Vocabulary

What is Vocabulary?

Vocabulary can loosely be defined as “word knowledge”. However, what seems to be a simple concept is actually quite complex. The importance of vocabulary in the reading process has long been recognized in reading research (Whipple, 1925). Vocabulary learning and instruction play a critical role in the process of reading comprehension. Since the goal of reading is meaning making, a child who is learning to read gains no benefit from decoding a word he does not comprehend. It is impossible for a child to comprehend a word he does not possess in his oral vocabulary, so without vocabulary knowledge, reading is meaningless.

Summary of NRP Findings

While the NRP was unable to conduct a formal meta-analysis on vocabulary because of the scarcity of research studies that met the NRP’s criteria, they did conduct a thorough review of the research and meta-analyses available and noted trends in findings. The NRP did not include studies in its analysis that only dealt with special populations, including learning disabled students and English language learners.

The studies analyzed by the NRP included a wide variety of instructional methods for teaching vocabulary. Studies were grouped into five categories, based on the instructional methods used. Explicit instruction methods included those in which students are given definitions or word attributes to learn. Some common examples of this technique are pre-teaching vocabulary before reading and teaching students to analyze root words and affixes. Implicit instruction methods are based on the idea that students will learn vocabulary incidentally through wide reading. Students are expected to infer the meanings of new words when exposed to them during reading. Multimedia methods of vocabulary instruction go beyond the text to include other media such as semantic maps and graphic representations, hypertext, as well as American Sign Language. Capacity methods of instruction assume that students must learn to make other aspects of the reading process automatic in order to have sufficient mental capacity to focus on vocabulary. These methods instruct students towards automaticity in decoding and fluency in order to free-up mental space for vocabulary learning during reading. Association methods of instruction teach students to make connections between words they know and new words they encounter. These associations may be semantic or contextual. They may also ask students to form mental images to help them recall word meanings.

The NRP panel found that many direct and indirect instructional methods were effective for vocabulary learning. They concluded that there is no one correct way to teach vocabulary. They also concluded that it is more effective to use multiple methods of vocabulary instruction in the classroom than to stick with only one method. However, while there was no silver bullet
method of vocabulary instruction found, we now discuss certain important characteristics of effective vocabulary instruction that emerged during the panel’s analysis.

One trend noted by the NRP was the significant importance of repeated, multiple exposures to new vocabulary words. Leung (1992) found that the frequency of a target word in a story influenced how often Kindergarten and first grade children used the word in their retellings.

In addition, greater learning occurred when vocabulary words were presented in rich, multiple contexts. McKeown, Beck, Omanson, and Pople (1985) found higher performance in 4th graders when vocabulary instruction extended beyond a single class period, involved opportunities for encountering the words in authentic context, and provided extension activities to use the words beyond the classroom.

The panel also noted that students performed better when classroom tasks were restructured in order to better support vocabulary learning. For example, when vocabulary definitions were altered, or when students read with partners, they had greater success.

Several studies focused on contextual approaches to vocabulary learning. Most of the studies found that context methods of vocabulary instruction were most effective when combined with definitional methods. However, some studies found gains using a single approach.

Pre-teaching vocabulary words before reading was found to be an effective instructional method. In fact, a few studies showed that pre-teaching vocabulary supports both vocabulary acquisition and general reading comprehension.

Several studies analyzed by the NRP focused on the keyword method of vocabulary instruction. Some studies found this method to be more effective than other vocabulary instruction methods. However, one study found that they keyword method may work well for high-ability students but less so for low-ability students. Another study found that the gains obtained by the keyword method faded within a week.

The NRP also concluded that effective vocabulary instruction included an emphasis on multimedia learning. Indeed, four of the studies analyzed by the NRP studied the effectiveness of using computer technology during vocabulary instruction. All four studies reported increased learning gains for students who participated in computer-based learning tasks versus traditional methods.

Other studies analyzed the occurrence of incidental vocabulary learning. Studies found that students were able to learn vocabulary incidentally by listening to read-aloud stories. Schwanenflugel, Stahl, and Mc Falls (1997) analyzed characteristics of words that were more easily learned incidentally, and found that non-nouns were more easily learned than nouns, and concrete words were learned more easily than non-imageable words. The interactions within the environment of the read aloud also had an effect on vocabulary learning. When students were able to talk and to participate actively, more vocabulary learning occurred.
The NRP panel found that instructional methods in vocabulary had varying degrees of success as a function of the students’ ages and ability levels. Some instructional methods were found to be more appropriate and effective for certain groups of students. For example, Meyerson, Ford and Jones (1991) found that 5th graders were more likely than 3rd graders to use a conceptual map to organize science vocabulary, and Tomesen and Aarnoutse (1998) found that their reciprocal teaching method for deriving word meanings was more effective for poor readers than for average readers.

Because the goal of reading is meaning-making, research on vocabulary is often inextricably linked with reading comprehension. However, while many studies have shown that reading achievement and vocabulary size are related, it has been difficult to consistently prove that vocabulary instruction directly improves general reading ability. The panel noted eight studies that attempted to prove a causal relationship between vocabulary instruction and reading comprehension with successful results. For example, Beck, Perfetti and McKeown (1982) found that fourth grade students receiving vocabulary instruction performed better on a semantic task than those who did not. Also, Stahl and Fairbanks (1986) conducted a meta-analysis and concluded that vocabulary instruction is an important component of comprehension. However, two studies did not find a causal relationship.

In summary, the NRP panel concluded that effective vocabulary instruction occurs within a rich context, provides multiple exposures to new words through active and meaningful activities, includes multimedia learning, includes both direct and indirect methods that are developmentally appropriate, and is incorporated into reading instruction. Tasks should be restructured when necessary, and activities should always include high levels of student engagement. Reliance on a single instructional method will not result in optimal learning.

Summary of current research

Trends in current research reinforce the NRP finding that more vocabulary instruction is better than none. Several recent studies found that students who participate in small group vocabulary instruction perform better on vocabulary measures than those in control groups not receiving explicit vocabulary instruction. Researchers continue to investigate the effects of various instructional methods and combinations of methods, as well as the relationship between vocabulary knowledge and reading comprehension.

Implications for teaching

Selecting words to teach

One important issue regarding vocabulary instruction is how to select which words to teach. Biemiller (2005) has developed a list of words that should be taught in the primary grades. The list is composed of words that 40-80% of students know by the end of second grade. Biemiller and Slonim (2001) have also developed a list of 15,000 root words that students should...
know by the end of high school. The Fry Instant Word List (Fry, Kress, & Fountoukidis, 2004) contains 75% of words students will encounter in their reading material. These lists can be a helpful resource for teachers but are often overwhelming. They are not meant as a vocabulary curriculum to be followed, but rather as a useful reference.

One method for effectively selecting rich vocabulary words to teach was developed by Beck, McKeown, and Kucan (2002). These researchers have grouped vocabulary words into three tiers. Tier 1 words are those that children already know simply as a result of living in the world. Tier 2 words are words students are likely to encounter in texts across a variety of domains, but are not known by many students. Tier 3 words are usually domain-specific words that occur with low frequency in general reading. Beck and her colleagues assert that teachers should focus most vocabulary instruction on Tier 2 words.

Blachowicz and Fisher (2000) agree that rich, challenging vocabulary words to teach students can be found in trade books. They caution teachers against the common method of vocabulary instruction found in many basal reading series of teaching words from the anthology stories. Often the words in the stories are words the students already know, especially in the lower primary grades. Since young students’ listening comprehension skills develop faster than their decoding skills, students will not learn a lot of new vocabulary from early reading. These rich vocabulary words need to be taught through read alouds.

Methods for vocabulary instruction

Once a teacher has determined which words to teach, she needs to consider the best way to teach them. Current research supports and expands upon the NRP findings of the characteristics of effective vocabulary instruction. Graves (2006) defines four components of effective vocabulary instruction: 1) providing rich and varied language experiences, 2) teaching individual words, 3) teaching word-learning strategies, and 4) fostering word consciousness. Word consciousness is discussed in depth by Scott and Nagy (2004), and involves an awareness of words and an interest in their meanings, as well as recognition of the importance of word choice and the communicative power of words.

Beck and McKeown (2001) found that providing rich vocabulary instruction during a read-aloud is effective for increasing primary grade students’ vocabularies. These researchers developed a curricular program, “Text Talk”, that uses read alouds to expose young children in Kindergarten and grade 1 to challenging concepts and new vocabulary, and to encourage them to talk about and connect ideas related to the stories. “Text Talk” requires teachers to pose open-ended questions to students during read alouds that are designed to elicit longer responses. It also incorporates explicit vocabulary instruction of challenging Tier 2 words during the read aloud.

Several current studies found successful vocabulary learning occurred when students were able to use some type of semantic web or graphic organizer to make connections between prior knowledge (known words) and new vocabulary and concepts. For example, Boulware-
Gooden et al. (2007) found that students who participated in vocabulary instruction that involved generating synonyms, antonyms, and related words as well as using semantic webs did better on subsequent vocabulary and comprehension measures than students who participated in vocabulary instruction that involved writing the vocabulary word and using it in a sentence.

Baumann and his colleagues (Baumann et al., 2002) studied the effects of teaching fifth grade students morphemic and semantic analyses. In the morphemic lessons, students learned to analyze root words and affixes to determine the meanings of new vocabulary words encountered in text. In the semantic lessons, students learned to analyze the contextual clues and were taught to read carefully around a new word to gain clues about its meaning. Students were then taught to use both techniques together when reading. Results showed that using the techniques together helped students learn the words read during the study. There was some evidence that the students could transfer the techniques to other reading, but effects were small to moderate, and there was no evidence that the techniques increased comprehension as a whole.

Blachowicz, Fisher and Ogle (2006), as well as many other researchers, believe that it is crucial for vocabulary learning to occur throughout the day, across content and subject areas. If vocabulary learning is an isolated event, it is not likely that the new words will become internalized.

**Implications for assessment**

Measuring a person’s vocabulary knowledge can be difficult. Research often distinguishes between two vocabularies: receptive and productive. The receptive vocabulary consists of words we understand when reading or listening, and the productive vocabulary includes words we use when speaking or writing. The receptive vocabulary is often much larger than the productive vocabulary. The Peabody Picture Vocabulary Test (PPVT III, 1997) is a standardized assessment that is often used to measure students’ oral receptive vocabularies. Students’ productive vocabularies are rarely formally measured. There is also a difference between a person’s reading and writing vocabulary and his speaking and listening vocabulary. In addition, research has been conducted on students’ sight vocabularies (words that can be read without decoding). When assessing vocabulary, it is important to define which vocabulary is being measured.

Recognition of vocabulary words is often assessed by asking learners to choose a definition for a word from a list of alternatives or to match a definition to a word. Because vocabularies are so large, it is impossible to determine the exact size of a learner’s vocabulary. Standardized assessments often select unfamiliar words to assess, and learners who know the unfamiliar words are assumed to have larger vocabularies. However, there are obvious issues with this type of assessment.

In the context of a classroom, teachers often assess certain vocabulary words that they want their students to know. While standardized tests may be useful to administer as pretests or as screening measures, teacher-developed vocabulary assessments are better measures of vocabulary acquisition in the classroom because the assessment can be matched to the
instruction students received. The NRP cautions that different vocabulary measures produce different results, and it recommends that more than one vocabulary measure be used in order to obtain good results.

Nagy and Scott (2000) investigated the more subtle areas of word knowledge. They have developed five aspects of word knowledge used in reading: incrementality, multidimensionality, polysemy, interrelatedness, and heterogeneity. These areas of vocabulary knowledge are rarely assessed by standardized measures of reading achievement. In fact, often vocabulary is assessed within the context of general reading comprehension as it relates to a specific passage, rather than as a separate entity.

The National Assessment of Educational Progress (NAEP, 2009) is attempting to address the issue of contextualized vocabulary assessment by dividing text categories in to subcategories in recognition of the fact that different genres require different vocabulary knowledge (National Assessment Governing Board [NAGB], 2005). It is hoped that more sensitive formal measures of vocabulary will continue to be developed.

**Implications for intervention**

Hart and Risley (1995) found an extraordinary difference in vocabulary size in children as young as three years old based on socioeconomic status. By second grade, students with strong vocabularies may know 8,000 more words than their peers with weaker vocabularies (Biemiller, 2004). Without rich vocabulary instruction, this gap may continue to widen as students progress through school. Dickinson and Tabors (2001) found that children’s word knowledge in preschool correlated significantly with their comprehension in upper elementary school. In addition, Beck, McKeown and Kucan (2005) found that third graders with low vocabularies were very unlikely to become proficient in reading.

Rich vocabulary instruction and intervention must begin early in order to close the gap (Biemiller and Slonim, 2001). The goal of early intervention is to target differences in early literacy skills and experiences before reading difficulties become entrenched, so early intervention is especially important for students who enter school with weak vocabularies (Coyne et al, 2004).

Fien et al (2011) emphasize the importance of small-group vocabulary instruction for students in the early grades with low vocabularies. Their study assigned first grade students to a small-group vocabulary intervention aligned to the whole-class read aloud curriculum. Students met in a small group to work on vocabulary from the expository read aloud selections twice a week for eight weeks. Those who participated in the intervention reliably out-performed control groups on both vocabulary measures and expository retells.

Beck et al (2002) found that vocabulary interventions that have a positive effect on reading comprehension have three characteristics in common: a) they include both definitional and instructional information of words, b) they support deep processing of words, and c) they provide multiple exposures to words.
Several studies found that students from low socioeconomic backgrounds, as well as ELL students, responded well to vocabulary interventions that provided more time to interact with new vocabulary words in active and meaningful ways, in addition to the regular classroom vocabulary instruction.

**References**


Coyne, M. D., Simmons, D. C. & Kame’enui, E. J. (2004). Vocabulary instruction for young children at risk of experiencing reading difficulties: Teaching word meanings
during shared storybook readings. In J.F. Baumann & E.J. Kame’enui (Eds.), *Vocabulary instruction: Research to practice* (pp. 41-55). New York: Guilford Press.


