WHITE PAPER

Developing Academic Vocabulary

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Introduction

For many years, much of vocabulary instruction consisted of teachers identifying words and students looking up and then writing the definitions of those words. The 2001 National Reading Panel Report put a spotlight on vocabulary instruction (National Institute for Literacy 2001). The Report summarized the research that identifies the five fundamental elements of learning to read, and vocabulary, along with phonemic awareness, phonics, fluency, and comprehension was one of the five. The Report presented three key findings about vocabulary:

1. Vocabulary is critically important to readers who use the words they speak and hear to make sense of the words they see in print. Decoding without understanding what words mean is not reading meaningfully.

2. Vocabulary is critical to reading comprehension throughout the grades. A reader cannot comprehend what is read if he or she doesn't know the meanings of most of the words. As children advance in reading, they encounter words that are not part of their oral vocabularies, which they need to learn in order to understand what they are reading.

3. Most vocabulary is learned indirectly through everyday experience with oral and written language, but some words that represent complex concepts that are not part of everyday experrience must be taught directly.

The National Reading Panel Report is not the only work that has shed light on the importance of vocabulary instruction in recent years. Some studies demonstrated the critical importance of a solid vocabulary in academic achievment. Some showed the connections between vocabulary and concpetual understanding in science, math and social studies. Others identified the most effective methods for learning and teaching new words.

This white paper summarizes the conclusions reached from research about teaching and learning academic vocabulary.

What is Academic Vocabulary?

Given the importance of academic background knowledge and the fact that vocabulary is such an essential aspect of it, one of the most crucial services that teachers can provide, particularly for students who do not come from academically advantaged backgrounds, is systematic instruction in important academic terms. (Marzano and Pickering 2005).

Academic vocabulary includes the words that are critical to understanding concepts taught in school. Academic vocabulary focuses on *specialized* words, as opposed to the *high-frequency* words that students learn through reading and speaking. Learning academic vocabulary is not just for preparation for college. Academic vocabulary can include school-related words that form the language of learning that children encounter when they start school in kindergarten all the way through advanced placement courses they may take in high school.

Academic vocabulary development is important for student achievement throughout the grades. A profound study (Hart and Risley 1995) observed interactions between infants and their parents over a period of time. The study found that based on these interactions, some children enter preschool at age 4 with oral vocabularies that are up to two years behind their peers. These children simply haven't been exposed to many words. This vocabulary deficit can make it seem as if teachers are speaking in a foreign language. Unless academic vocabulary is taught, a child can get behind at the earliest levels and never catch up. *A person with more expertise has a larger knowledge base, and the large knowledge base allows that person to acquire even greater expertise at a faster rate* (Stanovich 1986). Thus is it critically important that academic vocabulary be taught at every level and particularly reinforced for those students who have a vocabulary deficit.

"….those who enter fourth grade with significant vocabulary deficits show increasing problems with reading comprehension, even if they have good reading (word identification) skills. The available evidence does not suggest a substantial "catching up" process, but rather a continuing slippage relative to those with average and above-average achievment." (Biemiller 1999).

As students progress in school, academic vocabulary becomes more and more specific to content studies. To support vocabulary instruction, academic vocabulary is often highlighted in instructional materials. These highlighted words are considered key to understanding the content of a particular passage or chapter. To support vocabulary instruction efforts further, several academic vocabulary word lists have been generated by publishers, academics, and state boards of education (Tennessee Department of Education 2009). These lists include academic vocablulary that is determined to be critical to content-area studies.

What Effect Does Vocabulary Have on Understanding?

Knowledge of this vocabulary will not guarantee success, but lack of knowledge of vocabulary can ensure failure. (Biemiller 1999).

Words, reason, and understanding are intertwined. The Greek word *logos* means "word" but also "reason," "thought," and "speech." The Greek *-log* is used as a root in *logic, analogy, geology,* and *anthropology*. To know what a word means, helps define the thought or concept behind the word and develops understanding. Vocabulary is critical to reading comprehension.

Vocabulary knowledge is involved in a reciprocal relationship with reading ability…the relationship is one that continues throughout reading development and remains in force for even the most fluent adult reader (Stanovich 1986).

Language, along with sense perception, reason, and emotion are the fundamental ways of knowing. Of course language is only one way of knowing and yet it is an important contributor to understanding, particularly abstract concepts that cannot be experienced.

Research shows that vocabulary knowledge is a strong predictor of reading comprehension than most variables, even cognitive ability. Two-thirds of all academic English words come from Latin, French (through Latin), or Greek. Understandably, knowledge of the most high-incidence academic words in English can significantly boost a student's comprehension level of school-based reading material. (Coxhead 2000)

People's knowledge of any topic is encapsulated in the terms they know that are relevant to the topic. For example, people who know a great deal about snow skiing understand terms such as fall line, snow plow, corn snow, unweight, powder, packed powder, green slope, blue slope, black slope, mogul, carving, and face-plant. Likewise, students who understand the content in their state mathematics standards document regarding data analysis and statistics have an understanding of terms such as mean, median, mode, range, standard deviation, and central tendency. The more students understand these terms, the easier it is for them to understand information they may read or hear about the topic. On the other hand, without a basic knowledge of these terms, students will have difficulty understanding information they read or hear (Marzano and Pickering 2005).

What does it mean to know a word? One can know a word deeply, superfically, or not at all. A knowledge continuum might include these kinds of stages (Beck, McKeown and Kucan 2002).

1. Never heard or saw the word before.

2. Heard or saw the word and know that it is related to a particular topic or concept.

3. Heard or saw the word and have a general sense of what it means.

4. Have a narrow contextual understanding of a word.

5. Can define a word in context but not use it in appropriate situations.

6. Can recall or use a word in specific contexts.

7. Know of multiple meanings of a word.

8. Can apply a word correctly and recognize inappropriate use.

9. use the word naturally in thinking, writing, and talking.

10. Has a rich knowledge of a word's meaning and how it relates to other words with similar meanings, roots, or affixes.

11. Has deep knowledge of a word. Can conjugate forms and use it appropriately in figures of speech, such as puns, metaphors, and understand its use in idiomatic exppressions.

Vocabulary instruction can have a significant effect on concept knowledge, reading comprehension, and school achievement. Given that vocabulary is so connected to understanding and having a deep understanding of words enriches content knowledge, the most effective and efficient ways of teaching vocabulary should be part of every teacher's repertoire.

Teaching Academic Vocabulary

Teaching specific terms in a specific way is probably the strongest action a teacher can take to ensure that students have the academic background knowledge they need to understand the content they will encounter in school. When all the teachers in a school focus on the same academic vocabulary and teach it in the same way, the school has a powerful comprehensive approach. When all the teachers in a district embrace and use the approach, it becomes even more powerful (Marzano and Pickering 2005).

All teachers can provide effective vocabulary instruction. As students advance in school, continuous vocabulary reinforcement from all subject areas can have a significant effective on student achievement.

There are an estimated 88,500 words in printed school English (Nagy and Herman 1984). It is impossible teach each one through direct instruction, nor would that be effective or efficient. Some strategies, however, are more effective than others. Strategies that are *not* effective include the following (Stahl and Fairbanks 1986):

1. Looking up definitions (in the absence of other strategies).

2. Providing only one or two exposures to a word.

3. Drill-and-practice methods of instruction that involve multiple repetitions of the same type of information.

Effective Vocabulary Learning Strategies

If simply having students look up vocabulary words in a dictionary and write the definitions is not an effective teaching strategy, what is? Below are basic strategies that have been identified as effective for acquiring vocabulary (M. F. Graves 2006).

1. Use context to unlock the meanings of unknown words.

    a. Read carefully and ask yourself, "Does this make sense?"

    b. Notice when you don't know the meaning of a word and slow down.

    c. If necessary, reread the preceding sentence looking for clues to the word's meaning.

    d. Substitute your meaning for the unknown word to see if it makes sense. If not, go back again.

2. Use word parts (prefixes, suffixes and roots to unlock the meanings of words.

    a. More than 60% of new words can be broking down into parts. Then students can use their word parts to figure out their meanings.

3. Use dictionaries and related reference tools. Learn to use an appropriate dictionary.

    a. Find the word and read the whole definition.

    b. Think about multiple meanings.

    c. Decide which definition makes sense in the passage you read.

4. Develop strategies for dealing with unknown words.

    a. Recognize unknown words.

    b. Decide if you need to understand it to understand the passage.

    c. Attempt to infer the meaning from context.

    d. Attempt to infer the meaning from word parts.

    e. Attempt to sound out the words to see if it is familiar.

    f. Use the dictionary or other resource.

5. Adopt a personal approach to building vocabulary and to developing word consciousness.

Multiple exposures to a word, particularly in different contexts, are also important to securing vocabulary (Laflamme 1997).

Selecting Words to Teach

The first step in teaching academic vocabulary is to identify the words to teach. These may include the words that are highlighted in the reading materials, along with words that appear on state lists, coupled with words that are suggested or identified in the classroom. Some words are critical to understanding a concept; for example, understanding the difference between *mean, median*, and *mode* will help to critically evaluate data.

Other words may be useful, but not critical to understanding. Some words may be interesting but not useful to understanding a concept. It is wise to take time to identify the small selection of words that will have the most effect on student understanding.

Deciding The Most effective Way to Teach Vocabulary

Once words have been selected, the next step is to determin the most effective methods to teach the words. Different words lend themselves to different strategies:

Context Some words are best learned in context; for example, if students are studying parts of a flower, the *stigma* and *sepal* would probably be best taught in context with the more familiar terms, *petal* and *stalk.*

Categorization Some words are best understood when they are related to words that are similar or opposite in meaning; for example, the word *pelf* can be related to *wealth* or *riches,* although it conveys the idea of ill-gotten gains. Antonyms would include *poverty, need,* or *want.*

Word Parts Word parts and word derivations are valuable tools to making meaning of words. Knowing that the word *pelf* is related to *pilfer,* for example, may help in deepening understanding.

Six-Step Strategy For teaching specific vocabulary, the following six steps form a strategy shown to be highly effective (Marzano 2009). This strategy works at every grade level, from kindergarten to high school. It provides multiple exposures to a word in a varieity of contexts and is most effective when all the steps are used. Employing the whole process promotes student achievement much more effectively than using any step individually.

Provide a description, explanation, or example of the new term.

Ask students to restate the description or explanation in their own words. (The results are not as strong when students copy the teacher's explanation instead of generating their own.)

 Ask students to construct a picture, pictograph, or symbolic representation of the term. (This step is crucial. When students do this step well, achievement soars.)

Engage students periodically in activities that help them add to their knowledge of the terms in their vocabulary notebooks.

Periodically ask students to discus the terms with one another.

Involve students periodically in games that enable them to play with the terms. (Games engage students at a high level and have a powerful effect on recall.)

Summary

The attention drawn to the important role of vocabulary in reading also unveils the importance of academic vocabulary and the most effective ways to teach vocabulary. Academic vocabulary is a critical element in concept understanding. Teaching academic vocabulary can begin when children enter school in the primary grades and develop over time to include specific terms that represent key concepts in content area studies.

The most effective strategies for teaching academic vocabulary involve multiple exposures to new words in a variety of contexts. This type of instruction leads to deep understanding of words and concepts. Given the importance of vocabulary in reading comprehension, as well as academic achievement, empowering all teachers with effective strategies for vocabulary instruction has the potential to have dramatic positive effects on student achievement.

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