# TEACHING WORD MEANINGS

Steven A. Stahl • William E. Nagy

LITERACY TEACHING SERIES

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# TEACHING WORD MEANINGS

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# Contents

# Preface

This book is about how children learn—and how teachers can help them learn—the meanings of new words. Learning new words is foundational to success in school. Researchers have known for years that how many word meanings a student knows is one of the single strongest predictors of how well that student will understand text. Knowing the meanings of words, and being able to use them, is essential for effective writing. As well, knowing the concepts in a domain is intimately tied in with knowing the words that convey them. Hence, having a large vocabulary is both a powerful tool for a variety of academic and life goals, and an end in itself. One of the things that effective teachers must be able to do is support and increase the vocabulary growth of their students.

Thus, this is a book about vocabulary instruction. Both of us are proud to have devoted much of our professional lives to studying how children learn words, and how teachers can help them learn even more. However, the word *vocabulary* carries with it a variety of images and connotations, some of which have little to do with the goals of this book. That's one of the reasons we didn't use the word *vocabulary* in the book's title. Let us start by telling you a few things that we're not trying to do in this book, which this word might seem to imply.

First of all, we're not primarily interested in the processes by which children develop their *sight vocabularies*. The phrase *sight vocabulary* refers to those words whose printed form the child can recognize easily and quickly. Helping children develop large sight vocabularies is indeed an important part of early reading instruction, but for the most part this process

involves words that are already part of children's oral vocabularies. In this book, on the other hand, we're interested in helping children learn new word *meanings*.

Because early reading instruction is often focused on decoding, some might think that vocabulary should start in earnest only after children have mastered the mechanics of reading. We disagree. In fact, it has been argued that the "fourth-grade slump" experienced by some students is the result of a general neglect of vocabulary development in the primary grades. Of course, the methods for promoting vocabulary growth in primary-grade students will look a lot different from those used with older students, and will take place primarily through the medium of the spoken language.

Another problem with the word *vocabulary* is that it may call up images of traditional instructional activities that run the danger of being lethally boring, as well as being ineffective. However, to have the desired impact, vocabulary instruction must not only teach words, but also help students develop an interest in words.

One more thing we would like to make clear from the outset is that our purpose is not to get teachers to spend large amounts of time doing vocabulary activities. We do, of course, present some means of teaching word meanings that are effective and, we hope, interesting for both teachers and students. However, our goal is not to increase the amount of time you spend on "vocabulary," but rather to increase the extent to which you are intentional about improving the reading vocabularies of your students. Sometimes this will involve activities in which you help students learn the meanings of specific words. However, there are a variety of things you need to do to help students develop large vocabularies—many of which you want to be doing for other reasons as well. Our goal, then, is to give you a variety of tools that will all contribute to your students' vocabulary growth.

This book is divided into three parts. (Any of you old enough to have studied Latin may recognize the allusion the introduction of Caesar's *Gallic Wars*.)

Part I, "The Lay of the Land," addresses the big picture, trying to make sure that you have a good grasp on the *why*s before we move to the *how to*s. In chapter 1 we remind you of several reasons why vocabulary is such an important part of a child's education. In chapter 2, we talk about the relationship between vocabulary and reading comprehension. This relationship is more complex than one might expect; the complexities give us some important clues about what an effective approach to vocabulary instruction must look like. Chapter 3 presents the obstacles to vocabulary growth—reasons why setting out to help children develop large vocabularies is a challenging task. In chapter 4, we outline the response to the complexities and problems raised in the preceding two chapters—a multi-

faceted approach to promoting long-term, large-scale vocabulary growth in schoolchildren.

Part II, "Teaching Specific Words," covers the variety of instructional techniques that can be used to help children learn the meanings of individual words. There are various techniques because there are different kinds of words to learn, and different reasons for learning them. In chapter 5, we talk about the kind of intensive instruction that is necessary for those words that you want children to be able to use effectively for understanding, as well as in their own writing. Chapter 6 is about teaching concepts. Often, the meanings of words—that is, the concepts they represent—*are* the content being taught. When these concepts are new or difficult, instruction must ensure that students achieve a thorough understanding of these concepts. Chapter 7 addresses high-frequency words—the core words of the language that occur in every genre and every topic, which you are tempted to assume that your students already know. Most of them do, but as the students in our classrooms come to represent an ever-increasing diversity of cultural and linguistic backgrounds, we cannot afford to take anything for granted.

Chapters 5 through 7 examine instruction focused specifically on teaching word meanings. Chapter 8, on the other hand, deals with the kind of explanations about words that teachers must be ready to provide throughout the curriculum. Only a small part of the schoolday need be devoted to vocabulary per se, but teachers must capitalize on the myriad of opportunities that arise throughout the day for adding to students' store of word knowledge.

Part III, "Independent Word Learning," talks about what we can do to promote vocabulary growth besides teaching or explaining individual words. Although teaching children specific words is essential, it is even more important that we increase children's rate of learning words that are not covered in instruction. In chapter 9, we talk about exposure to rich language, the essential raw material for independent word learning. Chapter 10 deals with word consciousness—the interest in words and motivation to learn them that drive independent word learning. In chapters 11 through 13, we discuss specific word learning strategies—use of word parts, context, and dictionaries.

In the conclusion, chapter 14, we provide a simple framework—seven basic categories of words—to sum up one of the main themes of the book: Because there are different kinds of words, and different reasons for learning them, teachers need to be strategic in deciding which words to teach, how to teach them, and which words not to teach at all.

*—Steven A. Stahl*
*—William E. Nagy*

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# I

# The Lay of the Land

Part I of this book is called "The Lay of the Land." The goal of this book is to help teachers promote large-scale, long-term vocabulary growth in their students. Like most other aspects of teaching, this is a difficult and complex task. Success depends on understanding as well as on effort. This part of the book aims to provide the big picture.

Chapter 1 is called "The Importance of Vocabulary." One reason that vocabulary is important is because of its role in reading comprehension, which in turn is essential for the rest of students' learning. To be academically successful, students must have large reading vocabularies. The other main reason for the importance of vocabulary is that the students who need your help the most—whether because of family resources, or the use of a different language at home, or any other factors—are very likely going to also have challenges mastering the vocabulary that is essential for success in school.

Chapter 2, "Vocabulary Knowledge, Reading Comprehension, and Readability," explores the reasons why children who know more words also understand text better. It may sound obvious why this is the case, but there are actually a rather complex set of connections between vocabulary and reading ability. Each of these connections tells us something about what an effective approach to promoting vocabulary growth must look like.

Chapter 3, "Problems and Complexities," gives the bad news. Helping students develop large reading vocabularies is a difficult task, for a number of reasons. If you don't know the nature, and the severity, of the problems

facing the students, it may be hard to see the need for the solutions, or to devote the energy necessary to make them work.

Chapter 4 presents "A Comprehensive Approach to Vocabulary Learning." We can't offer some simple magic bullet to solve students' vocabulary problems, but we can provide a coherent plan. This chapter is, in effect, an overview of the rest of the book, which presents the various components of a comprehensive, multifaceted approach to helping students learn the thousands of words they need to know to be successful in school and beyond.

# 1

# The Importance of Vocabulary

Polonius: What's that you read, m'lord?
Hamlet: Words, words, words.

(Shakespeare, 1600–01, *Hamlet*, Act II, Scene ii)

Words, words. They're all we have to go on.

(Stoppard, 1967, *Rosencrantz and Guildenstern are Dead*, p. 41)

Words are so pervasive in our life, so central to being human, that we do not often stop to reflect on their value and power. Like the proverbial fish that is unaware of the water in which it swims, we are seldom conscious of how much of our experience is in terms of language.

The words that we use both express and shape who we are. Our vocabulary, even more than our accent, gives away our social and educational background. As a major factor in determining what we can understand, it opens or closes access to sources of information that will impact our future.

This is a book about vocabulary—about how schoolchildren learn words, and about how teachers can help them learn more. We need to make it clear at the outset, that by *vocabulary* we will be referring to students' knowledge of word *meanings*. We distinguish this from *word recognition*, which involves recognizing the written form of words. Likewise, we are not talking about *sight vocabulary*, which is recognition of words "by sight" or automatically. Word recognition, sight vocabulary, and decoding are important topics in their own right, but in this book we are concerned with how

students acquire new *meanings*—that is, how they learn new concepts, and how they learn new words for familiar concepts.

Why a book about vocabulary? Because words are the tools we use to access our background knowledge, express ideas, and learn new concepts. The words children know will determine how well they can comprehend texts, in the upper elementary grades, in middle and high school, and in college. Reading is far more than recognizing words and remembering their meanings, but if the reader does not know the meanings of a sufficient proportion of the words in the text, comprehension is impossible.

The importance of vocabulary knowledge for reading comprehension would seem self-evident to anyone who has ever read a jargon-filled text and was left scratching his or her head. Here is an example from an early draft of a paper written by one of us with a colleague:

> The findings of our study also reveal that there is nothing especially difficult about setting up a mental representation for a new lexical item as presumably children would have to do for unknown words. For example, for localist versions of connectionist viewpoints, it seems probable that one would first have to create a new lexical node before orthographic, phonological, and semantic information could become connected with it. (reference withheld because of embarrassment)

To understand this paragraph, one needs to know the meanings of words like *connectionist, lexical, node,* and so on. Without that knowledge, this paragraph is gibberish. This passage illustrates one of the oldest findings in educational research—the strong relationship between vocabulary knowledge and reading comprehension. Correlational studies, readability research, and experimental studies have all found strong and reliable relationships between the difficulty of the words in a text and text comprehension (Anderson & Freebody, 1981). Vocabulary knowledge and reading comprehension correlate so highly (in the 0.85 to 0.95 range) so that some authors have argued that they are psychometrically identical (e.g., Carver, 2003; R. Thorndike, 1974). Others have found that prose literacy has modest but significant correlations with occupational status and participation in society (Guthrie & Hutchinson, 1991). It may overstate the case to say that vocabulary knowledge is central to children's and adults' success in school and in life, but not by much.

The English language, with its penchant for borrowing and its worldwide use, probably has a stock of words larger than that of any other language. It is not surprising, then, that among speakers of English, a large vocabulary is one of the most important parts of verbal proficiency. In fact, the statistical

relationship between vocabulary size and intelligence is so strong that a vocabulary test alone is often used in place of a full-scale test of verbal IQ (Anderson & Freebody, 1981).

Vocabulary is closely associated not just with intelligence, but also with knowledge. Although "a rose by any other name would smell as sweet," a person knowing not only *rose* but *nasturtium, bluebonnet, black-eyed Susans,* and so on understands more about flowers than does a person who knows only *flower* and perhaps a few common flower names.

A person who knows more words can speak, and even think, more precisely about the world. A person who knows the terms *scarlet* and *crimson* and *azure* and *indigo* can think about colors in a different way than a person who is limited to *red* and *blue*. A person who knows about *balks, bunts* and the *double switch* can think about baseball in a different way than a person who doesn't. A person who can label someone as *pusillanimous* or a *recreant* can better describe a person's cowardly behavior. Words divide the world; the more words we have, the more complex ways we can think about the world.

For teachers, vocabulary is important most of all because of the huge differences that exist among their students. Differences in word knowledge occur early in life, and there are dramatic differences in the exposure to new words among families of different social classes. One study (Hart & Risley, 1995) found that children in the households of professional parents were exposed to 50% more words than were children in working-class families, and twice as many words as children in homes receiving Aid to Families with Dependent Children. Hart and Risley noted that the poorest children had concomitantly fewer words spoken to them, with more words spoken in imperative sentences and fewer in descriptive or elaborative sentences. As an outcome of these differences in exposure, the children from the most advantaged homes had receptive vocabularies five times larger than did the children from homes with the lowest incomes. The picture that Hart and Risley presented was that of a dramatic gap in word knowledge between well off and poor, one that begins early in life and threatens to grow with time.

This does not mean that children from poor homes are condemned to linguistic poverty. On the contrary, it is not hard to find successful people from humble beginnings. Education can make a difference. Some studies have found that good school experiences can overcome the effects of inadequate home experiences (Snow, Barnes, Chandler, Goodman, & Hemphill, 1992). Going to school does not guarantee vocabulary growth; other studies have found no impact of school attendance on young children's vocabularies (Cantalini, 1987; Morrison, Williams, & Massetti, 1998). However,

teachers are clearly in a position to have a powerful impact on children's language development (Dickinson & Smith, 1994).

Vocabulary is also one of the primary challenges facing students who come from non-English-speaking homes. Students from low-income or non-English-speaking homes come to schools with rich funds of knowledge and experience (Moll, Amanti, Neff, & Gonzalez, 1992) that teachers need to recognize and build on. However, ultimately success in school requires linking personal knowledge and experience to the vocabulary of the school. A child may achieve fluency in conversational English in a year or so; but even under optimal circumstances, it may take an English language learner 5 or more years to catch up in terms of the vocabulary of academic English (Collier, 1989; Cummins, 1994).

Past electronic revolutions—telephone, radio, and television—increased the role of oral language in communication. However, despite the increasing use of multimedia, the current wave of information technology shows no signs of making written language an endangered species. Although the word *literacy* is continually being redefined to take into account changes in the contexts in which people encounter written language and the purposes for which they use it, the level of literacy one needs in order to participate fully in society continues to rise.

Perhaps one of the most important reasons why teachers need to pay attention to vocabulary is that vocabulary knowledge is cumulative. The more words you know, the easier it is to learn yet more words. For example, Shefelbine (1990) looked at children's ability to infer the meanings of new words they encountered from context. He found that one of the biggest obstacles facing the less successful children was that they didn't know the meanings of the other words in the context—the words that were supposed to provide the clues for the meanings of the new words. This is a classic case of a "Matthew effect" described by Stanovich (1986). The notion of a Matthew effect comes from the passage from the gospel in which it is foretold that the rich will get richer and the poor will get poorer. Children with weak vocabularies in the early grades will not be able to take advantage of richer texts due to their lack of word knowledge. Because they cannot understand more difficult texts, they will learn fewer words and hence fall further and further behind. Thus, individual differences in vocabulary size, and vocabulary differences related to socioeconomic status or home language, tend to widen over time. Students with smaller vocabularies will fall progressively further behind—unless something is done.

Although the importance of vocabulary seems obvious enough to us, this perception is not universally held. Every year, *Reading Today* (the bi-

monthly newspaper of the International Reading Association) includes an article on "What's Hot, What's Not." A topic is "hot" if it is judged (by a panel of "literacy leaders") to be receiving increasing and positive attention. In the December 2003/January 2004 poll, for the fourth time in 4 years, vocabulary/word meanings was considered by the majority of the leaders to be "not hot." That is, in their estimation, people in reading-related professions were not especially interested in or concerned about this topic (Cassidy & Cassidy, 2003/2004).

The opinion that vocabulary is "not hot" is backed up by research. A number of studies have shown that, in general, very little classroom time is given to vocabulary instruction (e.g., Durkin, 1978/1979; Scott, Jamieson-Noel, & Asselin, 2003).

Why is vocabulary instruction relatively unpopular? We think that there are two main reasons for this. One is the tendency to treat word-level reading processes and higher-level processes as "either/or" rather than as "both/and." That is, some teachers think they should be focusing on issues of interpretation and critical thinking *instead* of vocabulary. Another reason for the neglect of vocabulary is the tendency to think of vocabulary instruction in terms of traditional methods that have been shown to be ineffective—for example, "memorize the definition, and write a sentence using the word."

It should be noted, however, that rating vocabulary as "not hot" did not reflect what these literacy leaders thought should be the case. On the contrary, vocabulary/word meanings was also listed as a topic that "should be hot" (Cassidy & Cassidy, 2002/2003, 2003/2004). This judgment that vocabulary should be a hot topic is consistent with the National Reading Panel's decision to consider vocabulary as one of five key areas to be addressed in reading instruction.

What needs to be done? That's what the rest of the book is about.

We need to be honest with you, though: Helping students gain large reading vocabularies is neither simple nor easy. An effective approach to promoting vocabulary growth has to be multifaceted and sustained. To make the effort that is needed, you have to know not only the importance of vocabulary knowledge to educational success, but also the complexity and difficulty of the vocabulary problems that many students face. In other words, we think that it's best to tell you the bad news before we tell you the good news. The next two chapters, then, are devoted to complexity and difficulty. Chapter 2 is about the relationship between vocabulary knowledge and reading comprehension. The common-sense understanding of this relationship—that knowing more words makes you a better reader—is true,

but only a part of a complex picture. These complexities have a lot to tell us about what makes for effective vocabulary instruction. Chapter 3 is about additional complexities and problems facing any attempt to help students attain substantial growth in their reading vocabularies. Please bear with us, though. It's essential to understand the nature of the problem before you decide on a solution.

# 2

# Vocabulary Knowledge, Reading Comprehension, and Readability

> The difference between the *almost*-right word & the *right* word is really a large matter—it's the difference between the lightning bug and the lightning.
>
> (Mark Twain, 1888 letter to George Bainton, published in Bainton, 1890, *The Art of Authorship*, pp. 87–88)

One of the main reasons teachers are interested in improving students' vocabularies is to help make them better readers. In fact, it has been known for a long time that the size of a person's vocabulary is one of the strongest predictors of how well that person can understand what he or she reads (Anderson & Freebody, 1981; Davis, 1944). This relationship between vocabulary and comprehension, which is hardly surprising, seems to have an obvious interpretation: Having a big vocabulary makes you a better reader. The instructional implication also seems obvious: If you teach students more words, they will understand text better.

This implication isn't completely off track. In fact, one of our main goals in promoting students' vocabulary growth is to make them better able to understand what they read. However, the relationship between vocabulary knowledge and reading comprehension is more complicated than just knowing more words makes you a better reader. If we want to increase students' vocabularies as a way of improving reading comprehension, it's important to have at least some understanding of this complexity. In particular, considering the nature of the connections between vocabulary

and reading comprehension can tell us some important things about how we should approach the task of trying to increase students' vocabularies.

## Hypotheses

Richard C. Anderson and Peter Freebody (1981) were the first to lay out some of the different possible explanations of why a larger vocabulary is associated with better reading ability. The first possibility they labeled the *instrumental hypothesis*—the idea that it is simply knowing more words that makes you a better reader. This idea seems so obvious that you might wonder why they bothered to give it a special name. The reason for this label becomes clearer when you realize that there are some other possible explanations of the relationship between vocabulary knowledge and reading comprehension that are almost equally plausible.

A second possible explanation is the *knowledge hypothesis*. According to this hypothesis, it is not the knowledge of the words per se that makes one a better reader, but instead the knowledge of the concepts that the words represent. An example may be helpful in distinguishing the knowledge hypothesis from the instrumentalist hypothesis: Imagine that you give students a simple vocabulary test containing one word, *photosynthesis*, and only half of the students pass. Next you give them a text to read, on the subject of "how plants make their own food." Imagine further that this text is written in relatively simple language, and does not contain the word *photosynthesis*. Finally, you give the students a comprehension test covering the contents of the passage they read.

It's probably going to be the case that students who knew the word *photosynthesis* did better on the comprehension test. But why? It isn't vocabulary knowledge per se that made the difference, because the text didn't contain the word *photosynthesis* and we are assuming that all the words actually used in the text were familiar to the students. The difference is that the students were not all equally familiar with the *concepts* discussed in the text. Those students who knew the word *photosynthesis* were the ones who knew more about plants, and how plants produce food.

Although this example may seem a little contrived, it illustrates a general principle that has been strongly documented: A readers' knowledge of the topic of a text determines how well he or she will understand that text. It is not that knowledge of the individual words plays no role, but instead that the knowledge of individual words is simply the tip of the iceberg—it is the rich, interconnected knowledge of concepts that really drives comprehension.

Another way to make the same point is to emphasize the connections that exist among word meanings. In dictionaries, each word has a separate definition, and you might be tempted to think that words are stored in your memory in the same way—each word in its own separate little file drawer. However, that's not how human memory works. A somewhat more accurate picture is to think of word meanings as stored in semantic networks. Each word is connected to other words, and to other concepts, facts, and specific memories. When a word is recognized, the connections to other words in the network are also evoked. Hence, when a person reads the word *whale*, for example, any knowledge the person has about whales could be activated. Whether or not a particular text contains the word *orca*, the reader who knows that word probably has a more elaborated network of information about whales than does a person who doesn't know this word. Thus, even if the word *orca* is not in a particular text about whales, a person who knows that word will understand the text more thoroughly than a person who doesn't. The richer the knowledge a person has about the topic of a text, the more that person can learn from that text. Thus, even in the case of children reading simplified texts, children with more knowledge may recall more (Stahl & Jacobson, 1986).

A third hypothesis about the relationship of vocabulary knowledge to reading comprehension is the *aptitude hypothesis*. According to this hypothesis, vocabulary knowledge and reading comprehension are correlated, not because one causes the other, but because both reflect a more general underlying verbal aptitude. Students with high verbal ability will be better word learners, and end up with larger vocabularies. Students with high verbal ability are also better at understanding what they read. Thus, such students will get high scores on both vocabulary tests and comprehension tests, but a direct link between reading ability and vocabulary is not, according to this hypothesis, logically necessary.

The aptitude hypothesis can be further refined or subdivided, according to which aspects of verbal ability one thinks are most important to the connection between vocabulary knowledge and reading ability. Sternberg and Powell (1983), for example, suggested that the relationship between vocabulary knowledge and reading comprehension may lie in the ability to make inferences. This ability is crucial to comprehension, and it is vital to figuring out the meanings of unfamiliar words.

Sternberg and Powell's (1983) interpretation of the aptitude hypothesis focused on inferencing ability as a way of explaining the relationship between vocabulary knowledge and reading comprehension. However,

there are other aptitudes or abilities that might also explain some of the connection between vocabulary knowledge and reading comprehension. We believe that metalinguistic awareness is one such ability. Hence, another account of the relationship between vocabulary knowledge and reading comprehension could be labeled the *metalinguistic hypothesis*.

Actually, metalinguistic awareness encompasses a range of abilities that may be involved in the link between vocabulary and reading comprehension. One type of metalinguistic ability that is known to play an important role in early reading is phonemic awareness (Ehri et al., 2001). There is some evidence that vocabulary knowledge contributes to phonemic awareness (Fowler, 1991; Metsala, 1999; Metsala & Walley, 1998). Therefore, one of the reasons for a correlation between vocabulary knowledge and reading comprehension is that young children with large vocabularies tend to have higher levels of phonemic awareness. Higher levels of phonemic awareness result in more success in early literacy, which in turn contributes to greater comprehension.

Another aspect of metalinguistic awareness that may relate vocabulary to reading comprehension is morphological awareness—the awareness of the structure of words in terms of morphemes (i.e., prefixes, roots, and suffixes). Students with bigger vocabularies are likely to have more morphological awareness, and vice versa. However, morphological awareness also contributes to reading comprehension (Nagy, Berninger, Abbott, Vaughan, & Vermeulen, 2003), in part by helping children decode long words more accurately and fluently.

There are other types of metalinguistic awareness that may also be related to both vocabulary knowledge and reading comprehension. The concept of word in text (i.e., the ability to finger point, or match written and spoken words in text) is one that may be important in early stages of learning to read (Morris, Bloodgood, Lomax, & Perney, 2003). Later on, other types of awareness of language—for example, the ability to understand figurative language—may be important.

Another type of metalinguistic awareness is sensitivity to polysemy, or multiple meanings. As we have already noted, most common words have multiple meanings. The meaning of a word shifts at least to some extent every time it is used in a new context. The variability of word meanings is far greater than one typically realizes. If you look at the dictionary entry for a common word, you find more meanings than you might have expected. On reflection, one has to admit, for example, that the meaning of *strict* is different in *a strict interpretation* than it is in *a strict parent*, even though the two are clearly similar. This proliferation of shades of meaning is an ongo-

ing process; Green (1984) estimated that 15% of the words in newspapers, for example, are used with senses not listed in any dictionary.

What does this have to do with the relationship between vocabulary knowledge and reading comprehension? It gets back to another twist on the aptitude hypothesis, similar to the two that have already been mentioned. A person with a larger vocabulary not only knows more words, but also knows more meanings for many words (Qian, 1999; Vermeer, 2001). The process of understanding text requires a certain flexibility in dealing with words that enables one to adjust the meaning of the word to fit new contexts; this same ability is obviously crucial in learning these new meanings.

Karen Mezynski (1983) added another hypothesis to the three suggested by Anderson and Freebody—the *access hypothesis*. This hypothesis highlights the importance of automaticity of word knowledge in comprehension. People who know more words also have deeper, and more fluent, knowledge of the words they have in common with people possessing smaller vocabularies. This is especially important to get the correct shade of meaning used in a particular context. A person with a larger vocabulary therefore has an advantage in terms of being able to access the meanings of even common words more quickly. Because automaticity, as well as accuracy, of word knowledge is important for comprehension (LaBerge & Samuels, 1974; Samuels, 2002), being able to access word meanings more quickly results in better comprehension of text.

Finally, Stanovich (1986) and others have suggested what could be called the *reciprocal hypothesis*—that the relationship between vocabulary knowledge and reading comprehension goes both ways. On the one hand, it seems plausible (as asserted by the instrumental hypothesis) that knowing more words would make one a better reader. On the other hand, being a better reader generally means that one reads more; and if much of a person's vocabulary is gained through reading, one would expect better readers to develop larger vocabularies.

One can think of this relationship in terms of a circle: Having a bigger vocabulary makes you a better reader, being a better reader makes is possible for you to read more, and reading more gives you a bigger vocabulary. This circular relationship tends to increase differences over time. On the positive side, better readers tend to read more, acquire bigger vocabularies, and become even better readers. On the negative side, poorer readers tend to read less, fail to develop large vocabularies, and find reading to be increasingly difficult as the vocabulary demands of the texts they have to read become greater.