

# Teaching 50,000 words

The importance of vocabulary, the number of words students need to learn, and the additional challenges some children face mean that teachers need powerful vocabulary programs. Michael Graves, Diane August, and Maria Carlo describe four components these programs should include

**WE BEGIN THIS EXAMINATION OF WHAT** we know about teaching vocabulary with three basic facts, facts that testify to the importance of providing students with a powerful and multifaceted vocabulary program. These facts fall under three categories: the importance of vocabulary; the number of words students need to learn; and the vocabulary deficit of some children. Following this, we describe the components of such a multifaceted program, and some special considerations for English-language learners (ELLs).

**The importance of vocabulary**  
Having a substantial vocabulary is crucial to learning to read and write, to success in school more generally, and to success in the world beyond school. Findings from more than 100 years of vocabulary research include:

- Vocabulary knowledge in kindergarten and first grade is a significant predictor of reading comprehension in the upper elementary and secondary years.
- Vocabulary difficulty strongly influences the readability of text.
- Teaching vocabulary can improve reading comprehension for both native English speakers and ELLs.
- Growing up in poverty can seriously restrict the vocabulary children learn before beginning school, and make

attaining an adequate vocabulary a challenging task.

- Learning English vocabulary is one of the most crucial tasks for ELLs because of the relationship between vocabulary and comprehension, and ELLs' difficulty comprehending text in a second language.

∞ **The most basic component of a comprehensive program is providing students with a rich array of language experiences in listening, speaking, reading, and writing** ∞

**The number of words students need to learn**

The vocabulary learning task is enormous! Estimates of vocabulary size vary greatly, but a reasonable estimate is this: The average child enters school with a listening vocabulary of perhaps 5,000-10,000 words and a very small reading vocabulary. Once in school, however, both children's listening vocabularies and their reading vocabularies grow rapidly. Soon, children are learning words at the rate of 3,000-4,000 words a year, leading to vocabularies of something like 25,000 words by the sixth grade and something like 50,000 words by the end of high school.

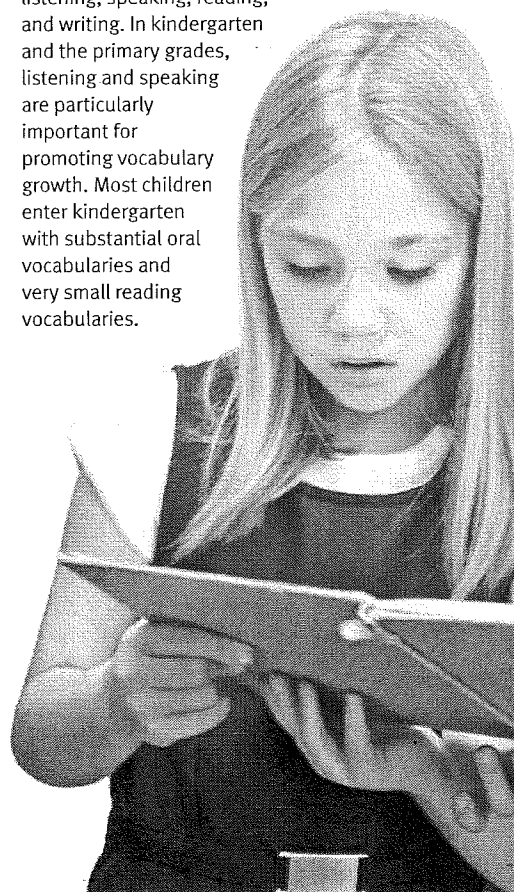
## **The vocabulary deficit of some children**

The figures we have just given are for average or what might be called "linguistically advantaged" children and certainly do not reflect the size of all children's vocabularies. Some children from underprivileged backgrounds have serious vocabulary deficits and may arrive at school with vocabularies half the size of their more linguistically advantaged peers, and then fall further and further behind over their years in school. Similarly, some ELLs may arrive in first grade with very small English vocabularies and face the prospect of falling further and further behind because they lack the vocabulary base they need to learn new words. Both these groups of children need special help in building their oral and reading vocabularies if they are to succeed in school.

These three facts argue for creating powerful and comprehensive vocabulary programs. There is broad agreement that such a program must be multifaceted and devote attention to providing rich and varied language experiences, teaching individual words, teaching word-learning strategies, and fostering word consciousness.

## **1. Providing rich and varied language experiences**

The most basic component of a comprehensive program is providing students with a rich array of language experiences in listening, speaking, reading, and writing. In kindergarten and the primary grades, listening and speaking are particularly important for promoting vocabulary growth. Most children enter kindergarten with substantial oral vocabularies and very small reading vocabularies.



## LANGUAGE ARTS

### The importance of vocabulary

Appropriately, most of the words in materials they read are words that are in their oral vocabularies. For this reason, young children will not learn many new words from reading. Where they will learn them is from discussion, from being read to, and from having their attention directly focused on words. In the intermediate grades, the middle grades, and secondary school, listening and speaking continue to be important. Students of all ages, and ELLs as well as native English speakers, need to engage frequently in authentic discussions – give and take conversations in which they are given the opportunity to thoughtfully discuss meaningful topics. From upper elementary school onwards, reading becomes the principle language experience for increasing students' vocabularies. If we can substantially increase the reading they do, we can substantially increase the words they learn.

#### 2. Teaching individual words

Another component of a comprehensive program is teaching individual words. To be sure, the size of the vocabulary that young people will eventually attain means that we cannot teach all of the words they need to learn. However, this does not mean that we cannot and should not teach some of them. Fortunately, research has revealed a good deal about effective – and ineffective – approaches to teaching individual words. Teaching vocabulary is most effective when learners are given both definitional and contextual information, when learners actively process the new word meanings, and when they experience multiple encounters with words. At the same time, because

#### What we know

- Children learn words at a rate of 3,000–4,000 words a year.
- Vocabulary programs must provide rich language experiences and direct instruction in vocabulary and word-learning strategies.

there are so many words to teach, not all words can or should receive rich, deep, and extended instruction. There is a need for both rich and deep teaching on some words and less time-consuming introductory teaching on others. Recent research, for example, shows that for ELLs high frequency conceptually complex words need more powerful teaching than high frequency concrete words. Additionally, it is important to review words already taught, regardless of how they were initially taught.

#### 3. Teaching word-learning strategies

The third component of a comprehensive program is teaching word-learning strategies. The most widely recommended strategies are those that use context and word parts to infer the meanings of unknown words met in reading. Using the dictionary is a third recommended approach students can use to learn word meanings themselves.

#### 4. Fostering word consciousness

The last component of a comprehensive program is fostering word consciousness. The term *word consciousness* refers to an awareness of and interest in words and their meanings. Students who are word conscious are aware of the words around them – those they read and hear and those they write and speak. This awareness involves an appreciation of the power of words and an understanding of why certain words are used instead of others. It also involves recognition of the communicative power of words, of the differences between spoken and written language, and of the particular importance of word choice in written language.

#### Special considerations for ELLs

ELLs will certainly profit from the four-pronged approach described thus far. However, their learning will be enhanced if it is adjusted to meet their particular needs. One adjustment is the strategic use of the first language to make teaching in a second language comprehensible. By providing necessary information and explanations in the language that children understand best, a teacher can increase their success. Another adjustment is to teach ELLs to draw on their first language knowledge to infer the meaning of unknown cognates in a second language. A third adjustment is

to provide scaffolding in the form of visual representations of language, as well as enhanced or more explicit modeling or explanation than ELLs might normally get in mainstream classrooms. Finally, a fourth adjustment is to provide additional time to help ELLs master unfamiliar concepts and skills they may not have acquired due to poor or interrupted prior schooling. For example, pre-teaching vocabulary central to the concepts being taught in core content area classes will help ELLs better understand lessons delivered in English.

#### Summary

Given the size of the word-learning task children face, a multifaceted program that provides them with rich and varied language experiences, teaches individual words, teaches word-learning strategies, and fosters word consciousness is necessary to help all children build strong vocabularies. Additionally, some adjustments are necessary to provide ELLs with the best possible vocabulary teaching.

#### About the authors

**Michael Graves** is Professor Emeritus of Literacy Education at the University of Minnesota, a member of the Reading Hall of Fame, and the author of several books on vocabulary instruction. **Diane August** is a Senior Research Scientist at the Center for Applied Linguistics. She directs several federally-funded studies that focus on the development of literacy in second-language learners. **Maria Carlo** is an Associate Professor in the Department of Teaching and Learning at the University of Miami. Her research focuses on the development of literacy skills in bilingual children and adults. Mike, Diane, and Maria are currently writing a book on vocabulary instruction for ELLs.

#### Further reading

August D & Shanahan T (2010), *Effective English Literacy Instruction for English Learners*, in *Improving Education for English Learners: Research-based Approaches*. Sacramento: California Department of Education.

Baumann JF & Kame'enui EJ (Eds) (2004, 2nd ed. in press), *Vocabulary Instruction: Research to Practice*. New York: Guilford Press.

Graves MF (2006), *The Vocabulary Book: Learning and Instruction*. New York: Teachers College Press, IRA, NCTE.

Stahl SA & Nagy W (2006), *Teaching Word Meanings*. Mahway, NJ: Erlbaum.



# Vocabulary: What words should we teach?

Vocabulary is crucial for successful reading, but how should teachers support students who are behind their peers, and what words should they teach? Andrew Biemiller explains

**SUCCESSFUL READING REQUIRES BOTH** success at reading words *and* knowledge of the words read—a prerequisite to comprehending text. We now know that vocabulary is the best predictor of reading and language comprehension by the time children are halfway through elementary school. For example, kindergarten general vocabulary is the best predictor of grade 3 or 4 reading comprehension. Moreover, it has also been shown that grade 1 general vocabulary is a strong predictor of reading comprehension in grade 11. Researchers have shown that when specific vocabulary needed in particular texts is taught, comprehension of those texts is improved.

During the primary grades (kindergarten to grade 2), average children acquire 1,000 root word meanings per year. A word such as *rock* is a root word. Each root word meaning has many related meanings created with prefixes and suffixes (e.g., *rocks*, *rocky*). These are “derived” words. If we include all word meanings, children probably know three to five times more meanings than just the root meanings.

I estimate that the 25% of children with the lowest vocabularies acquire roughly 400 fewer root word meanings each year than their average peers, both before and during the primary grades. Thus, if adequate vocabulary is needed for grade-level reading comprehension, low vocabulary students need to add at least this many additional meanings each year if they are not to fall steadily further behind during elementary school. Can this actually be done? If children make average gains in vocabulary in the first few years, will they actually achieve grade-level reading comprehension by the end of grade 3 or 4? These questions remain to be answered.

## Teaching vocabulary to primary-grade children

Lower-vocabulary primary-grade students need to acquire an additional 400 word meanings each year to avoid falling further behind in vocabulary. Available studies suggest that approximately 1,000 word meanings need to be taught each year for individual primary-grade

children to gain as much as 400 meanings, as some children will already know some of the meanings and some meanings will simply not be learned.

Teaching vocabulary to primary-grade children should not be tied closely to classroom reading, especially in kindergarten and first grade. Instead, early reading by children should be restricted mainly to vocabulary known by readers. Stories and

Grade 1 general vocabulary is a strong predictor of reading comprehension in grade 11

other readings containing many potentially unfamiliar words should be read to children, combined with discussion of word meanings. Most successful vocabulary teaching for primary-grade children has included several re-readings of the same book, combined with teaching some word meanings in conjunction with (or just after) reading a text. In my experience, such instruction is likely to take about half an hour daily.

## What words should we teach?

There is good evidence that word meanings are acquired in a predictable sequence. Three children from the 2nd, 4th, and 6th grades, each with vocabularies of about 8,000 root word meanings, are likely to know mainly the same meanings. This robust sequence means that it should be possible to determine the meanings that are needed by primary-grade children. However, if teachers are going to do more to help students build their needed vocabulary, they need some basis for deciding what words to address. There are far too many possible words to teach all of them.

The frequency of words appearing in text is often used to decide which words to teach, but this can be a misleading guide. Print frequency refers to print form, not word meaning. More common words frequently have more than one meaning.

## Words Worth Teaching

Word meaning knowledge is a better guide than print frequency in terms of deciding which words should be taught. In my research, *Words Worth Teaching*, I established high priority root word meanings for teaching in the primary grades by ranking words known by children at the end of grade 2 as follows:

- **Easy:** Meanings known by 80% or more of the children. Not requiring special attention.
- **High priority:** Meanings known by 40–79% of the children.
- **Difficult:** Meanings known by fewer than 40% of the children. Appropriate for attention in later years.

Using these criteria, I found some 1,600 high priority root meanings that should be addressed directly between kindergarten and grade 2. These should be addressed as they occur in meaningful texts. For primary-grade children, “addressing” usually means teaching meanings directly, as they are encountered in context. For upper-elementary children, in many cases it may be sufficient to make students responsible for learning meanings of priority words as they are encountered. Throughout elementary school, teachers should monitor learners’ acquisition of meanings as they are addressed. *Two-questions Vocabulary Assessment: Developing a New Method for Group Testing in Kindergarten Through Second Grade* provides a method for group testing children’s vocabulary in the first years of elementary school.

I also identified some 2,900 high priority meanings for attention between grade 3 and grade 6. These included the “Difficult” meanings that were tested or rated below 40% at the end of grade 2, or that were tested or rated between 40% and 79% at the end of grade 6.

Dale and O’Rourke’s *Living Word Vocabulary* also provides a useful guide on knowledge of word meanings at various ages, based on word meaning knowledge rather than print frequency, and was a cross-reference for *Words Worth Teaching*.

## Beck, McKeown, & Kucan’s Tiers

Beck and her associates’ “Tier” categories (*Bringing Words to Life: Robust Vocabulary Instruction*) are similar to the easy, high priority, and difficult categories just described: However, they suggest that Tier One “basic



words" include most of the 8,000 root words (or word families) reported to be known by average children in grade 3. Unfortunately, by the end of grade 2 a lot of these word meanings are not known by many children. For these children, many of those 8,000 Tier One meanings will prove to be what I have called high priority meanings.

Beck and associates' Tier Two words are "of high frequency for mature language users and are used across a variety of domains. Examples include *coincidence*, *absurd*, *industrious*, and *fortunate*." Most of these and similar meanings will be useful for upper-elementary and middle school children. However, for primary-grade children, many words that lower-vocabulary children need would be omitted, while many of their Tier Two word meanings would rarely be needed.

Finally, their Tier Three words have low print frequencies, and are often limited to specific subjects. Examples are *isotope*, *lathe*, *peninsula*, and *refinery*. Such meanings are best taught when encountered in specific lessons. I agree with Beck and her co-authors about these more advanced meanings.

### Conclusion

Vocabulary teaching is equally important for the comprehension of text as word

### What we know

- Word meanings are acquired in a predictable sequence.
- Children with the lowest vocabularies know 2,000 fewer root words than their average peers by the end of grade 2.
- Vocabulary teaching programs can stimulate general vocabulary – not just those words that are taught.

recognition skills, and teachers should support primary-grade children who have fallen behind their peers in their knowledge of high priority root words. A number of researchers have even demonstrated that some vocabulary teaching programs have shown positive effects on general vocabulary – not just the vocabulary taught.

### About the author

**Andrew Biemiller** is Professor Emeritus at the Institute of Child Study, University of Toronto. His work currently focuses on vocabulary and reading (language) comprehension. He is also a consultant for research groups, publishers, and U.S. federal and state agencies mainly on vocabulary development and teaching.

### Further reading

Biemiller A (2009), *Words Worth Teaching*. Columbus, OH: SRA/McGraw-Hill.

Beck IL, McKeown MG, & Kucan L (2002), *Bringing Words to Life: Robust Vocabulary Instruction*. New York, NY: Guilford.

Blachowicz C & Fisher P (2009), *Teaching Vocabulary in All Classrooms*. Upper Saddle, NJ: Pearson.

Dale E & O'Rourke J (1981), *Living Word Vocabulary*, Chicago, IL: World Book/Childcraft.

Graves MF (2006), *The Vocabulary Book: Learning and Instruction*. New York, NY: Teachers' College Press.

Kearns G & Biemiller A (2010), Two-questions Vocabulary Assessment: Developing a New Method for Group Testing in Kindergarten Through Second Grade. *Journal of Education*, 190(1/2), 31–42.

Stahl SA & Nagy WE (2006), *Teaching Word Meanings*. Mahwah, NJ: Lawrence Erlbaum Associates.