on a vocabulary word test, a vocabulary maze and the Gates MacGinitie (MacGinitie, 2007) vocabulary test for the two intervention variables. The analysis included data from two assessments administered three times during the study and one was administered twice.

Vocabulary Word Tests

At Time One (T1) students who learned through socially mediated (SM) strategies scored three words higher, than the students who learned contextually driven (CD) strategies. The upper bound was higher in the SM group and the lower bound was lower in the CD group. The means were significantly different between the two conditions. At Time Two (T2) and Time Three (T3), the difference between the two conditions was significant. While both groups showed growth between T1 and T2, the CD group gained three words more than the SM group. The CD group made most of the growth between T1 and T2. See Table 8 for means and standard deviations.

Table 8. *Mean Achievement Scores on Easycbm Vocabulary Synonym Tests.*

Vocabulary Synonym Test	Condition	N	Mean	SD
Time 1	Contextual	81	37.77	6.20
	Social	159	40.82	9.50
	Total	240	39.79	8.63
Time 2	Contextual	81	42.57	7.06
	Social	159	43.37	9.17
	Total	240	43.10	8.51
Time 3	Contextual	81	44.84	7.64
	Social	159	45.05	9.29
	Total	240	44.98	8.75

A test of sphericity was not significant; therefore the Greenhouse-Geisser correction was not used. The Main effect of Time was significant: $F(2, 476) = 114$, $p < .001$. The Interaction of Time by Condition was significant, $F(2, 476) = 7.79$, $p < .001$. The variation is mostly due to time rather than interaction for time by treatment. The partial Eta squared interaction for time is .44 and for the interaction of time by treatment is .05. The effect size between groups at T1 was small (Cohen's d = .37, $r = .18$) and the effect size was close to zero at T2 (Cohen's d = .10, $r = .05$) and T3 (Cohen's d = .04, $r = .02$). See the graph of these results in Figure 2.

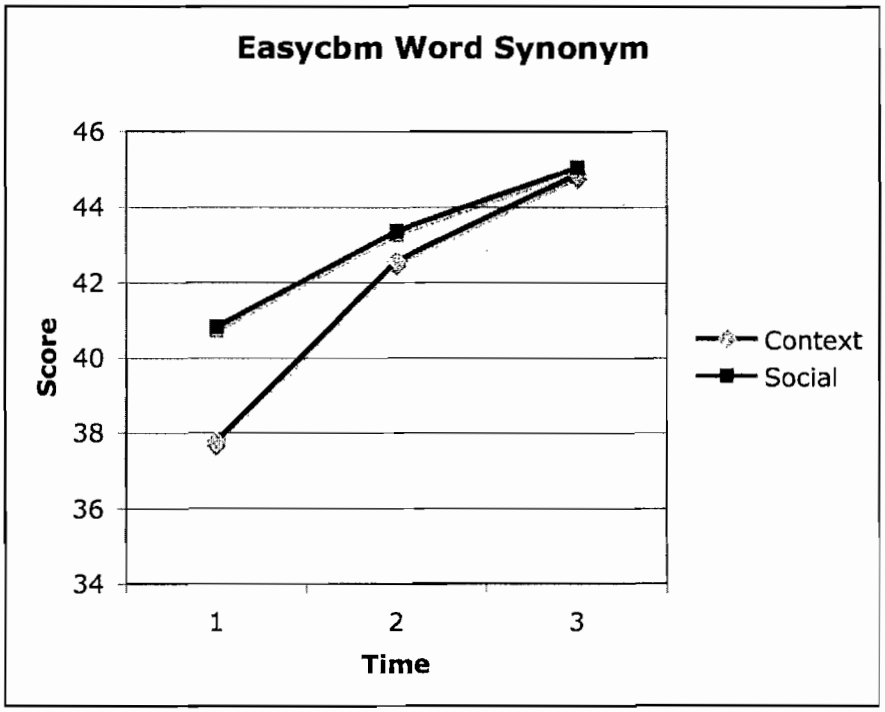

Figure 2. Easycbm Words Synonyms Graph.

Vocabulary Maze Tests

While the SM group scored two words higher on the maze at T1 than the CD group, the means were not significantly different between conditions. The upper bound was higher in the SM group and the lower bound was lower in the CD group. At T2 and T3, the difference between the two conditions was not significant either because the 95% confidence interval included zero. While both groups showed significant growth between T1 and T3, the CD group gained two words more than the SM group. The CD group made most of the growth between T1 and T2. See Table 9 for means and standard deviations.

Table 9. *Mean Achievement Scores on Easycbm Vocabulary Maze Tests.*

Vocabulary Maze Test	Condition	N	Mean	SD
Time 1	Contextual	80	34.76	9.88
	Social	174	37.02	11.17
	Total	254	36.31	10.81
Time 2	Contextual	80	46.18	7.95
	Social	174	45.65	10.49
	Total	254	45.81	9.75
Time 3	Contextual	80	52.29	9.65
	Social	174	52.22	10.70
	Total	254	52.24	10.36

A test of sphericity was significant and therefore the Greenhouse-Geisser correction was used. The Main effect of Time was significant, $F(2, 408)$, =494, $p < .001$. The Interaction of Time by Condition was significant, $F(2,408) = 4.05$, $p < .026$. The variation is mostly due to time rather than interaction for time by treatment. The partial Eta squared interaction for time is .72 and for the interaction of time by treatment is .01. The effect size between groups at T1 was small (Cohen's d = .21, r .1) and the effect was close to zero at T2 (Cohen's d = .05, r = .03) and T3 (Cohen's d .01, r = 0). See the graph of these results in Figure 3.

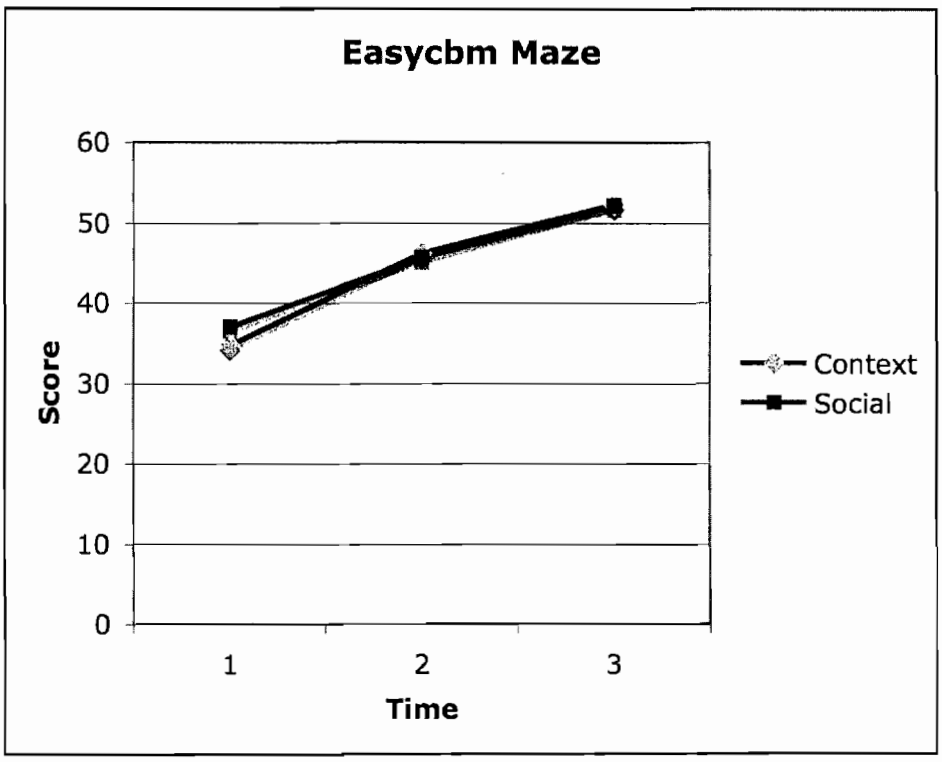

Figure 3. Easycbm Maze Graph.

Gates MacGinitie Vocabulary

At T1 the CD group scored about three words higher, than the SM group. The upper bound was higher in the CD group and the lower bound was lower in the SM group. The means were significantly different between the two conditions. While both groups showed growth between T1 and T2, the SM group gained 4 words more than the CD group. See Table 10 for means and standard deviations.

Table 10. *Mean Achievement Scores on Gates Vocabulary Tests.*

Gates Vocabulary Test	Condition	N	Mean	SD
Time 1	Contextual	144	25.23	10.54
	Social	200	21.51	13.48
	Total	344	23.07	12.45
Time 2	Contextual	144	27.35	10.60
	Social	200	27.63	11.36
	Total	344	27.51	11.03

A test of sphericity was significant therefore the Greenhouse-Geisser correction was used. The Main effect of Time was significant, $F(1, 342) = 34.8, p < .001$. The Interaction of Time by Condition was significant, $F(1,342) = 8.2, p < .05$. The variation is mostly due to time rather than interaction for time by treatment. The partial Eta squared interaction for time is .58 and for the interaction of time by treatment is .02. The effect size between groups at T1 was small (Cohen's d = .31, $r = .15$) and at T2 the effect was close to zero (Cohen's d = .02, $r = .01$). See the graph of these results in Figure 4.

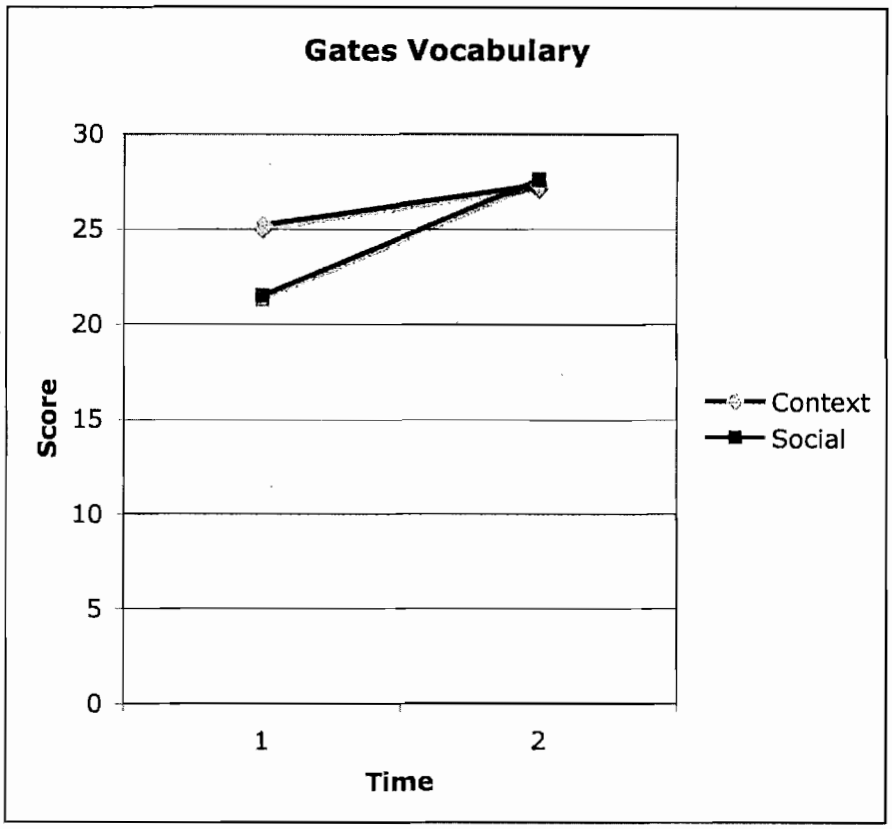

Figure 4. Gates Vocabulary Graph.

CHAPTER V

DISCUSSION

From this study, I found three interesting results about how two different types of vocabulary instruction impacted student vocabulary learning as measured by both proximal and distal measures. First, students who learned through both types of strategies performed better on all three measures after direct vocabulary instruction. This finding confirms evidence from earlier studies (Beck McKeown, 1991; Stahl & Fairbanks, 1986). Second, those using contextually driven strategies learned the meaning of more focus words than those using the socially mediated strategies when measured by the Easycbm (Tindal et al., 2008) researcher designed proximal measures. Third, the students who learned socially mediated strategies performed better on the more distal Gates MacGinitie (MacGinitie et al., 2007) vocabulary measure than students who learned contextually driven strategies.

Limitations

Limitations to the sampling plan existed because out of the 26 elementary schools in the district pool only 16 were using the same Treasures (Bear et al., 2007) textbook reading program. Additionally, the 14 teachers in the study volunteered. Further limitations occurred when teachers were assigned to treatment groups by pulling names out of a hat rather than through use of an electronic tool for random assignment. Because teachers were assigned to treatments and students were nested in classrooms, a mismatch occurred between treatment at the teacher level and data analysis at the student level,

another limitation to the study. Stricter exclusion rules would help in future research if this study were repeated.

Though consent was passive some parents excluded their children from the study. Additionally, the data analyzed included only the data from students who participated in both the pretests and posttests of all three tests. The turnover of students in the high-mobility Title I schools accounted for much of the missing data. A threat to external validity occurred due to the sampling plan and the random assignment issue limiting findings to the Treasures (Bear et al., 2007) textbook reading program.

Disorganization around the components included as controls for implementation fidelity existed due to the purposeful distance between the researcher and the participants. Fewer observations were conducted than originally planned. Because of scheduling conflicts with the teachers' schedules and the fourth researcher's calendar, three observations were conducted by the other three researcher assistants. Scheduling complications resulted in dropped observations and limited information from these observations. Of the 14 teachers, 13 were observed once during unit two and five were observed a second time during unit three. Additionally, teachers were confused about expectations for completing three administrations of the Easycbm measures. Only twelve teachers completed all three Easycbm assessments. Finally, teachers were unclear about the expectations for instructional time for the intervention and testing timelines which resulted in variability of these controls.

From this experience assistants recommended the following modifications to the design components. These modifications could provide more information about the interventions and students' practice of the strategies, and result in complete assessments.

1. Instead of just checking in with teachers, conduct consistent interviews with a script regarding both strategy and assessment implementation. Increase the number of observations and the time for each observation.

2. Clarify expectations and collect work samples regularly and more frequently during the time of the interviews or observations.

Anecdotal information from the research assistants suggested that teachers in contrasting intervention groups did not talk to each other about the strategies. However, it was possible that teachers assigned to different intervention groups, but teaching in the same buildings, may have engaged in conversations about both types of strategies, another threat to implementation fidelity. Semi-scripted instructions and exercises like in the McLaughlin et al. (2000) study could provide more assurance teachers would stay focused on assigned strategies.

Some studies (Baumann et al., 2002; Bos & Anders, 1990; McLaughlin et al., 2000; Lubliner & Smetana, 2005) included more controls to ensure fidelity to implementation. Researchers provided the instruction in the Baumann et al. study, rotating among the four groups as control for teacher effects. In the Bos and Anders study researchers taught the interventions using scripts, which enabled more control over the instructional time and more instructional consistency. In the McLaughlin et al. study the scripted lessons and materials were developed, piloted and revised before implementation

of the intervention. In spite of these controls, McLaughlin et al. noted great variability in teacher motivation, engagement and time devoted to lessons, but still found strong gains in vocabulary development with an enriched vocabulary instructional program. Lubliner and Smetana provided training both at the beginning of the study and four weeks into the study and 12 scripted lesson plans.

Explanations

Previous studies provided explanations for three questions revealed from inquiry into my results. To answer the first question studies provided three explanations for why the contextually driven group gained more than the socially mediated group on the proximal measures. For the second question of why students in the socially mediated group gained more on the distal measure, explanations about the type of thinking required for application were provided. Finally, the field offered many explanations for the improvements to the design that might provide different results.

Question 1: Why did the contextually driven group gain more than the socially mediated group on the Easycbm, but not on the Gates MacGinitie?

The results of my study seemed to mirror the results in the Baumann et al. (2002) study in which they found strong immediate effects for lesson words and very little transfer effect to unknown words when students were taught vocabulary development through morphemic and contextual analysis both together and as isolated skills. Three possible explanations provided by Baumann et al. (2002) could be applied to my study: (a) limited transfer power of the intervention strategy, (b) mismatch between intervention and test, and (c) duration and scope of the intervention.

Possibly the transfer power of using morphemic and context analysis together had limited transfer power. Kuhn & Stahl (1998) found that while students learned to use the contextual analysis strategies, the use of the strategies didn't improve word learning. Perhaps students in the contextually driven group learned the word meanings for the focus words, but did not transfer use of the strategies when they encountered new words without surrounding contextual information in the Gates MacGinitie (MacGinitie, 2007) vocabulary test. Watts (1995) found that teachers perceived vocabulary instruction in terms of the "immediate classroom context as opposed to a more global context" (p 419). Perhaps this focus on the immediate classroom context was magnified when teachers taught contextual and morphemic analysis, which caused them to teach students in a way that was more narrowly focused on than if they were teaching semantic relatedness strategies.

Another explanation for why students in the contextually driven group scored higher on the Easycbm measures could be that teachers are generally more comfortable and fluent with contextual strategies. Watts (1995) concluded that teachers most frequently relied on definitional and contextual forms of instruction. Perhaps teachers in the contextual driven group were more skilled and effective at teaching contextual analysis strategies than teachers in the socially mediated group were at semantic mapping and the Frayer model (Frayer, 2008).

Perhaps students in the contextually driven group did not experience a match between instruction and the Gates MacGinitie (MacGinitie, 2007) vocabulary test, but found a better match with the Easycbm maze test where text surrounded the focus words.

Additionally, students took the Easycbm maze, before they took the Easycbm synonym test. This could also have provided a practice opportunity immediately prior to experiencing the words in isolation. Analysis of the Gates MacGinitie (MacGinitie, 2007) vocabulary measure revealed very few test items that included words that could be broken down into morphemes and the words were not surrounded by text that could provide clues, putting the students in the contextually driven group at a disadvantage in the Gates MacGinitie (MacGinitie) test.

Maybe 12 to 18 weeks was not sufficient time to master the strategies in order to apply them to new situations. Increase in instructional time dedicated to daily vocabulary instruction and increase in the length of the treatment could influence the results. With an increase in the duration and scope of the intervention students in the contextually driven group may have applied the learned strategies to new words they encountered in the Gates MacGinitie vocabulary tests. Similarly, the socially mediated group may have shown more growth on the Easycbm measures if the length of the study were increased. McLaughlin et al. (2002) found significant improvements in vocabulary knowledge after a 12-15 week intervention of enriched vocabulary instruction, but found even greater gains when students participated in the vocabulary program for two years. Baumann et al. (2002) and Bos and Anders (1990) taught interventions for 50 minutes.

Question 2: Why did the socially mediated group grow more on the distal Gates MacGinitie vocabulary measure than the contextually driven group?

Perhaps the thinking students used to construct meaning learned through semantic mapping and the Frayer model (Frayer, 2008) served students in figuring out the meaning

of unfamiliar words on the Gates MacGinitie (MacGinitie, 2007) vocabulary test. Pearson et al. (2007) explained that words are not simple entities, but instead "connect with experience and knowledge, and their meanings vary depending on the linguistic context in which they can be found" (p. 286). The practice of drawing from background knowledge experienced in the semantic mapping and Frayer model (Frayer, 2008) strategies could have provided an advantage to students in the socially mediated group on the Gates MacGinitie (MacGinitie, 2007) vocabulary test as they approached unknown words.

Beck and McKeown (1983) found their program of *rich vocabulary instruction* that focused primarily on semantic relatedness and semantic mapping resulted in positive effects on word learning and comprehension. It is possible that students in the socially mediated group encountered more words, especially synonyms, during instruction due to the broader reach into the world of words of these strategies than the context and morphemic analysis strategies. Some of the words they may have encountered may have been included in the Gates MacGinitie (MacGinitie, 2007) assessment.

Question 3: If this study was repeated, what changes in the design could enhance the learning gained from the results?

A design that included looking at the results by subgroups within the sample would provide information on strategies that might be more effective for a particular subgroup. Bos and Anders (1990) studied students with learning disabilities to learn about immediate and delayed effects of specific vocabulary development strategies. McLaughlin et al. (2000) studied the effects of vocabulary instruction on 4th and 5th grade

English language learners (ELL) compared to their English-only peers. The gains in vocabulary learning of Title I students from a low performing school were compared with students from an above-average school in the Lubliner and Smetana (2005) study.

Results from measures including both practice and experimental passages may provide more information about the link between assessments and interventions. To understand this link, the assessments would need to be more closely matched to each intervention as in the Baumann et al. (2002) study. Bos and Anders (1990) constructed assessments that included three features not considered in my study. First, they constructed two tests one from an experimental passage and one from a practice passage. Both of these tests included vocabulary items to assess students understanding of content vocabulary and comprehension items to measure students' ability to understand the passage and apply learning to new situations. (If passages in the maze had included new words, comparisons could have been made between the two groups to learn which strategy type enabled application to new words.) Second, these researchers constructed a prior knowledge test using items from both the experimental and practice tests. Third, they used a topic interest inventory to determine students' prior interest in the topic.

Lubliner and Smetana (2005) constructed measures using passages from context textbooks in which students first circled the words they didn't know and then were given a multiple choice test on these words, another interesting way of measuring prior knowledge. Baumann et al. (2002) constructed assessments using both lesson words and transfer words students were not exposed to during the intervention.

Implications and Suggestions for Further Study

While the purpose of this study was to learn if one type of strategy, contextually driven or socially mediated, produced greater results in terms of vocabulary learning than the other, the mixed nature of the findings in both the proximal and distal measures supported the conclusion reached by past researchers (Baumann et al., 2003; Blachowicz & Fisher, 2000; McKeown & Beck, 2004, McLaughlin et al., 2000) that both types of strategies are needed in a vocabulary development program. The findings from this study could inform professional development for teachers. Further, inclusion of multiple strategies in a vocabulary program may be necessary to result in both greater vocabulary knowledge and improved comprehension. Lubliner and Smetana (2005) found significant improvement in students' vocabulary acquisition over both the experimental period and overall when they studied the effects of a vocabulary development program that included contextual analysis, morphemic analysis, substituting a synonym, drawing on background knowledge, and asking a peer for help with the meaning. McLaughlin et al. also found significant effects with their enriched vocabulary program that included contextual, as well as, socially mediated strategies.

Both analysis of the results and conclusions drawn by the teachers in this study after teaching the strategies, indicated that when teachers directly taught strategies for accessing word meanings students gained more vocabulary knowledge, a conclusion with implications for teacher professional development. Students in this study gained four to seventeen words on the proximal measures and two to six words on the distal measure, as compared with analysis of data on this district's vocabulary test that revealed students

normally gained about three words on average from fall to spring. Though not the same test, the district measure was similar to the synonym test and the Gates MacGinitie vocabulary test and provided a comparison for the number of words students learned in a year on average.

Though a control group and a control period, where students not experiencing direct vocabulary instruction were not a part of this study, an improvement on my design could be to include both a control group and control periods for both intervention groups. Lubliner and Smetanta (2005) found that students participating in direct vocabulary instruction made more progress in vocabulary acquisition during the experimental period than during the control period and more progress than the control group. Another enhancement would be to also include a group of students receiving instruction in both types of strategies as in the Baumann et al. (2002) study whose design included a control group, a contextual analysis group, a morphemic analysis group and a combined morphemic-contextual analysis group.

Another improvement to my design would be to assess students six months after the intervention and posttest to learn if students maintained the gains. Bos and Anders (1990) assessed students four weeks after the interventions and Baumann et al. (2002) assessed students five weeks after the interventions to learn about the delayed effects of instructional conditions on students' learning. Teachers in the McLaughlin et al. (2000) study taught the intervention program to some students for one and others for two years, comparing the data of students who received the intervention for one year with those who have received it for two years.

Attention to the question, what does it mean to know a word, could inform future vocabulary studies in terms of interventions, assessments and interpretations of the data. Bos and Anders (1990) included oral recalls and scored the number of text-related, student-relevant, student-irrelevant, and student-inaccurate words students used in the recall. McLaughlin et al. (2002) included multiple tasks in the intervention that required students to acquire knowledge of the concepts a word represents, associations a word evokes, the words connotations, collocations, social and stylistic constraints, derivations, multiple meanings and syntactic behavior.

A couple of studies (Bos and Anders, 1990; Lubliner & Smetana, 2005) included either comprehension items or entire comprehension measures, which provided an opportunity to learn about the effects of vocabulary learning on reading comprehension. As Beck and McKeown (1991) stated "given the strong correlational relationship between vocabulary and comprehension and hints of a causal connection, a most intriguing question for researchers has been whether increasing vocabulary knowledge through instruction would improve reading comprehension" (p. 805).

Contributions to the Field of Vocabulary Research

Three components of this study could further the field of vocabulary research. First, Pearson et al. (2007) found very little in the field of vocabulary research to guide the development of vocabulary assessments, specifically concerning how to select words for distractors. It is possible that my careful articulation of this process could provide helpful information for researchers interested in designing vocabulary assessments.

Second, because the maze is closely linked to the contextual analysis strategy, use of the maze in this study may provide information to researchers interested in further research on vocabulary strategies using assessments that assess the strategy and word learning. Third, the Easycbm (Tindal et al., 2008) online tool enables any user to construct assessments or utilize assessments already embedded in the system for vocabulary research, classroom assessment and student progress monitoring.

APPENDIX A

SYNONYMS

Focus Word	Meaning in Story	Reference Book	Rule
injury	causing pain	WCT	syn1 damage
mournful	injured bird, mournful sight	WCT	3syn sorrowful
sympathy	full of caring	WCT	syn1 compassion
delivering	taking somewhere	WCT	2syn8 transfer(ring)
slurp	slurp smoothies	WCT	rel5 suck
shrieks	loud cry	WCT	1syn scream
decency	kindness for helping	WCT	syn2 dignity
species	kinds of snakes	WCT	syn1 type
survive	live	WCT	2 exist
alert	aware	WCT	1syn watchful
vibrates	shakes slightly	WCT	syn1 shake(s)
surroundings	environment	WCT	syn environment
prey	hunted by other animals	WCT	2syn victim
lunging	sprang forward	WCT	syn2 bursting
dedicated	memorial	WCT	rel6 committed
equality	same rights	WCT	2syn fairness
exhibits	displays	WCT	1syn2 demonstrations
site	place where something happened	WCT	1syn2 location
forbidden	not allowed	WCT	syn1 prohibited
reluctant	didn't want to	WCT	syn5 hesitant
gossiped	talked about	WCT	syn4 talked
irresistible	very tempting	WCT	tempting syn1 enticing
elegant	dressed up	WCT	rel2 grand
blared	loud noise	WCT	syn4 roar(ed)
mischievous	naughty	WCT	2syn naughty
hesitation	without hesitation (pausing)	WCT	syn 2 indecision
vastness	wide, open	WCT	syn 3 hugeness
enthusiasm	excitement	WCT	2syn2 eagerness
horizon	land meets the sky	WCT	rel 10 expanse
ravine	deep, narrow valley	WCT	1valley
presence	nearby	WCT	present syn3 existence
swerved	turning in or out	WCT	1 turned
flickered	campfire flickered unsteadily	WCT	2syn1 blinked
suspended	hung	WCT	rel1 dangling
navigate	steer	WNWT	4guide
instruct	told to do something	WCT	1syn1 teach

SYNONYMS (Cont'd.)

swagger	walk proud	WCT	2syn2 strut
patriots	loves country	WCT	syn1 loyalist
tyrant	cruel ruler	WCT	syn2 dictator
stark	bare cupboards	WCT	3syn1 empty
governor	leader	WCT	rel4 administrator
spunk	courage	WCT	2syn1 courage
representative	people elect to speak for them	WCT	2syn1 delegate
colonel	officer	AHD	1 army officer
attorney	lawerying	WCT	2syn lawyer
qualified	failed to qualify	WCT	1syn3 capable
postpone	wait until later	WCT	syn2 delay
submit	agree to punishment	WCT	4syn5 surrender
satisfactory	okay or good	WCT	1syn sufficient
humanity	people living on earth	WCT	syn1 mankind
inevitable	will continue, best answer	WCT	syn1 certain
unheeded	without stopping	WCT	syn3 unnoticed
enlightened	now know	WCT	rel 4 informed
prevailing	continuing way	WCT	syn1 current
brimming	full	WCT	1syn7 loaded
gushed	rushed out	WCT	syn2 flow(ed)
landscape	across the flat landscape	DSA	syn2 view
scorching	hot dry season	WCT	syn4 burning
parched	dry	WCT	syn1 dry (dried)
scrawny	scrawny branches	WCT	syn8 scraggy
gnarled	gnarled trunk of baobab tree	AHD	1 knotty
progress	new things and ways	WCT	3syn1 development
defective	broken	WCT	rel2 damaged
meteor	huge piece of planet	AHD	1 shooting star
rotated	turned around	DSA	syn2 revolved
staggered	almost feel backwards	WCT	3syn8 wobble(d)
reversed	backwards	WCT	rel2 overturned
dangling	hanging	WCT	syun4 suspending
tokens	game pieces	WNWT	1marker(s)

APPENDIX B

DISTRACTORS

Focus Word	Meaning in Story	Reference Book	Slightly Off Distractors
injury	causing pain	WCT	rel4 misery
mournful	injured bird, mournful sight	WCT	4syn 9 unfortunate
sympathy	full of caring	WCT	rel 2 sensitivity
delivering	taking somewhere	WCT	5 syn rel 2 ending
slurp	slurp smoothies	WCT	rel 1 guzzle
shrieks	loud cry	WCT	3syn 2 blare
decency	kindness for helping	WCT	rel appropriateness
species	kinds of snakes	WCT	syn 10 variety
survive	Live	WCT	rel4 continue
alert	Aware	WCT	rel3 mindful
vibrates	shakes slightly	WCT	syn3 quake(s)
surroundings	environment	WCT	syn4 atmosphere
prey	hunted by other animals	WCT	2syn casualty
lunging	sprang forward	WCT	syn 4 driving
dedicated	Memorial	WCT	rel3 directed
equality	same rights	WCT	rel 4 alike(ness)
exhibits	Displays	WCT	1 syn 5 illustrations
site	place where something happened	WCT	1syn - 5 position
forbidden	not allowed	WCT	rel 2 excluded
reluctant	didn't want to	WCT	syn 8 shy
gossiped	talked about	WCT	syn 5 tattled
irresistible	very tempting	WCT	syn 5 uncontrollable
elegant	dressed up	WCT	rel - 6 beautiful
blared	loud noise	WCT	2syn1 scream (ed)
mischievous	naughty	WCT	rel1 annoying
hesitation	without hesitation (pausing)	WCT	rel 4 mistrust
vastness	wide, open	WCT	syn9 tremendousness
enthusiasm	excitement	WCT	re 2 interest
horizon	land meets the sky	WCT	rel 5 field
ravine	deep, narrow valley	WCT	syn gap
presence	nearby	WCT	rel1 appearance
swerved	turning in or out	WCT	2 deflected
flickered	campfire flickered unsteadily	WCT	rel 13 gleamed
suspended	hung	WCT	rel2 swinging (swung)
navigate	steer	WNWT	3 cruise
instruct	told to do something	WCT	sun2 discipline
swagger	walk proud	WCT	noun 3 drift

DISTRACTORS (Cont'd.)

patriots	loves country	WCT	1def supports (supporters)
tyrant	cruel ruler	WCT	syn 4 oppressor
stark	bare cupboards	WCT	3syn 3 - clear
governor	leader	WCT	rel 7 director
spunk	courage	WCT	syn 5 heart
Represent-ative	people elect to speak for them	WCT	2syn3 deputy
colonel	officer	AHD	2 honoray title
attorney	lawerying	WCT	1syn1 agent
qualified	failed to qualify	WCT	2 complete
postpone	wait until later	WCT	syn9 shelve
submit	agree to punishment	WCT	rel 4 offer
satisfactory	okay or good	WCT	syn6 enough
humanity	people living on earth	WCT	syn 5 man
inevitable	will continue, best answer	WCT	6 necessary
unheeded	without stopping	WCT	2syn1 careless
enlightened	now know	WCT	syn 10 advised
prevailing	continuing way	WCT	syn 7 ruling
brimming	full	WCT	1syn6 crowded
gushed	rushed out	WCT	sn5 stream(ed)
landscape	across the flat landscape	DSA	syn3 appearance
scorching	hot dry season	WCT	scortch rel 2 melt
parched	dry	WCT	syn6 thirsty
scrawny	scrawny branches	WCT	syn3 bony
gnarled	gnarled trunk of baobab tree	AHD	3. rugged
progress	new things and ways	WCT	3syn4 flowering
defective	broken	WCT	1syn5 sick
meteor	huge piece of planet	AHD	3 lightning
rotated	turned around	WCT	1syn2- circled
staggered	almost feel backwards	WCT	4syn 1 hesitate(d)
reversed	backwards	WCT	rel4 exchanged
dangling	hanging	WCT	syn 3 slinging
tokens	game pieces	WNWT	3 sample(s)

APPENDIX C

ANTONYMS

Focus Word	Meaning in Story	Reference Book	Antonym
injury	causing pain	DSA	2 benefit
mournful	injured bird, mournful sight	DSA	1 joyful
sympathy	full of caring	DSA	6 bitterness
delivering	taking somewhere	DSA	1 holding
slurp	slurp smoothies	WCT	rel7 smack
shrieks	loud cry	DSA	yell ant17 whisper
decency	kindness for helping	DSA	4 obscene (obscenity)
species	kinds of snakes	DSA	variety ant5 individual
survive	live	DSA	continue ant2 halt
alert	aware	DSA	5 drowsy
vibrates	shakes slightly	DSA	ant3 pauses
surroundings	environment	WCT	environment syn4 climate
prey	hunted by other animals	DSA	2 victim criminal
lunging	sprang forward	DSA	driving4 hindering
dedicated	memorial	DSA	directed1 deceived
equality	same rights	DSA	fairness12 dishonest(y)
exhibits	displays	DSA	denonstrate2 conceals
site	place where something happened	DSA	location syn4 situation
forbidden	not allowed	DSA	4recommended
reluctant	didn't want to	DSA	2eager
gossiped	talked about	WCT	rel10 suggested
irresistible	very tempting	WCT	tempting con5 revolting
elegant	dressed up	DSA	ant1 crude
blared	loud noise	WCT	1syn5 glow(ed)
mischievous	naughty	DSA	ant12 friendly
hesitation	without hesitation (pausing)	DSA	ant6 continuation
vastness	wide, open	DSA	ant3 narrowness
enthusiasm	excitement	DSA	ant3 tiredness
horizon	land meets the sky	WCT	rangesyn1 habitat
ravine	deep, narrow valley	WCT	rel notch
presence	nearby	WCT	existence rel life
swerved	turning in or out	WCT	rel1 shift(ed)
flickered	campfire flickered unsteadily	WCT	rel4 vibrated
suspended	hung	DSA	ant1 continued
navigate	steer	DSA	guide ant2 guard
instruct	told to do something	DSA	ant1 learn

ANTONYMS (Cont'd.)

swagger	walk proud	WCT	con3 shrink
patriots	loves country	WCT	ant traitor(s)
tyrant	cruel ruler	WCT	tyrannize rel9 terrorizer
stark	bare cupboards	DSA	ant1 full
governor	leader	WCT	syn1 father
spunk	courage	DSA	courage ant1 fear
Represent-ative	people elect to speak for them	WCT	delegate rel 1 agent
colonel	officer	WCT	officer - 1 syn policeman
attorney	lawerying	WCT	rel 4 substitute
qualified	failed to qualify	DSA	capable ant 1 incompetent
postpone	wait until later	DSA	ant1 proceed
submit	agree to punishment	DSA	surrender ant 1conquer
satisfactory	okay or good	DSA	ant 3 deprived
humanity	people living on earth	WCT	syn6 mortality
inevitable	will continue, best answer	DSA	ant 3doubtful
unheeded	without stopping	DSA	careless ant 3 attentive
enlightened	now know	DSA	ant confused
prevailing	continuing way	DSA	ant1 isolating
brimming	full	WCT	empty
gushed	rushed out	WCT	trickle(d)
landscape	across the flat landscape	DSA	syn8 outline
scorching	hot dry season	DSA	burn ant1 cooling
parched	dry	DSA	dry ant2 moist
scrawny	scrawny branches	DSA	ant1 brawny
gnarled	gnarled trunk of baobab tree	DSA	rugged syn11 husky
progress	new things and ways	DSA	ant1 rest
defective	broken	DSA	ant2 improved
meteor	huge piece of planet	AHD	rainbow
rotated	turned around	WCT	syn7 rolled
staggered	almost feel backwards	DSA	hesitate ant4 tackled
reversed	backwards	WCT	rel7 transferred
dangling	hanging	DSA	suspending syn7 interrupted
tokens	game pieces	WNWT	marker1 ticket(s)

APPENDIX D

OBSERVATION CHECKLIST

Teacher # _____ Date_____ Time _____

Total Minutes Observed_____

#	What do you observe?	√ if you see it
1	Students looking up words in the dictionaries	
2	Students drawing word webs	
3	Students working in groups	
4	Students looking up words in the glossaries	
5	Students using graphic organizers	
6	Students using student anthology (textbook)	
7	Students using worksheets	
8	Students drawing pictures	
9	Students writing definitions for words	
10	Students using word stems	
11	Students acting out word meanings	
12	Students doing fill in the blank activities	
13	Students writing stories using the words	
14	Students discussing the use of words in different settings	
15	Students working individually	
16	Students talking to each other	
17	Students highlighting words in textbooks	
18	Multiple students interacting	
19	Students working in pairs	
20	Teacher is in the front of the room	
21	Teacher is modeling word webs	
22	Teacher is modeling graphic organizers	
23	Teacher is helping students individually	
24	Teacher is walking around helping groups	

APPENDIX E

TEST ADMINISTRATION RECORD

Class	Pre-test	Mid-test	Posttest
1	10/29/07	1/8/08	3/3/08
2	11/26/07	1/17/08	2/29/08
3	11/26/07	1/17/08	2/29/08
4	10/22/07	12/12/07	2/06/08
5	10/18/07	12/14/07	
6	10/18/07		1/31/08
7	10/18/07	12/17/07	1/31/08
8	10/19/07	12/11/07	2/7/08
9	10/22/07	12/12/07	2/7/08
10	11/19/07	1/8/08	2/29/08
11	11/19/07	1/14/08	3/10/08
12	10/24/07	12/21/07	2/13/08
13			
14	10/23/07	12/12/07	2/06/08
15	10/18/07	12/11/07	2/08/08
16	10/22/07	12/12/07	2/06/08

APPENDIX F

ASSISTANTS MEETING RECORD

Teacher	Training	Meeting	Meeting	Meeting
1	10/24/07	11/1/07	12/14/07	1/8/08
2	10/17/07	11/1/07	11/26/07	12/17/07
3	10/17/07	11/1/07	11/26/07	12/17/07
4	10/17/07	11/1/07	11/26/07	12/17/07
5	10/17/07	11/24/07	12/14/07	1/23/08
6	10/17/07	11/5/07	12/14/07	1/11/08
7	10/17/07	11/28/07	12/12/07	1/25/08
8	10/17/07	11/28/07	12/12/07	1/25/08
9	10/17/07	11/26/07	12/11/07	1/23/08
10	10/17/07	11/26/07	12/11/07	1/23/08
11	10/17/07	11/26/07	12/14/07	1/23/08
12	10/17/07	11/26/07	12/14/07	1/22/08
13	10/17/08			
14	10/17/07	11/26/07	12/14/07	1/22/08
15	10/17/07	11/26/07	12/1407	1/22/08
16	10/17/07	11/26/07	12/11/07	1/23/08

APPENDIX G

OBSERVATIONS RECORD

Teacher	Observation	Observation
1		
2	12/17/07	
3	12/17/07	
4	11/29/07	1/17/08
5	12/17/07	
6	12/5/07	1/29/08
7	12/5/07	
8	12/3/07	
9	12/03/07	
10	1/25/08	
11		
12	12/06/07	1/17/08
13		
14	12/06/07	1/17/08
15	12/6/07	1/30/08
16	11/29/07	

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