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A FOCUS on Vocabulary Instruction
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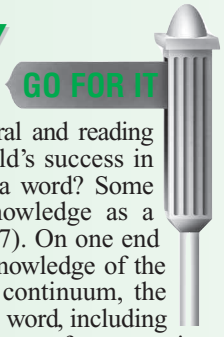
## What Is Vocabulary Instruction?




Vocabulary knowledge, including both oral and reading vocabulary, is critically important for a child's success in school. But, what does it mean to "know" a word? Some researchers have explained vocabulary knowledge as a continuum (Phythian-Sence & Wagner, 2007). On one end of the continuum, a student may have no knowledge of the word whatsoever; on the other end of the continuum, the student may have a deep understanding of the word, including being able to identify the word's meaning out of context, its relationship to other words, and metaphorical uses of the word. Between these two extremes, students may display varying degrees of understanding, such as having a general sense of whether a word has a positive or negative connotation, having a narrow perception of a word when it is used in context, or being able to recognize a word's meaning, but not knowing the word well enough to be able to use it in appropriate situations.

## Why Is Vocabulary Instruction Important?

How students should learn new vocabulary also is not universally agreed upon. Reading is generally believed to be a strong factor in vocabulary acquisition. For example, a 5th grade student who reads for 25 minutes a day will read one million words of text in a year. Many of those words will be unfamiliar and the student will learn the meaning of many of those words just from reading them in context. If only one word out of 20 new words is learned that way, the 5th grader would acquire 1,000 new vocabulary words in a year (Anderson & Nagy, 1991). In contrast, students with learning disabilities who are often deficient in the skills necessary for proficient and efficient reading, read less. In fact, according to Cunningham and Stanovich (1998), the number of minutes that students read each day decreases significantly when they read below grade level. For example, the average 5th grader that displays reading skills at the 30th percentile reads for approximately 1.3 minutes a day (106,00 words a year); 5th graders reading at the 10th percentile read for approximately 0.1 minutes a day (8,000 words a year); and 5th graders reading at the 2nd percentile do not read at all. And, in terms of vocabulary development, students with learning disabilities benefit less from reading than students without learning disabilities (Wong, 2004).

This problem of reading practice (or lack thereof) is compounded by the fact that vocabulary knowledge plays an important role in reading comprehension; limited vocabulary knowledge can negatively impact the development of a student's reading comprehension skills (this reciprocal relationship is a version of the Matthew Effect; see Stanovich, 1986). Therefore, it is important that students not only expand their vocabulary through indirect learning (such as reading), but also through direct, explicit instruction of vocabulary. Of course, it is not feasible to provide direct explicit instruction of every word that a student needs to know. For this reason, teachers need to purposefully target specific vocabulary words. The National Reading Panel of the National Institute of Child Health and Human Development (NICHHD, 2000) recommended that teachers focus on three types of words: (a) important words, (b) useful words, (c) and difficult words. Important words are those that are needed to understand a concept or text that is being taught. Useful words are words that students will be required to recognize and use on an ongoing basis. Difficult words are those that pose particular challenges for students, such as words with multiple meanings, words where meanings are context specific, and idiomatic expressions.

## For Whom Is It Intended?

Vocabulary instruction can be beneficial to all students but is especially important for students with limited background knowledge and experience and struggling readers who might not spend as much time in independent reading as proficient readers. Children enter school with large differences in vocabulary knowledge, often due to differences in their exposure to vocabulary-rich language at home or in the communities (Hart & Risley, 1995). These differences increase over time, making the need for direct vocabulary instruction even more pressing for students with language deficiencies due to learning disabilities or problems with language acquisition.

## How Does Vocabulary Instruction Work?

Vocabulary learning research with students with learning disabilities over the last 25 years has investigated five broad areas of instruction: (a) keyword mnemonics, (b) direct instruction, (c) fluency building vocabulary practice activities, (d) cognitive strategies, and (e) computer assisted instruction (Jitendra, Edwards, Sacks, & Jacobson, 2004; Bryant, Goodwin, Bryant, & Higgins, 2003).

### *Keyword Mnemonics*

Keyword mnemonics are explicit phonetic and imagery links that promote recall of a target vocabulary word. This strategy uses a three step process: (a) reconstructing, (b) relating, and (c) retrieving (Mastropieri & Scruggs, 1991). Teachers *reconstruct* the unknown vocabulary word with a similar sounding keyword with which the student is familiar. Next, the keyword is *related* to the definition to be learned. Finally, students are taught to *retrieve* the newly learned definition by thinking of the key word and the new information related to it. For example, to teach that the definition of *vituperation* is "abusive speech," a keyword for vituperation is created that sounds like the target word and can be easily pictured—in this case, the key word could be "viper." Finally, the keyword is shown interacting with the definition; in this case a viper is pictured

speaking abusively to someone (see Figure 1). When asked the meaning of "vituperation," the learner first thinks of the keyword (viper), thinks of the picture of the viper, remembers the viper is speaking abusively, and retrieves the definition: abusive speech (Mastropieri, Scruggs, & Fulk, 1990). See TeachingLD.org for a DLD/DR Alert and a Teaching Tutorial on keyword mnemonics.

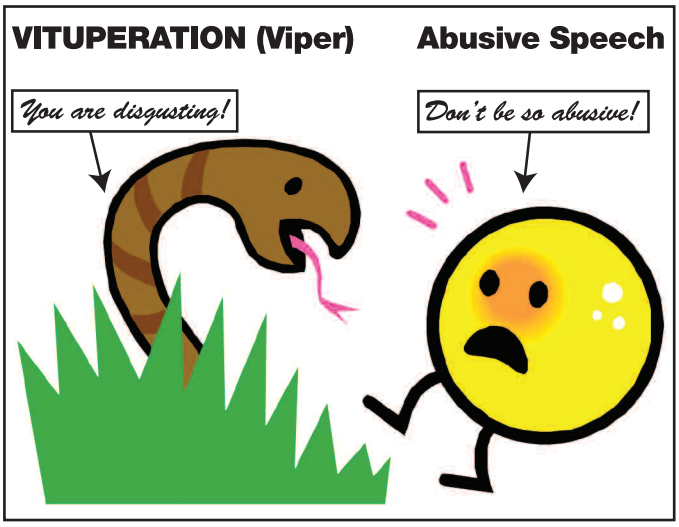



***Figure 1.*** Mnemonic keyword illustration for Vituperation = abusive speech.

## Direct Instruction

The Direct Instruction (DI) model is "a comprehensive system of instruction that integrates effective teaching practices with sophisticated curriculum design, classroom organization and management, and careful monitoring of student progress, as well as extensive staff development" (Stein, Carnine, & Dixon, 1998, p. 227). Applied narrowly to vocabulary learning, DI involves the explicit, systematic presentation of a word and its meaning. Direct Instruction in vocabulary also is characterized by ongoing assessment, active student participation and the systematic transfer of independent word learning from teacher to student. Typically, DI lessons are highly structured and scripted. The following is a sample script for initial vocabulary acquisition from a study by Pany, Jenkins, and Schrek (1982, p. 205):

| | |
|---|---|
| *Student reads:* | "Buffoon." |
| *Teacher says:* | "Buffoon means clown. Your teacher may become angry if you behave like a buffoon in class. What does buffoon mean?" |
| *Student 1 says:* | "Buffoon means clown." |
| *Teacher says:* | "What does buffoon mean?" |
| *Student 2 says:* | "Buffoon means clown. |

After initial acquisition, similarly structured activities would be employed to promote comprehension and transfer of the newly acquired vocabulary words, monitored by ongoing assessment. See TeachingLD.org for a DLD/DR Alert on Direct Instruction.

## Fluency Building Vocabulary Practice

In research studies reported by Stump et al. (1992), students with and without learning disabilities in inclusive classes studied new vocabulary words independently for 5-10 minutes, and then quizzed each other in pairs for another 5-10 minutes. This intervention employed procedures similar to those of Direct Instruction described previously, but provided additional academic engagement for students in inclusive classes through the use of peer tutoring.

## Cognitive Strategies

Cognitive strategies help students categorize words by highlighting similarities and differences among related ideas.

*Semantic feature analysis.* Semantic feature analysis involves using a chart, or a grid, to compare and contrast a new word by comparing and contrasting it to major concepts. Generally major concepts are represented across the top of the grid and related vocabulary is represented down the side of the grid. Students are then taught the vocabulary while making reference to the major concepts and determining if the relationship is positive, negative, or unrelated (see Figure 2).

| | Equilateral Triangle | Isosceles Triangle | Scalene Triangle | Right Triangle | Acute Triangle | Obtuse Triangle |
|---|---|---|---|---|---|---|
| 3 sides | + | + | + | + | + | + |
| 3 angles add up to 180° | + | + | + | + | + | + |
| All sides equal | + | - | - | - | +/- | +/- |
| All angles equal | + | - | - | - | +/- | - |
| Has a right (90°) angle | - | +/- | +/- | + | - | - |
| All angles <90° | + | +/- | +/- | - | + | - |

***Figure 2.*** Semantic feature analysis (SFA) of types of triangles.

This strategy can be enhanced using syntactic clues (referred to as semantic/syntactic feature analysis). For example, a CLOZE procedure (a reading passage with selected words deleted) can be used to assist students in recognizing how to use the newly learned vocabulary words within the correct grammatical context.

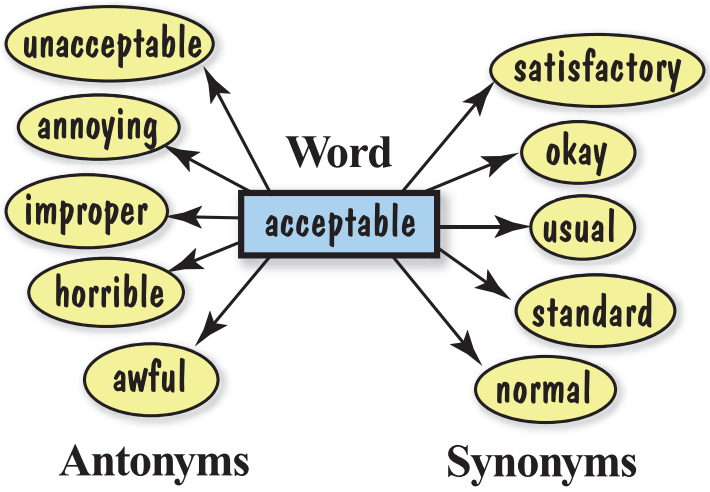



***Figure 3.*** Example of a simple semantic map for "acceptable."

*Semantic mapping.* A semantic map, sometimes called a graphic organizer, is another instructional tool used to assist students in understanding relationships among words. Semantic maps can vary in complexity. For example, Figure 3 displays a semantic map that contrasts synonyms and antonyms to illustrate the meaning of the word "acceptable" (from Paulsen, 2007). Figure 4 displays a more complex semantic word map that illustrates the meaning of the word "tranquil" with a definition, part of speech, and multiple examples of correct usage in addition to synonyms and antonyms.

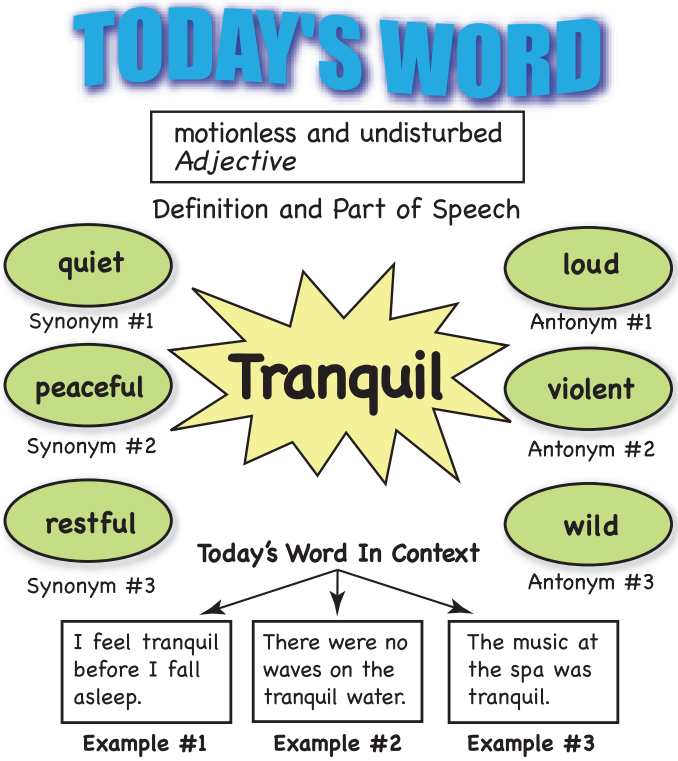



***Figure 4.*** Example of a complex semantic word map for "tranquil."

### *Computer Assisted Instruction*

Computer assisted instruction (CAI) is technology used to (a) supplement teacher instruction, (b) provide students with drill and practice on basic skills, and (c) teach vocabulary relevant to content knowledge. A variety of software programs offer vocabulary learning components. Although several research studies have documented pre-post vocabulary learning gains using CAI (e.g., Hebert & Murdock, 1994; Koury, 1996), lack of consistent positive results, and lack of comparison or control conditions in these investigations suggest that the efficacy of CAI at present should be considered tentative.

## How Practical Is Vocabulary Instruction?

Vocabulary instructional strategies are versatile and can easily be incorporated into any subject area, whether reading, spelling, language arts, or content areas such as English, science or social studies. DI and peer mediated approaches can be implemented very easily, and strategies such as keyword mnemonics and semantic feature analysis can be implemented after only a little additional preparation.

## How Adequate Is The Research Knowledge Base?

A recent research synthesis (Jitendra et al., 2004) reported a large mean effect size for several vocabulary training strategies, including mnemonic instruction, DI, cognitive strategies, and CAI ($ES$ = 1.47, $SD$ = .80, $n$ = 19). However, some mixed results were found overall with CAI, and research in this area often lacked a comparison or control condition. A research synthesis of mnemonic instruction (Scruggs & Mastropieri, 2000) reported an overall mean effect size of 1.82 for effects on vocabulary learning. Transfer effects of vocabulary training overall have also been substantial, although this is less thoroughly studied than initial acquisition. Bryant, Goodwin, Bryant, and Higgins (2003) provided a narrative review of vocabulary instruction for secondary students and concluded that the strategies described in this Alert were effective, overall, for immediate recall, maintenance, and generalization. When directly compared, mnemonic strategies and cognitive strategies have generally outperformed DI methods that rely mostly on rehearsal of words and definitions. However, DI has demonstrated overall effectiveness, and has the advantage of being very simple to implement. Jitendra et al. (2004) concluded that activity-based methods in science had produced a moderate effect on vocabulary learning but the authors of the study (Scruggs, Mastropieri, Bakken, & Brigham, 1993) reported that vocabulary learning gains from activity based methods, although better than traditional procedures, were still less than acceptable, and recommended that additional vocabulary learning strategies be employed.

## What Questions Remain?

Although substantial efficacy data exist for immediate recall of vocabulary definitions, broader outcomes and longer-term outcomes have been less well studied. That is, the extent to which vocabulary instruction leads to functionally larger working vocabularies in students with learning disabilities is uncertain. Further, the extent to which regular vocabulary instruction leads to generalized reading comprehension gains, of the type evidenced on standardized reading achievement tests, is also not well known. Further research, incorporating longer implementation periods and broader dependent variables could help address these issues.

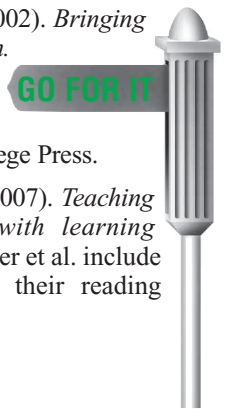
## How do I learn more?

Several books, by well-known researchers, have described issues and strategies for vocabulary training:


Beck, I. L., McKeown, M. G., & Kucan, L. (2002). *Bringing words to life: Robust vocabulary instruction.* New York: Guilford.

Graves, M. L. *The vocabulary book: Learning and instruction.* New York: Teachers College Press.

Klingner, J. K., Vaughn, S., & Boardman, A. (2007). *Teaching reading comprehension to students with learning difficulties.* New York: Guilford. (Klingner et al. include a chapter on vocabulary learning in their reading comprehension book.)

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# About the Alert Series



**Current Practice Alerts** is a joint publication of the **Division for Learning Disabilities** and the **Division for Research** within the **Council for Exceptional Children.** The series is intended to provide an authoritative resource concerning the effectiveness of current practices intended for individuals with specific learning disabilities.

Each Alerts issue focuses on a single practice or family of practices that is widely used or discussed in the LD field. The Alert describes the target practice and provides a critical overview of the existing data regarding its effectiveness for individuals with learning disabilities. Practices judged by the Alerts Editorial Committee to be well validated and reliably used are featured under the rubric of Go For It. Those practices judged to have insufficient evidence of effectiveness are featured as Use Caution.

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