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The importance of vocabulary in the classroom

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The importance of vocabulary in the classroom

Abstract

The purpose of this review of the literature focused on two primary areas: (a) to examine the research findings as they related to vocabulary acquisition and instruction and (b) to determine the importance of the research findings regarding students' reading comprehension. This study also sought to provide educators with information as to what a comprehensive program of vocabulary instruction consists of as well as research-based vocabulary teaching strategies to use in the classroom to help students recognize and know words and word meanings and to improve students' comprehension.

The review examines the following three questions: (a) What is the relationship between vocabulary and reading comprehension? (b) What might a comprehensive program of vocabulary instruction in the classroom consist of? (c) What are effective, research-based vocabulary instructional strategies?

THE IMPORTANCE OF VOCABULARY IN THE CLASSROOM

A Graduate Literature Review

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Division of Middle Level Education

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BY

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has been approved as meeting the research requirement for the Degree of Master of Arts in Education.

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ABSTRACT

The purpose of this review of the literature focused on two primary areas: (a) to examine the research findings as they related to vocabulary acquisition and instruction and (b) to determine the importance of the research findings regarding students' reading comprehension. This study also sought to provide educators with information as to what a comprehensive program of vocabulary instruction consists of as well as research-based vocabulary teaching strategies to use in the classroom to help students recognize and know words and word meanings and to improve students' comprehension.

The review examines the following three questions: (a) What is the relationship between vocabulary and reading comprehension? (b) What might a comprehensive program of vocabulary instruction in the classroom consist of? (c) What are effective, research-based vocabulary instructional strategies?

The research clearly indicates that vocabulary acquisition is crucial to academic development because of the strong relationship between vocabulary and reading comprehension. Teachers should be aware of what the research says in order to develop a comprehensive program of vocabulary instruction for their classrooms and to find and use research-based instructional strategies that work in the classroom to improve students' comprehension and to help students recognize and know words and word meanings.

TABLE OF CONTENTS

	PAGE
APPROVAL	ii
ABSTRACT	iii
TABLE OF CONTENTS	iv
ACKNOWLEDGEMENTS	vi
CHAPTER 1	1
Introduction	1
Rationale	3
Purpose	3
Importance of Literature Review	4
Terminology	5
Research Questions	9
CHAPTER 2	10
Methodology for Writing a Review of Literature	10
Method of Identifying and Locating Sources	10
Procedures to Analyze Sources and Criteria to Include Sources	11
CHAPTER 3	13
Review of Literature	13
What is the Relationship Between Vocabulary and Reading Comprehension?	13
The Importance of Vocabulary Research	14

The Relationship Between Vocabulary Growth and Reading Comprehension	17
What Might a Comprehensive Program of Vocabulary Instruction Consist Of?	20
Researcher-Steven A. Stahl	20
Researcher-William E. Nagy	21
Researcher-Camille L.Z. Blachowicz	22
Researcher-Robert J. Marzano	23
Researchers-John J. Pikulski and Shane Templeton	26
Researcher-Karen Bromley	27
Effective, Research-Based Vocabulary Instructional Strategies	29
CHAPTER 4	33
Conclusions and Synthesis	33
Recommendations	35
Conclusion	35
REFERENCES	37

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Chapter 1

Introduction

This first chapter introduced the research that explains the importance of vocabulary acquisition and its connection to reading comprehension. This chapter also identified the focus of the review of literature, the implications of the research, and the key terms, with definitions, used throughout the review. Asselin (2002) identified the following facts concerning vocabulary and its importance to learning:

- The English language has approximately 5 million words.
- The average child enters school knowing approximately 5,000 to 6,000 words.
- Children learn 2,500 to 3,000 new words per year.
- Over 12 years of school, children learn another 36,000 words.
- It takes 10 exposures to a word to learn it.
- There are 110,000 words in printed school materials.
- Vocabulary is the most important influence on reading comprehension.

These are just some of the amazing facts about vocabulary development and its critical role in learning. Decades of research have resulted in significant implications about best ways to support students' vocabulary development. Yet very little has changed in classroom instruction.

Asselin (2002, p. 57)

After studying the research that spanned the years 1925 to 2003, Lehr, Osborn, and Hiebert (2004) concluded that the degree of students' vocabulary knowledge was strongly related to their reading comprehension, their overall academic success, and their

success later in life. “Given that students’ success in school and beyond depends in great measure upon their ability to read with comprehension, there is an urgency to providing instruction that equips students with the skills and strategies necessary for lifelong vocabulary development” (Lehr, Osborn, & Hiebert, 2004, p. 1).

Aarnoutse and van Leeuwe (1998) suggested that reading comprehension is all about understanding the meaning of written words, sentences, and texts. “Reading comprehension is a very active process, and is affected by complex interactions between the content of the text itself, the reader’s prior knowledge and goals, and various cognitive and metacognitive processes” (Aarnoutse & van Leeuwe, 1998, p. 144). Beck and McKeown (as cited in Aarnoutse & van Leeuwe, 1998) determined that vocabulary was concerned with knowledge of word meanings, involving both the lexical meanings of words, and the concepts connected with those meanings.

Stahl (2003) concluded that to know a word was to have a full and flexible knowledge, which involved an understanding of the core meaning and how it changed in different contexts. He stated that in order to know a word, both a definitional and a contextual knowledge were needed. Stahl reported that repeated encounters with a word allowed more and more information about the word to accumulate until a vague notion of the meaning of the word was formed. Research from McKeown, Beck, Omanson, and Pople (as cited in Stahl, 2003) found that four encounters with a word could not reliably improve reading comprehension, but twelve encounters would. With each encounter of a word, some information is remembered and reinforced. Repeated exposures create connections that are strengthened, thus allowing for a word to be defined (Stahl, 2003).

Rationale

My rationale for doing this review of literature was that I believed there was a direct connection between students' abilities to comprehend texts and their vocabularies. Ever since the beginning of my teaching career, I have been frustrated by many of my students' inability to recognize and know words and to comprehend text, so I wanted to investigate what the research said about vocabulary development and comprehension. First, I wanted to find out if the research supported the premise of a connection between vocabulary and reading comprehension. Second, I wanted to know what a comprehensive program of vocabulary development might consist of if implemented in the classroom. Last, I wanted to find ways to incorporate research-based vocabulary instruction into my curriculum for the purpose of helping my students learn new words and improve their comprehension. For this review, I searched for information that would enable me and other teachers to successfully incorporate a comprehensive vocabulary program into our various curriculums for the purposes of increasing students' vocabularies and ultimately enhancing their comprehension of the various texts they are required to read.

Purpose

Classroom teachers may benefit from this review of literature. Although many teachers may be *teaching* vocabulary in their classrooms, many of them may be unaware of the benefits of teaching vocabulary, what a comprehensive program of instruction may look like, or what the research says in regard to the most effective practices for vocabulary instruction. Included in this review of literature is an overview of some of the

research on vocabulary and comprehension. This review also provided information in the following areas: (a) it examined the relationship that exists between vocabulary knowledge and text comprehension; (b) it identified characteristics of comprehensive vocabulary programs, and (c) it identified various research-based instructional strategies to use in the classroom for the purposes of helping students to become more aware of words and language; to become more independent in their vocabulary acquisition; and to increase their level of comprehension. Ultimately, I will share this review with the teachers on my team and the principal at West Middle School in Anamosa, Iowa, for the purposes of helping them recognize the importance of directly teaching vocabulary, recognizing the characteristics of a comprehensive vocabulary program, and providing them with effective, research-based vocabulary learning strategies to incorporate into their curricula. I will also share this review with the district's reading specialist, for the purpose of communicating the findings with other teachers and administrators across the district.

Importance of Literature Review

Because of increased accountability for student learning from the *No Child Left Behind* (NCLB) legislation, all classroom teachers, not just those focused on literacy, may want to understand the connection between vocabulary instruction and comprehension. Teachers may want to know what a comprehensive vocabulary program might look like. Teachers and administrators may also see the need for incorporating research-based, vocabulary instructional strategies into the curriculum as a means of increasing students' comprehension of the various texts they are required to read in their

classes. This literature review surveyed selected information regarding the importance of vocabulary instruction, summarized the benefits as it related to comprehension, and identified effective vocabulary strategies for use by teachers in the classroom. Teachers and administrators may want to use this review to help initiate a comprehensive vocabulary program across the K-12 curriculum.

Terminology

In order for readers to have a common understanding of the terminology used in this literature review, the following definitions are included:

Comprehensive instruction: Comprehensive instruction means vocabulary instruction that includes more than a list of words to be taught at the beginning of the week; it “involves a common philosophy and shared practices” (Blachowicz & Fisher, 2005, p. 1).

Contextual information: “Contextual information can be defined as knowledge of the core concept the word represents and how that core concept is changed in different contexts” (Stahl, 1986, p. 663).

Deep processing: The term “deep” processing is defined as “either making more connections between new and known information (or relating the word to more information than the student already knows) or spending more of one’s mental effort on learning” (Stahl, 1986, p. 664).

Definitional information: “Definitional information can be defined as knowledge of the logical relations between a word and other known words, as in a dictionary definition. In teaching, definitional information can be provided through

definitions, but also through synonyms, antonyms, prefixes, suffixes, roots, classification, etc.” (Stahl, 1986, p. 663).

Expressive vocabulary: Expressive vocabulary is defined as the words used in a person’s speech and in their writing (Blachowicz & Fisher, 2005).

Integration: “The first property of powerful vocabulary instruction is that it integrates instructed words with other knowledge. This emphasis in instruction is an outgrowth of schema theory. For our purposes here, the essence of schema theory lies in two points: (1) that knowledge is structured – it consists not of lists of independent facts, but of sets of relationships, and (2) that we understand new information by relating it to what we already know” (Nagy, 1988, p. 10).

Meaningful use: “Effective vocabulary instruction helps the learner to use the instructed words meaningfully....vocabulary instruction that makes students think about the meaning of a word and demands that they do some meaningful processing of the word will be more effective than instruction that does not.... Effective vocabulary instruction requires students to process words meaningfully – that is, make inferences based on their meanings – and includes tasks that are in some ways parallel to normal speaking, reading, and writing” (Nagy, 1988, p. 24).

Multiple exposure: Multiple exposure is the number of times students are involved with the same information about the words’ meanings and the number of times students are provided with the words in different contexts and settings (Stahl, 1986).

Reading comprehension: “Reading comprehension refers to understanding the meaning of written words, sentences and texts. Readers try to understand the written message of the writer at different levels (lexical, syntactic, semantic, and pragmatic)” (Aarnoutse & van Leeuwe, 1998, p. 144).

Receptive vocabulary: Receptive vocabulary is defined as the words that are understood by the reader when they are seen in print (Blachowicz & Fisher, 2005).

Repetition: “Repetition in word knowledge is related to what has been called the ‘verbal efficiency hypothesis’ (Perfetti & Lesgold, 1979), or the ‘bottleneck hypothesis.’ According to this hypothesis, a reader has only limited processing capacity available for tasks that require conscious attention. If the reader can decode well and knows all of the words in the text well, then identifying the words of the text can proceed more or less automatically so that most of the reader’s attention can be given to comprehension.... Vocabulary instruction must therefore ensure not only that readers know what the word means, but also that they have had sufficient practice to make its meaning quickly and easily accessible during reading” (Nagy, 1988, p. 23).

Vocabulary: “Vocabulary is concerned with the knowledge of word meanings. This involves the lexical meanings of words, and the concepts connected with these meanings” (Aarnoutse & van Leeuwe, 1998, p. 144).

Vocabulary instruction: “The term *vocabulary instruction* is used to refer to the teaching and development of students’ understandings of word meanings” (Blachowicz & Fisher, 2005, p. 2).

Word consciousness: “Simply stated, word consciousness refers to awareness of and interest in words and their meanings. As defined by Anderson and Nagy (1992), word consciousness involves both a cognitive and an affective stance toward words. Word consciousness integrates metacognition about words and motivation for learning words; motivation includes interest and enjoyment as well as a sense of purpose” (Graves & Watts-Taffe, 2002, p. 144).

Research Questions

Before I could begin to frame my research questions, I had to decide just exactly what I wanted to find out in regard to vocabulary. I also had to focus on *how* what I found out might help me with my daily teaching and the long-term goals I hold for my students. Based on these criteria, I generated a list of questions and examined them closely. Ultimately, I selected the questions that I felt pointed me in the direction I needed to go. The following questions will be the focus of the review of literature:

1. What is the relationship between vocabulary and reading comprehension?
2. What might a comprehensive program of vocabulary instruction in the classroom consist of?
3. What are effective, research-based vocabulary instructional strategies?

Chapter 2

Methodology for Writing a Review of Literature

I have always loved words and reading, and I have long believed that the acquisition of words and the comprehension of written materials were critical for students in order to achieve success in school and beyond. Over the years, I have noticed that many of my students have problems recognizing the meanings of words. Many of these same students seemed to struggle with comprehending the required reading in their 7th grade classes. I believed vocabulary and comprehension were linked, and now because of the focus on the law, *No Child Left Behind* (NCLB) and test results, I wanted to know what exactly I could do in my classroom to help my students increase their vocabulary as well as to improve their comprehension of written texts.

It was for these two reasons that I decided to investigate the issue through a review of the literature in order to determine if vocabulary acquisition and instruction were important and whether they were directly linked to increased comprehension. If results indicated that this was true, I wanted to identify what a comprehensive vocabulary program consisted of. Finally, I wanted identify effective, research-based instructional strategies that would best be used in the classroom.

Method of Identifying and Locating Sources

I began my search by reading Janet Allen's book, *Words, Words, Words* (1999), and used the references from it as a starting point for further reading and research. Using some of these references, I requested various articles and books from Rod Library and used them to compile information and identify additional resources. I also accessed

online electronic databases such as the University of Northern Iowa's Rod Library's Wilson Web and Grant Wood Area Agency's ProQuest. I conducted searches on these databases to find research documents that were relevant to the topics of vocabulary, the relationship between vocabulary development and reading comprehension, and effective, research-based vocabulary teaching strategies. Among the keywords used in the search were the following: *vocabulary strategies*, *research-based vocabulary strategies*, *vocabulary acquisition*, *vocabulary learning*, *teaching vocabulary*, *vocabulary development*, and *vocabulary and reading comprehension*. Using many of the same search terms, I also used the search engine Google to search the Internet for relevant information.

Procedures to Analyze Sources and Criteria to Include Sources

After collecting a number of sources, I considered the source, the date of publication, and the author to determine the usefulness of the information. I conducted a preliminary examination of the sources in terms of credibility, relevance to the research questions, whether or not they contained current information, and whether they contained enough information about my topic. One of the criteria I employed as to whether to use the source or not was if the author or source were referenced multiple times. Several authors, among them Stahl, Nagy, Allen, Marzano, Blachowicz, and Kame'enui, were mentioned regularly in the readings. Even when some of the sources were dated, as with Stahl and Nagy, I decided to use them because they were referenced multiple times and the information was useful, as it pertained to my research questions. These sources formed a conceptual framework from which I began to work. I then read and analyzed

the readings to make sure they addressed the topic. Finally I looked for the themes of comprehension and vocabulary learning, comprehensive vocabulary instruction, and effective classroom instruction, and searched for strategies that connected them. Sources that did not fit the criteria were not included in the review.

Chapter 3

Review of Literature

In this chapter, I examined the relationship between vocabulary and reading comprehension, identified what comprehensive vocabulary instruction in the classroom consists of, and described research-based vocabulary instructional strategies that can best be used to help improve students' reading comprehension. The first section of this chapter focused on findings that answered the question about the relationship between vocabulary and reading comprehension. In the second section, I provided readers with different researchers' views as to the components needed in the classroom for the purposes of implementing a comprehensive program of vocabulary instruction. Finally, I described effective, research-based vocabulary instructional strategies that may be incorporated into classroom curriculums.

What is the relationship between vocabulary and reading comprehension?

Davis, Curtis and Longo (2001) found that the importance of vocabulary to reading achievement, or more specifically reading comprehension, had been established for many years as they looked back at the early research of Thorndike in 1917 and Davis in 1944. "The importance of vocabulary in reading achievement has been recognized for more than half a century" (National Reading Panel, 2000, p. 15). Chall (as cited in Curtis & Longo, 2001) found that as students moved into middle school and beyond, knowledge of word meanings and the ability to access that knowledge efficiently were important factors in both reading and listening comprehension. "Most people feel that there is a common sense relationship between vocabulary and comprehension—messages are

composed of ideas, and ideas are expressed in words” (Smith, 1997, p. 1). Smith pointed out earlier studies of Nelson-Herber (1986), Nagy (1988), and Baker, Simmons, and Kame’enui (1995), which proved the strong correlation between vocabulary knowledge and reading comprehension.

In spite of this importance, Graves and Watts-Taffe (2002) maintained the history of vocabulary research to have been sporadic, at best. For about 30 years after the 1921 publication of the first edition of Thorndike’s *The Teacher’s Word Book*, “vocabulary was a central focus of educational research” (Graves & Watts-Taffe, 2002, p. 140). In spite of its importance, a sharp decline in vocabulary research occurred during the 1950s. Then, in the 1980s, Richard Anderson, William Nagy, and others at the Center for the Study of Reading, along with Isabel Beck, Margaret McKeown, and others at the Learning Research and Development “undertook programs of research on vocabulary that again made vocabulary study a vital part of educational research” (Graves & Watts-Taffe, 2002, p. 140). “The importance of early reading and writing instruction has been heavily publicized. In contrast, vocabulary development, although clearly recognized, has not received the same degree of instructional attention as other literacy skills” (Baker, Simmons, & Kame’enui, 1995, p. 1).

The Importance of Vocabulary Research

According to Graves and Watts-Taffe (2002), “what we know suggests that vocabulary plays an important role in reading, in many other aspects of schooling, and in the world beyond school” (p. 141). Blachowicz and Fisher (2005) agreed and acknowledged that, “the connection between vocabulary and reading comprehension, as

well as vocabulary and school performance in all content areas, is one of the most strongly established in educational research” (p. 1). Blachowicz and Fisher (2005) also found that “in addition to affecting reading performance, vocabulary knowledge affects a student’s ability to participate fully in both social and academic classroom routines” (p. 2). Blachowicz and Fisher (2005) looked at vocabulary in regard to the content areas and identified vocabulary as being “critical to the improvement of comprehension and written expression (p. 2) in the areas of Reading and Language Arts. They further stated that instruction in vocabulary is vital in developing new concepts and understanding increasingly complex ideas in Mathematics, Science, and Social Studies because “vocabulary is directly related to knowledge acquisition” (Blachowicz & Fisher, 2005, p. 2). The National Reading Panel (2000) also found that the “importance of vocabulary knowledge has long been recognized” (p. 3). Their findings further stated that vocabulary “occupies an important position in learning to read” (p. 3). The National Reading Panel concluded by saying that vocabulary “is one of the most important areas within comprehension and should not be neglected” (p. 9).

According to Graves and Watts-Taffe (2002), the findings of more than 100 years of vocabulary research have continued to identify vocabulary as being important to learning and comprehension. Both Terman (1916, as cited in Graves & Watts-Taffe, 2002) and Sternberg (1987, as cited in Graves & Watts-Taffe, 2002) recognized vocabulary knowledge as being a strong indicator of verbal ability. Duke and Reynolds (2005) identified a definite relationship between vocabulary and comprehension and reported that, “the relationship is unparalleled in strength and importance. One’s

knowledge of vocabulary relevant to a text is integrally related to comprehension of that text” (p. 11). Moats (2001, as cited in Juel & Deffes, 2004) coined the phrase “word poverty” and suggested that it is most prevalent in minority, English language learning, or low socioeconomic background student populations. Juel and Deffes (2004) also found vocabulary to be a predictor of word reading ability at the end of 1st grade and reading comprehension in the 11th grade and suggested that gaps in vocabulary are troubling to educators. Hart and Risley (1995, as cited in Graves & Watts-Taffe, 2002) agreed that poverty can restrict the vocabulary learning of young pre-school children as well as make vocabulary learning more difficult. White, Graves, and Slater (1990, as cited in Graves & Watts-Taffe, 2002) also agreed that there is a difference in vocabulary size between disadvantaged and more advantages students.

Research in the area of vocabulary acquisition has made many teachers aware of the direct link between vocabulary knowledge and reading comprehension (Graves & Watts-Taffe, 2002). Harmon (2002) reported that teachers in middle and high school classrooms recognized that many of their students struggled with comprehension, due to limited word knowledge. When examining the relative contributions of decoding, vocabulary, and spatial intelligence to reading comprehension, Aarnoutse and van Leeuwe (1998) found that vocabulary, when measured in grades 3 and 6, appeared to be the most important predictor of reading comprehension, measured in Grade 6.

While most teachers may believe vocabulary instruction to be an integral component of literacy instruction, as well as content learning, many still hold onto and teach vocabulary in traditional and marginally effective ways (Harmon & Hedrick, 2001).

Allen (2000) agreed, saying that many teachers, even though they may intuitively know that it is ineffective, continue to provide students with lists of vocabulary words to look up, define, use in sentences, and memorize for quizzes, for lack of something more effective. Allen (1999) described this method of teaching vocabulary as the traditional “assign, define, and test,” (p. 2). Most students, when given vocabulary lists to learn, seldom, if ever, integrate the words they *study* into their natural language (Allen, 1999).

Allen (2000) suggested that, instead of teachers continuing to ask themselves the same two questions – ‘How can we effectively teach new words?’ and ‘What can we do to make sure students remember those words?’ – they should do something that will make a difference. Bromley (2004) recommended that instead of using word lists, dictionary definitions, and discussion, teachers should provide students with “multi-dimensional, semantically focused, and interactive encounters with words that theory and research suggest are most effective” (p. 3).

The Relationship Between Vocabulary Growth and Reading Comprehension

Research from Baker, Simmons, and Kame’enui (1995) supported the importance of reading: “However, reading is probably the most important mechanism for vocabulary growth throughout a student’s school-age years and beyond” (1995, p. 4). Based on this, Allen proposed that teachers provide extra time for reading, which she considered valuable for acquiring new vocabulary. Allen (1999) also determined that in addition to more reading, readers with poor vocabularies needed direct instruction in order to become independent word learners. Marzano (2004) agreed by stating, “...there are two distinct philosophies regarding the best approach to vocabulary development. One

philosophy might be referred to as *wide reading*, and the other might be referred to as *direct instruction*" (p. 108).

Wide reading

The research of both Stanovich and Perfetti (as cited in Aarnoutse & van Leeuwe, 1998) agreed with the concept that the act of reading added to vocabulary growth. Francis and Simpson (2003) identified two significant implications for their teaching: "the need to modify some of the traditional methods of vocabulary instruction and the need to challenge students' beliefs about vocabulary knowledge" (p. 73). Smith (1997) reported that vocabulary knowledge could be developed naturally through reading. However, research by McKeown and Beck (as cited in Smith, 1997) found that direct instruction was more effective and more efficient than the incidental learning from reading for the acquisition of a particular vocabulary.

Allan (2000) also cited the results of several research studies, which supported the importance of reading to vocabulary acquisition, in that reading was, almost certainly, the most important means for students to experience new vocabulary growth in school and after. Graves and Watts-Taffe (2002) maintained students should read as much and as widely as possible to increase their vocabulary. Johnson and Rasmussen (1998) agreed by advocating wide reading for students. They stated that incorporating 15 to 45 minutes of silent sustained reading daily is an effective use of instructional time.

Nagy (1988) found that the amount of reading a child does directly affects the number of words learned. He estimated that the average fifth grader who read for 25 minutes a day both in and out of school would encounter approximately 20,000

unfamiliar words in a year. One in 20 words learned from context would add 1,000 words per year to a student's knowledge. One thousand more words could be learned if teachers had students read an additional 25 minutes per day.

Aarnoutse and van Leeuwe (1998) provided the following definition of reading comprehension: "Reading comprehension refers to understanding the meaning of written words, sentences and texts" (p. 144). The researchers described reading comprehension as being an active process during which readers attempt to make meaning of the author's message at lexical, syntactic, semantic, and pragmatic levels. This entire process is affected by interactions with the text's content, the prior knowledge of the reader, and a variety of cognitive and metacognitive processes (Pressley & Afflerbach, as cited in Aarnoutse & van Leeuwe, 1998). The research of Beck and McKeown (as cited in Aarnoutse & van Leeuwe, 1998) defined vocabulary as the knowledge of word meanings, or more precisely, the lexical meanings of words, and the concepts connected with these meanings.

The importance and power of words cannot be over-stated; "...they literally have changed and will continue to change the course of world history" (Pikulski & Templeton, 2004, p. 1). Pikulski and Templeton (2004) further stated that the two greatest tools teachers could give students to help them succeed, not only in education, but in life, were the following: (a) a rich vocabulary, and (b) the skills to use the words. They also reported that a large vocabulary predicted and reflected high levels of reading achievement in addition to being vitally important for success in life.

Studies by Beck, McKeown, and Kucan (2002) and Juel, Biancarosa, Coker, and Deffes (2003) (as cited in Pikulski & Templeton, 2004) stated that schools have not done enough to help children who come to school with weak vocabulary development catch up. Juel, et al. (2003) (as cited in Pikulski & Templeton, 2004) reported that what oral language stimulation these students were being exposed to in the classrooms was incidental and not direct and intense enough to impact their vocabulary development. Pikulski and Templeton (2004) reported that because children needed to acquire about 3,000 words per year, a comprehensive approach in teaching vocabulary should be implemented in classrooms.

What a Comprehensive Program of Vocabulary Instruction Might Consist Of

Blachowicz and Fisher (2005) suggested that the general goal of a comprehensive vocabulary program should be to expand receptive and expressive vocabularies, “and to continually move words from the receptive level to the expressive level” (p. 3). They further recommended an additional goal, which would “provide many opportunities for children to acquire ‘deep’ knowledge of words, the ability to understand and use words flexibly and appropriately in many different contexts” (p. 3).

Researcher-Steven A. Stahl

In his research, Stahl (1986) described three principles that characterized effective vocabulary instruction. First, students should be provided with both definitional information and contextual information. He found that comprehension improved when students were provided with both contextual and definitional information, and that comprehension was most improved when “a number of different activities or examples

using the word in context are used” (p. 663). Second, vocabulary instruction should include and encourage deep processing so students are better able to remember what they are learning. Stahl (1986) identified three levels of processing, association processing, comprehension processing, and generation processing, in discussing vocabulary instruction. Each level builds upon the previous level, and the important concept is that learners “make the word their own by interacting with it, by creating a novel synthesis of the new word and known information” (p. 665). Third, students should be provided with multiple exposures to words in different contexts and settings. Stahl (1986) found that by providing students with “multiple repetitions of the same information about each word’s meaning” (p. 665) and “multiple exposures to the word in different contexts or settings” (p. 665), comprehension was significantly improved.

Researcher-William E. Nagy

Nagy’s research findings (1988) also identified three properties of effective vocabulary instruction: (a) integration, in which new words are related or connected to what was already known; (b) repetition, or seeing words over and over so that word meanings are quickly and easily accessible during reading; and (c) meaningful use, where students use the words in meaningful ways. Nagy’s integration in vocabulary instruction was “an outgrowth of schema theory” (p. 10), which is that knowledge is structured in “sets of relationships” (p. 10), and new information is understood by relating it to what is already known. For Nagy, the point of repetition was for words to be known “more or less automatically so that most of the reader’s attention can be given to comprehension” (p. 23). Regarding meaningful use, Nagy stated that, “if students are expected to learn to

use words meaningfully in reading or writing, then instruction must include meaningful use of the words. Effective vocabulary instruction requires students to process words meaningfully – that is, make inferences based on their meanings – and includes tasks that are in some ways parallel to normal speaking, reading, and writing” (p. 24).

The three properties or principles of effective vocabulary instruction identified in the research findings of Stahl (1986) and Nagy (1988) were closely related. Stahl’s deep processing corresponded with Nagy’s integration in that both identified the importance of connecting new knowledge to knowledge that is already known. Also, Stahl’s idea of multiple exposures of words related to Nagy’s ideas of repetition of words and meaningful use, in that both researchers identified the importance of students being provided with multiple exposures to words in order to improve comprehension.

Researcher-Camille L.Z. Blachowicz

Blachowicz (2000) identified seven main principles for effective vocabulary instruction. The first principle for vocabulary learning to take place was to immerse students in words. Although the learning that took place due to the exposure of words did not guarantee learning specific vocabulary words, it did help develop general vocabulary. A second principle of effective vocabulary instruction was for students to be actively involved in discovering how words relate to experiences and to one another. Within this principle students may be involved in learning new experiences and the words that pertained to these experiences; they may be involved in discussion or they may be making word meanings and relationships visible using semantic webs, maps, or organizers. This idea closely corresponded with Stahl’s deep processing and Nagy’s

integration in that they all stressed the importance of making more connections between new and known information. Blachowicz's third principle for learning vocabulary was to have students personalize the learning through their own experiences. This happened when students used prior knowledge to learn new words, acted out word meanings, and created their own mnemonics or key words to help them learn and remember new words. The fourth principle Blachowicz identified in order for effective vocabulary learning to take place was to provide students with multiple sources of information along with multiple opportunities to use new words meaningfully. The fifth principle was to have the students themselves select the vocabulary words they wanted to learn. A sixth principle, which ensured that vocabulary learning would occur, was for students to be taught how to develop independent word learning strategies such as using context, dictionaries, and structural analysis or morphology. Finally, Blachowicz suggested that in order for vocabulary learning to occur, students needed multiple experiences to use words in meaningful ways, which related to Stahl's multiple exposure and Nagy's meaningful use.

Researcher-Robert J. Marzano

Marzano (2003) maintained that although the research does not support wide reading as being sufficient on its own to ensure vocabulary development, it remains a critical component of vocabulary development. He identified direct instruction as the second critical component in order for vocabulary development to occur. Marzano stated that direct instruction is not having students memorize definitions, but rather it is "that students should elaborate on the meaning of new words they encounter" (p. 140). He

also indicated that direct instruction should be focused on vocabulary from academic subject areas rather than on words from high frequency word lists because “direct instruction in words specific to academic content can have a profound effect on students’ abilities to learn that content” (p. 140). Summarizing the research on wide reading and direct vocabulary instruction, Marzano identified what a comprehensive program of vocabulary development might look like. For example,

- students are engaged in wide reading about subject matter content and content of their choice;
- students receive direct instruction on words and phrases that are critical to their understanding of academic content;
- students are exposed to new words multiple times; and
- students are encouraged to elaborate on their understanding of new words using mental images, pictures, and symbols.

Marzano (2003, p. 140-141)

Marzano (2004), long a proponent of direct instruction, later described eight research-based characteristics of effective direct vocabulary instruction in his book, *Building Background Knowledge for Academic Achievement*. In his research, Marzano identified the first characteristic that vocabulary instruction should not rely on definitions of words, but rather descriptions of words, or that “words’ meanings be presented to students in everyday language” (p. 71). His second characteristic was for students to represent their knowledge of words in both linguistic and nonlinguistic ways. He contended that when students represented words using graphic representations, pictures,

and pictographs, along with writing descriptions, the information was anchored in permanent memory. Multiple exposures to words in a variety of ways, the third characteristic, allowed students to move from superficial knowledge of meaning to deeper levels of understanding the meaning. Multiple exposures also helped anchor information in permanent memory. Multiple exposure to words was also identified as being an important component of vocabulary instruction by Stahl (1986), Nagy (1988) and Blachowicz (2000). Marzano's fourth characteristic of effective vocabulary instruction identified the importance of teaching word parts because it not only enhanced students' understanding of the words, but it enabled them to determine the meaning of unknown words. Marzano also determined that different types of words required different types of instruction. A sixth characteristic identified by Marzano was the need for students to discuss the words they were learning, which allowed them to gain a deeper understanding of the words. Discussion also increased "the probability that they will store the words in permanent memory" (p. 86). Another characteristic Marzano determined was important for effective vocabulary instruction to take place was that of having students play with words. "One powerful instructional technique that schools typically underuse is games" (p. 87). "When students are playing vocabulary games, they are having fun and experiencing vocabulary terms in a new context and seeing them from different perspectives" (p. 87). Marzano's eighth characteristic indicated that instruction should identify and teach those words that are critical to students' success in the various academic subject areas.

Researchers-John J. Pikulski and Shane Templeton

Because Pikulski and Templeton (2004) have estimated that students need to learn about 3,000 words a year, they identified eight components in their comprehensive approach for teaching and developing vocabulary. Their first component, “instructional” read-aloud events, was based on the report *Becoming a Nation of Readers* (Anderson, Heibert, Scott, and Wilkerson, 1985), which concluded, “The single most important activity for building the knowledge required for eventual success in reading is reading aloud to children.” Therefore, in order to increase knowledge of vocabulary, teachers needed to discuss word meanings in addition to reading aloud. A study by Elley and another by Juel, Biancarosa, Coker, and Deffes (as cited in Pikulski & Templeton, 2004), both suggested that growth in vocabulary was enhanced by a discussion of and a focus on vocabulary words. A second component identified by Pikulski and Templeton (2004) was that teachers needed to provide direct instruction of vocabulary words. They suggested that in narrative readings, teachers select words “that represent concepts that are critical to understanding the selection *and* which are not adequately defined in context” (p. 5). For informational texts, which usually contained more new and unknown words, the words should be focused on before reading to provide students with a basis for further learning. Marzano’s research (2004) also identified direct instruction of vocabulary words as being important to vocabulary instruction, although he suggested the words taught be those critical to understanding the academic content. Pikulski’s and Templeton’s third component suggested students be taught the meanings of prefixes, suffixes, and root words in order for them to become adept at determining word meanings

when they encounter new words in print. The research evidence from Anderson and Freebody (as cited in Pikulski & Templeton, 2004) determined that if students were taught to understand how this combination of word parts worked, they would have a strong understanding necessary for vocabulary growth. Pikulski and Templeton's (2004) fourth component was for spelling instruction to be linked to reading and vocabulary instruction. They stated that because spelling knowledge is applied to a student's ability to decode words during the reading process (Templeton, 2003a, 2003b), it is also important for reading and vocabulary development. Pikulski and Templeton also included in their description of a comprehensive approach for teaching and developing vocabulary a fifth component, which advocated the use of dictionaries and thesauruses and the need for teachers to teach their uses to students.

The usage notes in dictionaries reflect a powerful and consistent research finding: every word/concept we know, and the degree to which we really know it, depends on the relationship of that word/concept to other words/concepts. The thesaurus, another resource for word learning, also helps learners make fine distinctions among concepts and words. This *differentiation* of learners' conceptual domains is the essence of vocabulary development and growth.

Pikulski & Templeton (2004, p. 7).

Pikulski and Templeton (2004) also identified teaching students how to apply word-learning strategies as the sixth important component in their comprehensive approach. They suggested a four-step process that when learned and internalized, could be used by students to learn the meanings of words they encounter as they read. The

research by Blachowicz (2000) also identified the importance of teaching students word learning strategies. The research of Nagy and Anderson (as cited in Pikulski & Templeton, 2004) that advocated the idea that wide reading should be encouraged because it is vital to the growth of students' vocabularies provided the basis for the seventh component in Pikulski's and Templeton's comprehensive approach. Marzano (2004) was also an advocate of wide reading to help in vocabulary growth. Finally, Pikulski and Templeton suggested that teachers help students develop an interest and awareness in words and language through a variety of activities. Blachowicz (2000) and Marzano (2004) also identified this concept as being an important component in effective vocabulary instruction.

Researcher-Karen Bromley

Bromley (2004) stated the obvious "there is no one 'best method' for teaching new words" (p. 6) and suggested nine recommendations for sound vocabulary instruction. The first recommendation was to bring an "attitude of excitement and interest about language and words" (p. 6) into the classroom. Second, find out if students already know the word or not and assess whether or not the word is important before teaching it. Third, Bromley suggested varying when new words are taught based on the idea that sometimes key words are better taught before the reading, but that other times, it "makes sense for students to meet new words on their own so they can practice word learning strategies independently" (p. 7). Finally, there are times when time should be spent after reading developing the multiple dimensions of words. A fourth recommendation was for teachers to "activate students' schema and metacognition" (p. 7), in order to provide students a

way to link new concepts and knowledge to what they already know. Stahl (1986), Nagy (1988), and Blachowicz (2000) are all proponents of linking new knowledge to the known. Bromley's fifth recommendation suggested that students be helped to identify multiple meanings of words and paraphrase definitions in their own words. Teaching students to dissect words for the purpose of learning the meanings of word parts, Bromley's sixth recommendation, provided students with the ability to infer, on their own, the meanings of new words they might encounter. Marzano (2004) and Pikulski and Templeton (2004) also suggested that students be taught word parts. Another recommendation advocated by Bromley was to help students become actively engaged in interacting with each other when learning new words. Bromley also suggested that teachers "model and teach word learning as an active strategy for independent use" (p. 7). Finally, Bromley advocated using the Internet "as a way to motivate word learning" (p. 8).

Effective, Research-Based Vocabulary Instructional Strategies

Johnson and Rasmussen (1998) identified six strategies for developing students' vocabulary: a) word walls, which were used to display words in context; b) semantic maps, which displayed new words and showed their relationship to other words; c) wide reading, which promoted and encouraged wide reading; d) journals, which were used to identify and record interesting words found in reading; e) teacher language, which was when the teacher modeled the use of new words and precise language; and f) interesting words, which was pointing out interesting or effective ways writers used words.

Johnson and Rasmussen (1998) also offered two strategies to be used to improve productive vocabulary. The first strategy was classifying, which they identified as a thinking skill “that can be used to support students’ use and exploration of word dimension” (p. 205). Classifying was arranging items or information into given categories and consisted of three steps which “are to (a) look at the categories and their definition, (b) look at the items, and (c) move items into groups according to similarities or association” (p. 205). The second strategy, “*Super Word Web (SWW)* is a strategy that uses a visual organizer to develop depth and dimension of word knowledge” (p. 206). The authors maintained that classifying and SWW could be used to attain the goals of effective vocabulary instruction, which included expanding and strengthening students’ vocabulary and moving new words into their productive vocabulary.

Zooming In and Zooming Out as described by Harmon and Hedrick (2001) was an instructional framework to be used for teaching students how to learn new words for new and difficult concepts. They maintained the most challenging task in effective vocabulary instruction was teaching new words for new concepts because students may not have prior knowledge about words and the concepts related to them. Harmon and Hedrick stated that this technique allowed students “to move beyond a superficial definition to gain a richer and deeper understanding of a term or concept. This understanding then places students in a better position to comprehend difficult texts that include the term” (2001, p. 24). The authors stated “In general, the technique enables students to make connections, think critically about the importance of ideas, associate the

term with related ideas and concepts, and eventually articulate a summary statement about the concept” (2001, p. 25).

Ruddell and Shearer (2002) advocated using the Vocabulary Self-Collection Strategy (VSS) with students. They theorized that social influences could also be used as a source of vocabulary acquisition. Their study using VSS found it to be effective for increasing the depth and breadth of vocabulary knowledge. In addition, it proved to be a way for students to move toward becoming strategic, independent word learners.

In her book *It's Never Too Late* (1995), Allen stated that she wanted to move her students from being dependent readers to being independent readers. To encourage her students to develop independent strategies, she developed a list of twelve strategies for her students to use. “I developed some ways we could work together to determine the meaning of unknown words and develop a deeper understanding of words we might know peripherally” (p. 103). Some of the strategies included looking at the word in relation to the sentence, rereading the sentence, looking for key words in the sentence that might define the unknown word, reading around the word and going back again, and thinking about what would make sense.

Allen (2000) described three strategies that made a difference in helping students' vocabulary growth. First, she proposed that teachers increase the amount of time students spend on reading and talking about reading. By increasing the time spent on reading and talking about it, students were exposed to a wide variety of words. Talking about words and the interesting ways words were used was also beneficial to students' knowledge of language. A second strategy was word study, which allowed students to

expand their word knowledge base and develop strategies for independence. Word study provided a more in-depth study of words and concepts than students got previously in their encounters with reading. Finally, Allen held that students be allowed to see and hear teacher thinking in terms of words and word meanings. When teachers stopped and thought aloud about voice and tone in a text as a way to infer word meaning, it allowed students to understand better what good readers do naturally.

Harmon (2002) agreed with Allen on two points: (a) students need discussion of vocabulary words and word learning strategies and (b) students need direct word study during which they are taught independent word learning strategies. Although Harmon's focus was on struggling readers, many of whom need more intensive help with independent word learning strategies in order to successfully help them to become independent and lifelong readers, all students can benefit.

Chapter 4

Conclusions and Synthesis

The research supports the idea that there is a strong relationship between vocabulary and reading comprehension. They are inexorably linked in that reading enhances vocabulary acquisition and vocabulary knowledge enhances reading comprehension. “Vocabulary experts agree that adequate reading comprehension depends on a person already knowing between 90 and 95 percent of the words in a text” (Hirsch, 2003, p. 16). Not only does the degree of students’ vocabulary knowledge relate to reading comprehension, it also strongly relates to their overall academic success (Lehr, Osborn, & Hiebert, 2004).

The research evidence is strong that vocabulary can enhance reading comprehension. In order for this to happen, teachers need to be made aware of this strong connection between vocabulary and reading comprehension. Teachers need to know what constitutes a comprehensive program of vocabulary instruction in a classroom. Finally, teachers need to know about and use effective, research-based instructional strategies in order to increase students’ vocabularies, and which ultimately leads to an increase in reading comprehension. Education today is in a time of accountability, and high stakes testing is being used to measure student learning. With this in mind, most teachers want their students to learn to their maximum potentials, so by creating a comprehensive vocabulary instruction program and incorporating research-based vocabulary instructional strategies into their curriculums, they can increase students’ vocabularies and enhance their reading comprehension. Just as we’ve been

hearing in our middle school that all teachers, not just the language arts teachers, need to be teachers of reading, all teachers also need to be teachers of vocabulary.

The focus of my research was to determine whether or not a relationship between vocabulary and reading comprehension existed, and if it did, to discover what a comprehensive vocabulary program might look like. Additionally, I was determined to find effective, research-based vocabulary instructional strategies to use in the classroom setting. Through this review of the literature, I found that the research did, indeed, identify a strong correlation between vocabulary and reading comprehension. I discovered a variety of components, that when in place, form the basis of a comprehensive program of vocabulary instruction. I also found effective, research-based vocabulary instructional strategies to use in the classroom. Curtis and Longo (2001) looked at the early research of Thorndike and Davis and found that the importance of vocabulary to reading comprehension had been established for quite some time. Smith (1997), focused on the research of Baker, Simmons, and Kame'enui (1995), Nagy (1988), and Nelson-Herber (1986), which also showed a strong correlation between vocabulary and reading comprehension. Aarnoutse and van Leeuwe (1998), also looked at the earlier research of Sternberg (1987), Thorndike (1973), Calfee and Drum (1978), and Davis (1968), and concluded that it is "well-known that a strong correlation exists between reading comprehension and vocabulary (p. 146). Graves and Watts-Taffe (2002) also found a direct link between vocabulary and reading comprehension.

Different researchers identified a variety of properties or principles that comprised effective vocabulary instruction. Stahl (1986) and Nagy (1988) each described three,

while Blachowicz (2000) described seven main principles of effective vocabulary instruction. Marzano (2004) identified two critical components for vocabulary development: wide reading and direct instruction of vocabulary, and then went on to describe eight characteristics of effective direct vocabulary instruction. Pikulski and Templeton (2004) also identified eight components. Bromley (2004) advocated nine research-based recommendations for sound vocabulary instruction. Although the various researchers identified from three to nine properties they felt comprised effective vocabulary instruction, there were some overlapping similarities of the various components.

Recommendations

My recommendations for teachers would be to look at what some of the research says about the strong connections between vocabulary and reading comprehension, if they still need to be convinced of the importance of implementing a comprehensive program of vocabulary instruction in their schools. Then teachers can examine the instructional strategies described by the various researchers and pick and choose among those they deem will work best for them in their own classrooms.

Conclusion

The research strongly supports the need for teaching vocabulary in the schools. The research is also clear that there is a strong relationship between vocabulary and reading comprehension. Teachers should use the findings of the researchers to recognize the reasons for teaching vocabulary, to know what a comprehensive program of vocabulary instruction consists of, and to learn about some research-based instructional

strategies they can use in their classrooms. Research should continue to focus on vocabulary and its effects on reading comprehension and the various components that comprise a comprehensive vocabulary program. Current instructional vocabulary strategies should continue to be reviewed for their value. Research should also concentrate on looking at new ways for teachers to include vocabulary learning in their classrooms.

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