

Learning Words in a Second Language

I went into the word and I found love.

—From a 5th-grade Spanish-speaking student who had learned to use first-language cognate knowledge and second-language morphological knowledge to infer the meaning of an unknown English word *amorous*

Is word learning different in a second language? Clearly, we believe it is different in some ways. We would not have written this book if we thought otherwise. Research and theory about the vocabulary acquisition and instruction of native English speakers has been very influential in shaping the way we think about how to teach vocabulary to second-language learners, but research and theory on bilingualism and second-language acquisition also suggest that there are important differences between instruction in a first language and in a second that we need to attend to in order to increase instructional effectiveness and efficiency. One source of differences between first- and second-language vocabulary development stems from learners' degree of proficiency in the second language. A second stems from learners' level of proficiency in the mother tongue. State-reported data indicate that there were an estimated 5.3 million English language learners enrolled in U.S. public schools (preK through grade 12) for the 2008–2009 school year. This number represents approximately 10.8% of total public school student enrollment (National Center for English Language Acquisition, 2011a). Additional data indicate that the number of ELLs in U.S. public schools increased 51% between the 1998–1999 and 2008–2009 school years, with increases in 11 states of over 200% (National Center for English Language Acquisition, 2011b).

In this chapter, we take up three major topics: First, we consider the vocabulary learning task that students face across the K–12 years. Then we consider the role of individual, home, school, and instructional context in second-language vocabulary development. Finally, we turn to the main theme of the chapter, effective vocabulary instruction.

THE VOCABULARY LEARNING TASK STUDENTS FACE

What Is a Word?

Vocabulary can be classified as receptive (words we understand when others use them) or productive (words we use ourselves). Vocabulary can also be classified as

oral or written. Thus, each of us has four vocabularies: Words we understand when we hear them (receptive/oral), words we can read (receptive/written), words we use in our speech (productive/oral), and words we use in our writing (productive/written). The four vocabularies overlap but are not the same, and the relationships among them change over time. Children entering school, for example, have larger oral than reading vocabularies in their first language. Literate adults, on the other hand, have larger reading than oral vocabularies. And both children and adults have larger receptive vocabularies than productive ones; that is, they understand more words than they use in their speech or writing. The emphasis in this book will be on reading vocabulary. However, all four types of vocabulary are important, and we will give some attention to each of them.

In order to talk about vocabulary size—the very important matter of how many words students know and need to learn—it is necessary to decide just what we will call a word. When written, words are groups of letters separated by white space. Thus, *the* is a word, *apple* another word, *predawn* another, *perpendicular* another, and *houseboat* still another. By this same definition, however, *want*, *wants*, *wanted*, and *wanting* are each separate words, though their only real difference is how they are grammatically inflected. Therefore, for the most part, when we are considering how many words students know or need to learn, we will use the term *word* to refer to *word families*. By *word families*, we mean the basic word and all of its inflected forms. Thus, we count the forms *want*, *wants*, *wanted*, and *wanting* as a single word.

Another convention we follow in talking about the size of the learning task is to count graphic forms with different meanings as a single word. Thus, *key* referring to the door key, *key* the musical term, and *key* meaning a small island are considered one word. Doing so definitely underestimates the size of the learning task, but it is necessary because this convention has been followed in virtually all studies of vocabulary size.

What Does It Mean to Know a Word?

Given the assumption that second-language word learning is influenced by knowledge of first-language words, it is necessary to carefully consider what it means to know a word for an ELL. Several researchers have weighed in on this issue. Recently, Beck, McKeown, and Kucan (2002) suggested this continuum of word knowledge for native English speakers:

- No knowledge.
- General sense, such as knowing *mendacious* has a negative connotation.
- Narrow, context-bound knowledge, such as knowing that a *radiant* bride is a beautifully smiling happy one, but unable to describe an individual in a different context as radiant.
- Having knowledge of a word but not being able to recall it readily enough to apply it in appropriate situations.
- Rich, decontextualized knowledge of a word's meaning, its relationship to other words, and its extension to metaphorical uses, such as understanding what someone is doing when they are *devouring* a book. (Beck et al., 2002, p. 10)

Previously, Cronbach (1942) noted that knowing a word involves the ability to select situations in which it is appropriately applied, recall different meanings of the word, and recognize exactly in which situations the word does and does not apply. Calfee and Drum (1986) noted that knowing a word well “involves depth of meaning; precision of meaning; facile access (think of Scrabble and crossword puzzle experts); the ability to articulate one’s understanding; flexibility in the application of the knowledge of a word; the appreciation of metaphor, analogy, word play; the ability to recognize a synonym, to define, to use a word expressively.” And Nagy and Scott (2000) further underscored the complexity of what it means to know a word when they discussed five aspects of the complexity of word knowledge—incrementality, polysemy, multidimensionality, interrelatedness, and heterogeneity—attributes that we discuss in Chapter 6.

Our understanding of the levels of word knowledge needs to be modified somewhat when applied to ELLs. For some ELLs, learning English words may be less orderly and incremental than for native English speakers (for example, learning may not directly follow Beck, McKeown, and Kucan’s [2002] continuum). ELLs whose first language shares cognates with English may recognize a word form in English, and if they know the meaning of the word in their first language, they may know the English meanings that overlap with the meanings in their first language. While this complicates our understanding of what it means to know a word, it can potentially simplify the process of second-language vocabulary instruction. To the extent that we can identify those words an ELL knows well in his first language, we can expedite learning by helping him apply first-language cognate knowledge to uncovering word meanings in a second language and focusing less on conceptual development and more on the word’s other possible meanings in English, as well as its usage.

How Many Words Are There?

In the most serious attempt to get a reliable estimate of how many words there are in contemporary American English, Nagy and Anderson (1984) completed a study appropriately titled “How Many Words Are There in Printed School English.” As part of the study, they investigated the number of words in printed English school texts, using as their source the *American Heritage Word Frequency Book* (Carroll, Davies, & Richman, 1971), which is a highly regarded compilation of the words occurring in books and other material likely to be used by children in grades 3–9. Based on careful study and a number of calculations, Nagy and Anderson (1984) concluded that printed school English contains about 88,000 word families. Subsequent to the original study, Anderson and Nagy (1992) again considered the size of printed school English vocabulary and concluded that if proper nouns, multiple meanings of words, and idioms were included, their estimate would increase to 180,000 word families.

More recently, Zeno, Ivens, Millard, and Duvvuri (1995) produced *The Educator’s Word Frequency Guide*, essentially an updated version of the *Word Frequency Book*, based on a much larger corpus of material used in kindergarten through college. Although no one has yet calculated the number of word families in the *Educa-*

tor's Word Frequency Guide, since the number of entries in the *Guide* is considerably larger than the number in the *Word Frequency Book*, it is reasonable to assume that an estimate of word families based on the *Guide* would be well over 180,000.

Note that these are not estimates of the size of individual students' vocabularies; they are estimates of the total number of words in the myriad texts students might encounter. Note also that many of these words are extremely rare and that no single student will encounter all of them, much less learn all of them. Still, realizing that there are this many words that could be taught is important. It is abundantly clear that we cannot directly teach all of them.

How Many Words Do Students Learn?

As noted in Chapter 1, estimates of the number of words in native English-speaking students' reading vocabularies vary considerably depending on how the estimate is made. Many of these estimates can be dismissed or at least very strongly questioned because of such factors as the size of the dictionary from which words were sampled, the definition of what constitutes a word, the method of testing, the sampling procedures used, and such ad hoc requirements as that a word appear in a number of different dictionaries (Graves, 1986; Lorge & Chall, 1963).

The most unbiased estimate of the size of native English-speaking students' reading vocabularies comes, in our judgment, from work done by Nagy and Herman (1987). Using data gathered from the Nagy and Anderson (1984) study, Nagy and Herman recalibrated earlier estimates and concluded that 3rd-graders' reading vocabularies average about 10,000 words, that 12th-graders' reading vocabularies average about 40,000 words, and that schoolchildren therefore learn about 3,000 words each year. These figures refer to word families as previously described, but they do not include idioms, other multiword units, multiple meanings, or proper nouns, which would raise the figure considerably. All in all, our best estimate—based on the work of Anderson and Nagy (1992); Anglin (1993b); Miller and Wakefield (1993); Nagy and Anderson (1984); Nagy and Herman (1987); and White, Graves, and Slater (1990)—is that average 12th-graders know something like 50,000 word families and learn from 3,000 to 4,000 words each year. These figures, however, are for native English speakers. ELLs, of course, have smaller English vocabularies. Moreover, the vocabularies of ELLs vary tremendously depending on their levels of first-language literacy development and second-language proficiency. The goal is to help all students develop an extensive vocabulary—something like 50,000 words—over their years in school. Based on this goal, many ELLs face a huge word-learning task.

There is one other crucial fact about the vocabulary-learning task that students face: The English language includes a very large number of infrequent words and a very small number of frequent words. Here are some examples of just how important frequent words are: The 100 most frequent words account for about 50% of the words in a typical text; the 1,000 most frequent words for about 70%; and the 5,000 most frequent words for about 80% (Hiebert, 2005). If a student does not know these very frequent words, he will be repeatedly stumbling over the words in anything other than a book with severely controlled vocabulary.

As we see it, the bottom line with respect to the number of words students eventually learn and what to do about helping them learn them is this: There are far too many words to teach all of them directly. There is a much smaller number of frequent words, and these can be taught directly. Teaching 2,000 to 4,000 of the most frequent word families directly, or at least ensuring that all children know these words as soon as possible, is a feasible task. In Chapter 3, we will discuss ways of selecting and teaching these very frequent words; and in Chapter 4, we will suggest how to select and teach less frequent words.

With regard to ELLs, several studies have shown that while ELLs' vocabulary growth rates are similar to and may even surpass those of native English speakers, they are typically 2 to 3 years behind native English-speaking students in vocabulary knowledge, and a large vocabulary gap remains (Mancilla-Martinez & Lesaux, 2011). Additionally, some data indicate that the sequence in which ELLs learn words is similar to that in which native English speakers learn them (Biemiiller, 2005). We can draw some important conclusions from this information: It is crucial to provide early, systematic, effective vocabulary instruction for ELLs to enable them to catch up to their native English-speaking peers as soon as possible, thus enabling them to take advantage of grade-appropriate instruction across the content areas.

THE ROLE OF INDIVIDUAL, HOME, SCHOOL, AND INSTRUCTIONAL FACTORS IN THE DEVELOPMENT OF ENGLISH VOCABULARY IN ELLs

Here we consider English proficiency and vocabulary learning, the role of first-language proficiency in English vocabulary learning, the role of home and school factors, and the role of instructional factors.

English Proficiency and Vocabulary Learning

We know that ELLs move along a continuum of English proficiency, with overlapping stages of language acquisition (Ellis, 1982). This means that teachers can use instructional strategies that scaffold students' incomplete knowledge of the language system to a greater or lesser extent depending on their degree of English proficiency.

ELLs face various types of linguistic demands when learning second-language words. At the most emergent stages of English proficiency, the task of orally segmenting words in a sentence poses challenges, as this task is tied to knowledge about phonological, syntactic, and lexical features in the language. The silences and pauses we think we hear between words in a language are not actually there in reality. In natural language, the speech signal is a continuous stream of sound. There are no pauses. As proficient English speakers, we "hear" pauses because we apply our knowledge of phonology, grammar, and words to appropriately segment the utterance. You have probably experienced this phenomenon when listening to someone speaking in a language you do not speak and been left with the impression that words in that language are very, very long!

To acquire word meanings incidentally from mere exposure to a language, learners need to be able to perceive individual words. The ability to do this develops in close relation to phonological and grammatical knowledge. Also, to acquire word meanings from context, as often occurs in first-language acquisition, learners need to be able to exploit the grammatical and semantic cues surrounding the unfamiliar word. A learner needs to know the meaning of the words that surround the unfamiliar word as well as how the words relate to one another. This can only happen in conjunction with ELLs' development of English proficiency. The development of English proficiency takes time, but can be expedited with direct and systematic second-language vocabulary instruction. Hence, we will not spend much effort reviewing research on learners' incidental acquisition of second-language vocabulary aside from acknowledging that it happens when learners have access to the second language (thankfully!) and that we can help move this natural process along by providing students with access to rich and varied communicative experiences that involve native speakers of the language students are acquiring (August & Shanahan, 2006a). Instead, we will focus primarily on what we know about promoting second-language word learning through classroom instruction that is deliberate and systematic.

The Role of First-Language Proficiency in English Vocabulary Learning

We mentioned earlier that the learning experiences ELLs have experienced through their first language influences their learning of a second language. ELLs' proficiency in their home language can vary a great deal depending on their age, exposure to their home language in out of school settings, and the amount of formal schooling in their home language. Some students will be able to use oral and written skills developed in their home language for use across a wide range of communicative situations, while others may possess only rudimentary knowledge that supports communication in quite restricted social situations, such as family routines. The degree of influence of the first language on second-language word learning is likely to be greater for learners with high levels of proficiency in their first language than it will be for learners with more limited proficiency in their first language. Over the past 30 years, researchers studying bilingual memory have produced a great deal of evidence suggesting that the lexicons of bilingual individuals are highly interconnected across their two languages. After years of controversy regarding the nature of bilingual memory organization, a consensus model has been developed that characterizes bilingual memory as consisting of separate lexical systems that map onto shared semantic representations (Chen & Leung, 1989; Kroll & Curley, 1988; Kroll & Sholl, 1992; Potter, So, Von Eckardt, & Feldman, 1984). Additionally, Kroll and her colleagues have provided a model that captures the manner in which lexical access develops from reliance on translation during early stages of second-language learning to direct access to conceptual representations at more advanced levels of proficiency.

There is also a growing body of literature on ELLs that suggests that the use of cognate identification strategies for inferring the meaning of unfamiliar words in text has a positive effect on vocabulary acquisition for ELLs (for example, Dressler

& Kamil, 2006). Cognates are words that have similar spellings, meaning, and sometimes similar pronunciations across two languages. Research suggests that ELLs can use their knowledge of word meanings and spellings in their first language to infer the meaning of unfamiliar English words. Hence, having a broad vocabulary in the first language may facilitate the learning of English words, provided of course that the first language is etymologically related to English (or has borrowed many words from English or other similar languages) and thus contains words that are similar to English words in spelling and meaning.

The Role of Home and School Factors

Socioeconomic status consistently predicts cognitive and academic outcomes among both native English speakers and ELLs (Biemiller & Slonim, 2001; Cobo-Lewis, Pearson, Eilers, & Umbel, 2002; Hart & Risley, 1995, 2003; Lara-Cinisomo et al., 2004; Neuman, 2008), with children from low-income homes performing less well than their more economically advantaged peers. Social class differences that give higher-income children better access to language-related literacy experiences include ownership of books and other reading materials (Raz & Bryant, 1990), availability of books through public libraries (Neuman, 2006), frequency of shared reading (Adams, 1990; Neuman, Caperelli, & Kee, 1998), and opportunities to engage in experiences that build conceptual knowledge needed for understanding text (Neuman, 2008). And it is an unfortunate fact that many ELLs come from lower-SES backgrounds. These children's less developed oral language proficiency is therefore not surprising.

However, with high-quality instruction, the effects of SES on ELLs can be mitigated (August & Shanahan, 2006a; D'Angiulli, Siegel, & Maggi, 2004). One method that has been successful in bolstering the vocabularies of less advantaged children is shared book reading, in which adults read aloud to children, periodically stopping to highlight and discuss individual words as well as other aspects of what they are reading. Shared book reading highlights language not often heard orally in classrooms and not encountered by young children or less skilled readers in the texts that they are able to read. It also offers adults meaningful contexts in which to discuss new words and provide students with opportunities to engage in conversational interactions that support vocabulary and comprehension (Coyne, Kame'enui, Simmons, & Harn, 2004; De Temple & Snow, 2003). Several studies on interactive shared reading will be reviewed in the section below on providing rich and varied language experiences.

Research on the relationship between language use in the home and ELLs' literacy development in their first or second language generally indicates that children's proficiency is related to family language preferences (Duursma et al., 2007). On average, children from families who prefer to use English at home tend to have larger English vocabularies, and children from families with a preference for Spanish at home tend to have higher Spanish vocabularies. However, as was the case with SES, the nature of the home and school practices influences this relationship (August & Shanahan, 2006a); high-quality first-language home experiences and high-quality second-language school experiences enhance literacy development. For example, a recent study showed no differences in Eng-

lish vocabulary acquisition for young low-SES Hmong- and Spanish-speaking children engaged in first-language home storybook reading and English school storybook reading compared with a similar group of students who participated in home and school storybook reading in English only (T. Roberts, 2008). Both groups learned a substantial number of new words. However, in order for increased home book reading to lead to increases in vocabulary and comprehension among older ELLs, it is important to carefully consider the match between the readers' ability and texts being read, as well as the goals for parental involvement (Kim & Guryan, 2010).

The Role of Instructional Context

The literature on the amount of vocabulary instruction in classrooms consists of a handful of studies. In one study of vocabulary instruction in 4th- through 8th-grade classrooms in Canada, Scott, Jamieson-Noel, and Asselin (2003) found that about 12% of the time in language arts classrooms was devoted to vocabulary instruction, but only 1.4% of the time was spent on vocabulary instruction in other academic subjects. They also found that most instruction involved mentioning meanings and assigning vocabulary to be learned, rather than providing more effective vocabulary instruction based on recent research in the area.

Foorman, Goldenberg, Carlson, Saunders, and Pollard-Durodola (2004) examined the biliteracy and bilingual development of approximately 850 mostly Hispanic children in kindergarten through 2nd grade who were enrolled in English immersion, dual-language, or transitional bilingual programs in two urban sites and one border site in Texas and in one urban site in California. As part of the study, the authors examined the amount of time teachers spent in various activities during the reading/language arts and language development blocks. Findings indicated that there were big differences between the states. Irrespective of language model, teachers in California allocated much more time to oral language development in each grade (ranging from 30% to 87%) than teachers in Texas (ranging from 7% to 27%), where teachers focused more on word work and working with text. Where oral language instruction did take place, it consisted of oral language/discussion, English language strategies, Spanish language, and vocabulary. A study by Mora-Harding (2009) of the instructional practices used by 36 teachers in nine South Florida public elementary schools serving high numbers of Spanish-speaking students indicated that teachers spent only 6% of the time devoted to the English Language Arts block on instructional strategies involving vocabulary.

Considering studies of the vocabulary instruction observed in actual classrooms, it appears that there remains a great deal of room for improvement, both in terms of time spent on instruction and in methods. The sorts of powerful vocabulary instruction documented in the research described in the next section of the chapter needs to become more common, vocabulary instruction needs to become more frequent in academic areas such as science and social studies (see, for example, Torres & Zeidler, 2002), and something needs to be done to help students with relatively small vocabularies catch up with their classmates. Given the focus on vocabulary acquisition in the Common Core State Standards, we are hopeful that these changes will begin to take place in the near future.

EFFECTIVE VOCABULARY INSTRUCTION

In this section, we first briefly characterize the research on effective vocabulary instruction for ELLs and then describe a multifaceted approach to vocabulary instruction that consists of the following components: providing rich and varied language experiences, teaching individual words, teaching word-learning strategies, and fostering word consciousness.

While we know a great deal about teaching vocabulary to native English-speaking students, and while the topic of vocabulary occupies an increasingly significant place in second-language theory and pedagogy, we know far less about teaching vocabulary to ELLs. In a review of peer-reviewed research conducted between 1980 and 2009, a limited number of experimental studies were located that focused on vocabulary outcomes for ELLs (Avila & Sadoski, 1996; Biemiller & Boote, 2006; Block, 2008; Bos, Allen, & Scanlon, 1989; Carlo et al., 2004; Collins, 2006; Elley, 1991; Filippini, 2007; Giambo & McKinney, 2004; Gunn, Smolkowski, Biglan, Black, & Blair, 2005; Neuman & Koskinen, 1992; Pérez, 1981; Perozzi, 1985; T. Roberts, 2008; Roberts & Neal, 2004; Townsend & Collins, 2009; Ulanoff & Pucci, 1999; Vaughn, Cirino, et al., 2006; Vaughn, Mathes, et al., 2006; Weitz, 2003; Zhang & Schumm, 2000). Many of the instructional approaches that were used in these studies built on approaches proposed for first-language learners (Graves, 2006; National Reading Panel, 2000; Stahl & Nagy, 2006). However, there were exceptions. For example, a study by Giambo and McKinney (2004) found improved vocabulary for ELL kindergartners with phonemic awareness instruction, perhaps because this program included the introduction of some new words; and at early stages of language acquisition, high-quality English interactions may be effective in promoting vocabulary development.

While most studies built on methods used with English-proficient students, many studies also restructured the instructional tasks to better meet the specific needs of ELLs (e.g., Avila & Sadoski, 1996; Bos, Allen, & Scanlon, 1989; Carlo et al., 2004; Filippini, 2007; Klinger & Vaughn, 2000; Perozzi, 1985; T. Roberts, 2008; Townsend & Collins, 2009; Ulanoff & Pucci, 1999; Vaughn, Cirino, et al., 2006; Vaughn, Mathes, et al., 2006) by using students' first language to help them learn vocabulary in English, providing additional scaffolding and reinforcement, and differentiating instruction, topics that are discussed further at the end of this chapter. In the remainder of this section, we list each of the four components of a comprehensive vocabulary program listed above and described in Chapter 1 and make a series of research-based generalizations, supporting each generalization with a representative study or several studies.

Throughout the activities that take place during comprehensive vocabulary instruction, students should be given ample opportunities and encouraged to communicate with English-proficient speakers for it is in this way that second languages are predominately acquired (Ellis, 2005).

Providing Rich and Varied Language Experiences

Language is primarily acquired incidentally, through listening, talking, and reading. Thus, to the extent possible, teachers need to immerse students in language-rich environments that provide them with many opportunities to acquire

language. Children can be exposed to rich language through having text read aloud to them, their own reading of texts, and media such as television.

Shared Book Reading. As noted in the Introduction, one method that has been used frequently and successfully to develop vocabulary in children is shared book reading in which adults read aloud to children, periodically stopping to highlight and discuss individual words as well as other aspects of what they are reading. Research with native English speakers indicates that this method has an impact on oral language outcomes, including vocabulary, grammar, and listening comprehension (Wasik & Bond, 2001; Zevenbergen & Whitehurst, 2003). The same appears to be the case for ELLs (Biemiller & Boote, 2006; Carlo et al., 2004; T. Roberts, 2008; Roberts & Neal, 2004; Silverman, 2007). In a study with young ELLs, Roberts and Neal (2004) compared small-group comprehension-oriented instruction, which consisted of shared book reading, vocabulary instruction, and comprehension activities, with emergent literacy instruction, which consisted of naming and writing letters and recognizing and generating rhymes. Findings indicated that children in the comprehension-oriented instruction outperformed children in the emergent literacy instruction in vocabulary and print concepts, while emergent literacy instruction resulted in better letter-naming and writing. Additionally, English oral proficiency was more correlated with the comprehension-related skills than with the decoding-related skills.

There is evidence that shared book reading can be an effective component for programs for older learners as well. In a study conducted by Carlo et al. (2004), a 15-week intervention was designed to build breadth and depth of vocabulary knowledge and reading comprehension in 254 bilingual and native English-speaking children from nine 5th-grade classrooms in four schools in California, Virginia, and Massachusetts. The intervention used immigration as a theme. Each weekly lesson began with shared reading of one of a variety of text genres, including newspaper articles, diaries, first-hand documentation of the immigrant experience, historical accounts, and fiction. In accordance with research indicating that words are best learned from rich semantic contexts, target words were selected from the brief, engaging reading passages. Twelve words that students at this level were likely to encounter repeatedly across texts in different domains were introduced each week. Although there were relatively few words introduced each week, activities helped children make semantic links to other words and concepts and thus to attain a deeper and richer understanding of each word's meaning, as well as to learn other words and concepts related to the target words. The lessons also taught students to infer meanings from context and to use roots, affixes, cognates, morphological relationships, and comprehension monitoring. All the strategy instruction used the reading passages as a springboard. Findings indicated that the ELLs did better in generating sentences that conveyed different meanings of multi-meaning words, in completing cloze passages, on tests of knowledge of word meanings, and on measures of word association and morphological knowledge. On a cloze test used to evaluate comprehension, students showed significant improvement, but the impact on comprehension was much lower than on vocabulary. These results indicate that this multifaceted training led to improved knowledge of the words studied.

In Chapter 3, we discuss several shared book readings in some detail. We want to note that this is an extremely important type of vocabulary instruction for chil-

dren who enter school with relatively small vocabularies and that a number of studies have shown that shared book reading can successfully teach word meanings. However, these results must be taken as encouraging rather than definitive. All of the studies have been relatively short, and few of them have taught anything like the number of words that less advantaged students need to learn in order to catch up to their more advantaged peers. Instruction that successfully bridges this gap will need to extend over several years and help students acquire many more words than have been acquired in studies thus far.

Independent Reading. One great advantage of independent reading is that it has the potential to expose learners to massive amounts of vocabulary in a variety of registers that may not be available through spoken language. This clearly affords rich learning opportunities. There is ample evidence to show that incidental learning of vocabulary through reading does occur for both native English-speaking students and ELLs.

For example, Nagy, Anderson, and Herman (1987) had English proficient students read four natural passages and found that the probability of students learning a word well enough to answer a multiple-choice question was .05. They went on to note that even though the probability of learning a word from context is small, given the volume of texts students can potentially read, they could learn a very large number of words from context. Based on their findings, they estimated that the average middle-grade child learns between 800 and 1,200 words from context annually. As a cautionary note, the authors also pointed out that their study revealed “no learning from context for words at the highest level of conceptual difficulty.”

Based on a meta-analysis of 20 studies that examined how native English-speaking students learn from context when not directly prompted to do so, Swanborn and de Glopper (1999) concluded that students can and do learn words incidentally, and that the probability of learning a word from one exposure in a naturally occurring context is .15. They also showed that students at higher grade levels and students with higher reading ability are better able to use context, and that texts containing fewer unknown words better facilitate learning from context.

Research conducted with ELLs indicates that silent sustained reading in which students select and regularly read books of their choice for a period of time each day leads to improvements in comprehension and oral language development (Elley, 1991; Tudor & Hafiz, 1989).

With regard to ELLs, an important question is what students learn about vocabulary through reading. Schmitt (2010, p. 30) argues that “incidental vocabulary learning from reading is more likely to push words to a partial rather than a full level of mastery, and that any recall learning is more prone to forgetting than recognition learning.” Additionally, incidental acquisition appears to include only content words—function words are generally not attended to. These limitations may explain why even very advanced second-language learners continue to manifest lexical errors in such areas as the use of prepositions and collocations. Finally, research with ELLs indicates that independent reading along with structured support for comprehension and language development facilitates ELLs’ language

development to a greater degree than reading that is not accompanied by such activities (Laufer, 2003).

A related issue concerns the number of exposures to a word or expression needed for incidental acquisition to occur. Summarizing the research, Schmitt (2010, p. 31) concluded that “8–10 reading exposures may give learners a reasonable chance of acquiring an initial receptive knowledge of words.” However, the number is likely to be highly variable depending on a variety of factors such as the language proficiency of the readers, the difficulty of the texts, and the conceptual difficulty of the words. It will also depend on the depth of processing involved when readers encounter words. “Exposure” may involve no more than fleeting attention to a word, or it may involve more deliberate attempts to process the form and meaning of the word.

All in all, these studies of learning from context show that context can produce learning of word meanings for both native English speakers and ELLs, that the probability of learning a word from a single occurrence is low, and that the probability of learning a word from context increases substantially with additional occurrences of the word. In giving students books to read on their own, it is important to ensure that the texts are ones they can read with accuracy, fluency, and good comprehension.

Television. Research with native English speakers indicates that educational television programs can be a source of language learning for these students (Linebarger, 2000; Van Evra, 1998). Several studies have also found that exposing ELLs to high-quality television can also be effective in developing their vocabulary. For example, Neuman and Koskinen (1992) found that middle-grade ELLs who watched captioned episodes of *3-2-1 Contact*, a high-quality science program, outperformed their classmates who just read from their science textbooks on measures of word recognition, understanding sentences, and word meaning. In addition, these students also performed better than their classmates who watched the television program without captions. It should also be noted that only ELLs with sufficient English proficiency benefited from the television programming, indicating the need to consider this variable when designing instruction.

In a similar study, Uchikoshi (2005) found that watching *Arthur*, a television program that emphasizes narrative storytelling, improved Spanish-speaking kindergarten ELLs’ oral language development more than watching *Between the Lions*, a television program emphasizing phonics. Taken together, these studies indicate that ELLs may benefit from increased exposure to rich language experiences using media such as television. It seems likely that similar material presented digitally on the Web and on the various pad devices now available will have similar results.

Teaching Individual Words

There is a large, robust, easily interpretable, and very consistent body of research on teaching individual words to native English-speaking students as well as a number of summaries of the research on vocabulary instruction. These include traditional reviews of research by Petty, Herold, and Stoll (1968), Graves

(1986), Mezynski (1983), Beck and McKeown (1991), Blachowicz and Fisher (2000), the National Reading Panel (2000), and Graves and Silverman (2010), and a meta-analysis by Stahl and Fairbanks (1986). As noted above, the research on ELLs is less robust but is generally consistent with the first-language research.

These studies lead to several generalizations. In organizing them, we proceed from considering effects that can be achieved by brief and relatively shallow instruction to effects that can be achieved from more lengthy and more robust instruction.

Some vocabulary instruction is better than no instruction (Petty, Herold, & Stoll, 1968). Although this is a commonsense finding, it is not a trivial one. It means that vocabulary instruction typically works. However, thin instruction—for example, giving students a set of words and asking them to look up the words in the dictionary, or giving them a set of words and their definitions—only serves to teach the basic meanings of the words. That is, simply giving students definitions of words will not result in their learning rich and full meanings. For example, recent findings from research conducted by August (2010) found that 2nd-grade Spanish-speaking ELLs learned vocabulary from exposure to the vocabulary with comprehensible definitions embedded in text, but did not learn vocabulary that they merely heard in the context of a shared book reading lesson. In this study, the vocabulary words taught in various conditions were matched for difficulty level, so findings are attributable to method rather than word types.

Instruction that incorporates both definitional information and contextual information is likely to be more effective than instruction incorporating only one sort of information (Mezynski, 1983; Stahl & Fairbanks, 1986). While simply having students work with definitions of words can improve their word knowledge, giving them both definitional information and contextual information, has repeatedly proven to be a stronger approach. In fact, except in situations where there are far too many unknown words in an upcoming selection to teach and you are forced to simply give students a glossary, using a procedure that gives students both definitional and contextual information is the thinnest approach we recommend.

Two recent studies with ELLs have shown the advantages of including both definitions and context. In one of them August (2010) found that 2nd-grade Spanish-speaking ELLs learned vocabulary from exposure to the vocabulary with comprehensible definitions embedded in the text during shared book reading, but learned the words less well than they did with instruction that included both definitions and context. Various activities were used to develop context for the targeted vocabulary, including introducing it as a lesson objective, using picture cards to clarify its meaning, reinforcing it through discussion during daily shared interactive reading, and reviewing it through the use of glossaries. In another study (August, Artzi, & Mazrum, 2010) in which 30 teachers in 18 schools implemented an intervention to develop the academic vocabulary of 509 3rd- and 4th-grade ELLs, findings indicated that instruction that included both definitions and context was much more effective than instruction in which students were only provided with

child-friendly definitions of the target academic vocabulary. Again, various activities were used to develop context for the targeted vocabulary, including introducing it as a lesson objective; using picture cards to clarify its meaning; reinforcing it through discussion during daily shared interactive reading; and reviewing it through the use of glossaries and concept maps.

Instruction that involves activating prior knowledge and comparing and contrasting word meanings is likely to be more powerful than simple combinations of contextual information and definitions (Baumann, Edwards, Bolland, Olejnik, & Kame'enui, 2003; Beck & McKeown, 1991). Such instruction has also been shown to improve comprehension of selections containing the words taught. The best known and most widely researched techniques falling in this category are semantic mapping (Heimlich & Pittelman, 1986) and semantic feature analysis (Pittelman, Heimlich, Berglund, & French, 1991). In a study with upper-elementary-grade, learning-disabled, bilingual students, Bos, Allen, and Scanlon (1989) found that semantic/feature analysis led to significantly higher vocabulary scores than more traditional vocabulary instruction, and that semantic mapping led to significantly higher comprehension scores than more traditional vocabulary instruction.

More lengthy and robust instruction that involves explicit teaching that includes both contextual and definitional information, multiple exposures to target words in varied contexts, and experiences that promote deep processing of words meanings is likely to be more powerful than less time-consuming and less robust instruction. Working with native English speakers, Beck and McKeown and their colleagues have developed, refined, and repeatedly tested several forms of rich vocabulary instruction that involve students in extensive and varied experiences with words (Beck & McKeown, 2004; Beck, Perfetti, & McKeown, 1982; McKeown, Beck, Omanson, & Perfetti, 1983; McKeown, Beck, Omanson, & Pople, 1985). Researchers who work with ELLs (August, Artzi, & Mazrum, 2010; August et al., 2009; Calderón et al., 2005; Carlo et al., 2004; Lawrence, Capotosto, Branum-Martin, White, & Snow, 2011; Mancilla-Martinez, 2010; Silverman, 2007; Snow, Lawrence, & White, 2009) have also developed, refined, and tested forms of rich vocabulary instruction that generally have consisted of:

- introducing words through the rich context of authentic children's literature or grade-appropriate expository text;
- clear, student-friendly definitions and explanations of target words;
- questions and prompts to help students think critically about the meaning of words;
- examples of how words are used in other contexts;
- opportunities for younger children to act out the meaning of words when applicable;
- visual aids illustrating the meaning of words in authentic contexts other than the book in which the word was introduced;
- encouragement for students to pronounce, spell, and write about words;

- opportunities for students to compare and contrast words;
- repetition and reinforcement of the target words;
- and activities that develop word consciousness such as listening for word meanings as text is read aloud.

A series of recent studies (Dalton, Proctor, Uccelli, Mo, & Snow, 2011; Proctor, Dalton, & Grisham, 2007; Proctor, Uccelli, Dalton, & Snow, 2009; Proctor, Dalton, et al., 2011) with Spanish-English bilinguals and native English-speaking 4th- and 5th-grade students in high-poverty schools has investigated the effects of rich vocabulary instruction delivered via the Internet. In one intervention (Proctor, Dalton, et al., 2011), students read eight multimedia texts and received embedded vocabulary instruction on 40 “power” words. The intervention, termed Improving Comprehension Online (ICON), embodied a variety of features, including

Spanish translations of all texts and directions; human read-alouds of each text in English and Spanish; English monolingual and Spanish-English bilingual pedagogical “coaches” who provided assistance with using the system and responding to prompts; a revisable electronic work-log that collected student responses; a multimedia glossary; and pictures illustrating the narrative and informational text content. (Proctor, Dalton et al., 2011, p. 524)

In comparison to a control group, there were significant intervention effects on a standardized measure of vocabulary and researcher-developed measures of vocabulary depth, but not on comprehension or on researcher-developed measures of vocabulary breadth.

Taken together, these studies clearly show that rich instruction in which students have multiple thoughtful encounters with words is very worthwhile, and that more encounters with words produce better learning than fewer encounters. However, it needs to be remembered that rich instruction comes at a huge cost. Instruction of this kind may require up to 30 minutes per word and involves activities outside of class as well as in class. Considering the number of words that ELLs need to learn to close the gap with their native English-speaking peers, we cannot provide rich instruction for all of the words we need to teach.

Teaching Word-Learning Strategies

The three word-learning strategies most frequently recommended for native English speakers are teaching students to use context to infer the meanings of unknown words, teaching students to use word parts to glean word meanings, and teaching students to use the dictionary. There is a fair amount of research on using context and word parts (Baumann, Font, Edwards, & Boland, 2005; Beck & McKeown, 1991; Fukkink & de Glopper, 1998; Graves, 1986; Kuhn & Stahl, 1998; Swanborn & de Glopper, 1999), but very little research on teaching students to use the dictionary. The second-language research literature is much more limited, but has investigated teaching students these strategies as well as helping students use cognate knowledge to uncover unknown word meanings of second-language

cognates (Shanahan & Beck, 2006; August & Shanahan, 2010a). As was the case for other vocabulary methods, the second-language studies generally taught strategies as part of a multifaceted vocabulary program, making it difficult to disentangle the effects of strategy instruction from that of other methods. Nevertheless, like all students, ELLs must master word-learning strategies—using context, using word parts, using the dictionary, and using first cognate knowledge when students' native language shares cognates with English. However, mastering word-learning strategies is particularly important for ELLs because they have so many words to learn (Carlo, August, & Snow, 2005).

Context Clues. As Sternberg (1987) suggests, "Most vocabulary is learned from context." In our judgment, and in the judgment of most other vocabulary researchers, no other explanation can account for the huge number of words students learn. Relevant studies on context clues include descriptive research on students' ability to use context to learn the meanings of unknown words, a topic that was discussed in the section above on rich and varied language experiences. The next question for educators is, "Can students be taught to better use context to learn the meanings of unknown words?" As Baumann, Edwards, Boland, Olejnik, and Kame'enui (2003) point out, not all instruction in using context clues has been successful. In fact, teaching students to use context clues is a challenging task. Still, there have been some notable successes.

Two studies by Baumann and his associates (Baumann et al., 2002; Baumann, Edwards, Boland, Olejnik, & Kame'enui, 2003) are the most ambitious to date. In both studies, native English-speaking students were taught contextual analysis and morphological analysis. In the 2002 study, results indicated that students in both the contextual group and the morphemic group were better able to glean the meanings of transfer words on an immediate test, but not on a delayed test. In the 2003 study, results indicated that students receiving the experimental treatment were more successful at inferring the meanings of novel affixed words and at inferring the meanings of morphologically and contextually decipherable words on a delayed test, but not on an immediate test.

Fukkink and de Glopper (1998) conducted a meta-analysis of 21 studies of instruction in context clues with native English speakers. In their analysis, they distinguished five types of instruction, including:

1. instruction centering on one or more context-type clues,
2. instruction in which students are asked to complete cloze tests,
3. instruction focused on developing a general strategy to infer word meaning from context with explicit reference to clue types,
4. instruction directed at helping students develop a general schema to conceptualize a definition, and
5. instruction involving practice only, without any specific guidance about how to infer the meanings of the words.

Findings indicated a significant positive effect (medium effect size of .43) for instruction deriving word meaning from context. Of the five types, clue instruction was superior to the other types.

In a recent study with ELLs by Carlo et al. (2004), inferring meaning from context was one of several strategies taught. During interactive reading, teachers read books aloud, discussed chunks of each page as they read, and used think-aloud procedures to model how context could be used to infer the meaning of unknown words. Students then practiced inferring meaning for those target vocabulary words whose meaning could be inferred from context. In an activity subsequent to the interactive reading, students worked in pairs using context clues in a new set of sentences to figure out which target words belonged in each sentence.

Unfortunately, it is clear that both native English speakers and ELLs experience considerable problems in inferring meaning from context. Frantzen (2003) identified a number of reasons why this is the case for ELLs and concluded that students should maintain a “healthy skepticism about the trustworthiness of contexts because they can suggest a variety of meaning” (p. 185). She argued that students need to make efforts to verify the inferences they make based on context, a position supported by her finding that students exhibited higher rates of retention from inferring when they also consulted a dictionary.

Given the limited amount of research with ELLs and the fact that context instruction for ELLs has generally been one component of a multifaceted vocabulary program, it is difficult to reach any definite conclusion about the usefulness of such instruction. It seems unlikely that such training will work for ELLs when they are confronted with texts that are too linguistically difficult for them, as they are unlikely to be able to process sufficient information from context to guess the meaning of a word. However, training in inferring meaning from context may be effective if the text level is controlled. Finally, any consideration of a role for strategy training needs to distinguish the role it plays in fostering comprehension of a text and the role it plays in vocabulary acquisition. It cannot be assumed that the guessing from context that assists comprehension will necessarily result in the acquisition of new words. If a word can be guessed easily, little attention to its form is needed with the result that it may not be retained. If the aim is to increase vocabulary through reading, vocabulary acquisition might be enhanced if ELLs are motivated to attend to words they don’t know and use all the resources at hand to determine a word’s meaning, including context as well as the other strategies listed below.

Word Parts. Considerations about teaching word parts can be conveniently grouped according to three questions: What elements might we consider teaching? What elements do students know? And what are the effects of instruction in these elements? Here we consider each of these in turn.

The elements that we might consider teaching students are the same for both native English speakers and ELLs and include inflections, derivational suffixes, prefixes, and Latin and Greek roots. Inflections are suffixes that modify a base word by changing grammatical features such as tense, number, and aspect. Examples include the plural marker *-s* in *houses* and the past tense marker *-ed* in *wanted*. Inflections do not change the part of speech or the basic meaning of the word. Derivational suffixes are suffixes that modify root words, changing the part of speech and to some extent meaning. Examples include *-less* in *worthless* and *-able*

in *adorable*. Prefixes are elements that are attached to the beginnings of words and change the word's meaning. Examples include *un-* in *unhappy* and *re-* in *replay*. Latin and Greek roots are non-English words that are sometimes used as parts of English words. Examples include *tract* meaning "pull," as in *attract* and *extract*, and *voc* meaning "call," as in *advocate* and *equivocate*.

Children learning in their first language learn inflectional suffixes well before entering school and thus do not need to be taught them. Conversely, 1st-grade children show little competence in recognizing derivational suffixes, and although competence increases with age, even some high school students show little knowledge of some of them. There is some evidence that derivational suffixes can be taught, and thus these suffixes are a reasonable target of instruction as students progress through school. Many upper-elementary students do not know even the most common prefixes, and there is good evidence that prefixes can and should be taught in the upper-elementary grades (White, Power, & White, 1989). The situation with Latin and Greek roots is more problematic for the following reasons: There are hundreds of roots that might be taught; most roots are not used in a great many English words; the relationship between the original Greek or Latin meaning of a root and its meaning in an English word might be vague; and roots are variously spelled, making them difficult for students to notice in words. Nevertheless, the CCSS recommends that students begin using common, grade-appropriate Latin and Greek roots as clues to word meanings in the 4th grade.

ELLs will not have learned as many inflectional suffixes as native English speakers prior to school entry. A recent study with 4th- and 5th-grade Spanish-speaking ELLs (Kieffer & Lesaux, 2007) examined the role of derivational suffixes in students' reading comprehension and found that between 4th and 5th grade, awareness of these derivational suffixes became a more significant predictor of reading comprehension.

Although not all studies conducted with English-proficient students focusing on the use of word parts to unlock the meanings of unknown words have produced positive results, in general the results have been good. A recent meta-analysis of three types of morphological awareness interventions in English—those that focused on awareness of inflections, derivational suffixes, and compound words for school-age children synthesized data from 17 published and unpublished studies (Goodwin & Ahn, 2010) and found an overall effect of .44 on literacy outcomes, with significant effects for morphological awareness, vocabulary, phonological awareness, phonological recoding, and reading comprehension. Eleven studies had vocabulary outcomes with a large and significant effect size of 1.04. The Goodwin and Ahn review identified 14 teaching strategies. The most common was teaching students the meaning of prefixes, suffixes, and roots as well as to identify these units within morphologically complex words. Other interventions taught children to build morphologically complex words from cards containing prefixes, roots, and suffixes (Berninger et al., 2003); taught morphological patterns and rules (Roberts, F. A., 2008); helped students identify the words within compound words (Lovett et al., 2000); taught the grammatical role of morphemes (Nunes et al., 2006); helped students break words into morphemes (Harris, 2007); and taught about word origin (Henry, Calfee, & Avelar-LaSalle, 1989).

In one recent study (Lesaux, Kieffer, Faller, & Kelley, 2010), a text-based academic language program was implemented in classrooms with high numbers of ELLs and former ELLs. Students were exposed to words in text, were introduced to additional meanings of the words, engaged in morphological analysis of different forms of the words, and used the words in their own writing. Findings indicated that students learned the meanings of the words they were taught and improved in morphological awareness. The principles that guided Lesaux and her colleagues' morphology instruction were: teach morphology in the context of rich, explicit vocabulary instruction; teach students to use morphology as a cognitive strategy with explicit steps; teach the underlying morphological knowledge both explicitly and in context; and for Spanish-speaking students, teach morphology in relation to cognate instruction.

As with previous methods described in this chapter, it is impossible to determine which aspects of morphological instruction are most effective in improving literacy outcomes because too many studies involved morphological strategies from multiple categories (Goodwin & Ahn, 2010).

The Dictionary. Relevant studies here include investigations of what students understand from typical dictionary entries and investigations of how to improve dictionary entries. For native English speakers, dictionary definitions alone are not sufficient to help students understand word meaning, because the definitions are deliberately decontextualized. While there are no studies with ELLs, we posit that this is even more true for ELLs because of their limited depth and breadth of vocabulary knowledge.

In one study illustrating the difficulty native English speakers have with dictionary definitions, Miller and Gildea (1987) investigated the ability of 5th- and 6th-grade students to generate appropriate sentences after reading traditional dictionary definitions. Results indicated that over 60% of the sentences students constructed were judged to be odd, often because students appeared to select only a fragment of the definition on which to base their sentence. For example, based on the dictionary definition of *eroding* including the phrase "eating out," one student generated the sentence, "My family erodes a lot." In another study with 4th- and 6th-grade English-speaking students, Scott and Nagy (1997) investigated the effects of modifying traditional definitions by using everyday English that clarified the subject and object of the verb being defined, rather than the conventional format, and by including an illustrative example. Results indicated that neither type of modification significantly affected students' performance, and that even the performance of high-ability 6th-grade students was far from perfect.

A study by McKeown (1993) with 5th-grade native English speakers was more successful. She examined the effects of traditional definitions and definitions revised in a very systematic and principled way, creating what she called "student-friendly" definitions. For example, the traditional definition for *conspicuous* was "easily seen," while the revised definition was, "describes something you notice right away because it stands out." Students showed improvement in a task that required them to write sentences after reading traditional and revised definitions, and on a task requiring them to answer questions about the meaning of words.

In summary, using the dictionary to define words is possible but difficult, even for native English speakers, and some traditional dictionary entries can be improved significantly. Given these results, it appears that ensuring all students, including ELLs, use newer dictionaries that have been revised to ensure second-language definitions are student friendly would be important. For ELLs, dictionaries that provide entries in students' first language, student-friendly first-language definitions, student-friendly English definitions, and examples of the target words in sentences that further clarified target word meaning might be helpful. Additionally, teaching ELLs to more effectively use dictionaries to learn word meanings might be useful. See Chapter 5 on word learning strategies for information about dictionary use.

Using Cognate Knowledge. Recognizing and using cognates—words that are similar in the student's native language and in English—has been shown to be an important strategy for ELLs whose first language shares cognates with English (Kamil & Hiebert, 2005). ELLs' ability to use cognate knowledge is mediated by developmental factors, the typological or perceived distance between the first and second languages, and students' knowledge of the word's meaning in their first language (Dressler & Kamil, 2006).

Teaching children to take advantage of their cognate knowledge can be a powerful tool for Spanish-speaking ELLs, because many English words that are cognates with Spanish are high-frequency Spanish words, but low-frequency English words. Thus, students are likely to know both the concept and the label in Spanish but lack the English label. Moreover, many cognates (*infirm/enfermo*; *profound/profundo*; and *fortunate/afortunado*) are important to know, are characteristic of mature language users, and appear frequently across a variety of domains.

Several studies have examined the effect of teaching students to use their first-language knowledge in inferring the meaning of unknown second-language words that are cognates (August, 2009; August, Branum-Martin, Cardenas-Hagan, & Francis, 2009; Carlo et al., 2004). For example, in the Vocabulary Improvement Project (Carlo et al., 2004), English-proficient and Spanish-speaking ELLs worked together to figure out which words in their reading passages were cognates and to jointly define them. In a study designed to assess the extent to which students in the Vocabulary Improvement Project used their knowledge of cognates in inferring word meaning, Dressler, Carlo, Snow, August, and White (2011) found that cognate performance depended to some extent on the characteristics of cognate pairs, including the degree of phonological transparency between the cognates and the degree of orthographic overlap shared by the cognate pair. Additionally, their findings indicate that even students who are not literate, but are orally proficient in Spanish, might benefit from instruction in cognate awareness.

It is important to acknowledge that while in most cases cognate knowledge is helpful, in some cases it may result in ELLs inferring the wrong meaning to unknown words, as when words are false cognates (look and sound alike in both languages but do not have any of the same meanings) or when the words share some meanings in common but not the meaning required in a particular context (García, 1991).

Fostering Word Consciousness

Scott and Nagy (2004) suggest that word consciousness can be thought of as the metacognitive or metalinguistic knowledge that a learner brings to the task of learning, as well as an interest in and awareness of words. Word consciousness includes several types of metalinguistic awareness such as morphological awareness, syntactic awareness, and semantic awareness, which help students acquire specific words. It also entails a facility for learning words in general. An awareness of words involves “an appreciation of the power of words, an understanding of why certain words are used instead of others, a sense of the words that could be used in place of those selected by a writer or speaker,” and cognizance of first encounters with words (Graves & Watts-Taffe, 2008).

Word consciousness is a concept that has only relatively recently been articulated. As a consequence, there is little research that directly demonstrates the effectiveness of word consciousness. Nevertheless, there are various sorts of evidence that strongly suggest its importance. For one thing, vocabulary theorists and researchers (Anderson & Nagy, 1992; Baumann & Kame’enui, 2004; Beck, McKeown, & Kucan, 2002, 2008; Blachowicz & Fisher, 2004; Graves, 2006; Scott & Nagy, 2004; Stahl & Nagy, 2006) strongly support the inclusion of word consciousness as an integral and necessary part of an effective vocabulary program.

Another sort of evidence is the importance of motivation to all learning and for all students (Malloy, Marinak, & Gambrell, 2010), from kindergartners (Pressley et al., 2003b) to high school seniors (National Research Council, 2004). Students simply do not learn much unless they are motivated to do so, and if they are going to accomplish the huge task of learning something like 50,000 words by the time they graduate from high school, they absolutely must be motivated to do so.

Still another sort of evidence comes from vocabulary studies. In a series of relatively informal studies undertaken over a 7-year term, Scott and her colleagues (Scott, Butler, & Asselin, 1996; Scott & Nagy, 2004; Scott, Skobel, & Wells, 2008) investigated the effects of a project called *The Gift of Words*, in which they provided students with an enriched focus on words in their reading, writing, and discussion. Results supported the effectiveness of this program on students’ use of interesting words in their writing and on students’ awareness and interest in words more generally. In other studies, word consciousness was an important part of multifaceted vocabulary programs designed to improve native English speakers’ reading vocabulary and reading comprehension (Beck, McKeown, & Omanson, 1987), native English speakers’ use of vocabulary in their writing (Duin & Graves, 1987), and ELLs’ general proficiency in vocabulary (Carlo et al., 2004; Lesaux et al., 2010). All of these programs produced positive results.

In summary, while word consciousness is a recently articulated concept and does not have an extensive research base, experts in the field, the importance of motivation to learning, and several research studies support including it as a component of the vocabulary curriculum.

Important Considerations for ELLs

For a number of years, vocabulary received relatively little attention in second-language instruction, with grammar being the major focus (Folse, 2004; Long & Richards, 2001). Recently, however, that situation has changed; while experimental research focused on developing vocabulary in ELLs is limited, vocabulary occupies an increasingly significant place in second-language theory and pedagogy (August & Shanahan, 2006a). As we have already noted, much of the instruction appropriate for teaching vocabulary to students who are native speakers of English suggests an appropriate place to start in teaching vocabulary to ELLs (Graves, 2006). However, as we have also noted, there are some special factors to consider.

Bootstrapping on first-language knowledge and skills. The first special factor is that many ELLs have a well-developed first language that can be used to support learning in the second language. There are instructional routines that, although focused on the teaching of English vocabulary, make effective use of the students' first language. Examples of these include previewing and/or reviewing storybook reading in students' first language (T. Roberts, 2008; Roberts & Neal, 2004; Ulanoff & Pucci, 1999), teaching vocabulary in students' first language prior to teaching it in their second (Perozzi, 1985), conducting instructional conversations that permit some interpretation to take place in the home language (August, 2009), using bilingual glossaries for the targeted vocabulary (August et al., 2009; Carlo et al., 2004), and providing instruction in the transfer of cognate knowledge from a first language to a second (August et al., 2009; Carlo et al., 2004).

Foundational English vocabulary. Another important factor to consider is that ELLs need to develop a basic oral and reading vocabulary of the most frequent English words. Many of these words are words that native English speakers will have in their vocabulary when they enter school. Several second-language scholars suggest a list of about 2,000 words (Cummins, 2003; Nation, 2001; Schmitt, 2000), and the most commonly recommended list is *The General Service List* (West, 1936/1953). More recently, Sales and Graves (2009c) have suggested a somewhat larger and much more recent list, *The First 4,000 Words*, based on the work of Hiebert (2005) and Zeno, Ivens, Millard, and Duvvuri's (1995) *Word Frequency Guide*. As Folse (2004) has noted and as we will discuss in Chapter 4, there are several other lists that can also be useful, and using a list does not necessarily mean simply teaching the words from the beginning of the list to the end. Teachers can use lists, for example, as guides to what words to teach and what words probably do not need to be taught.

Of course, students need a vocabulary much larger than 2,000–4,000 words. To succeed in school and once they leave school, students need a large vocabulary that includes academic English (Cummins, 2003; Snow, Lawrence, & White, 2009), a vocabulary of words that are used in school texts and other readings for

students and adults. Although native English speakers also need a large vocabulary of academic English, it is likely to be easier for native speakers to acquire these words because they already have foundational English vocabulary that helps them learn from context.

It is now becoming clear that vocabulary knowledge also involves knowledge of multiword units. Simpson-Vlach and Ellis (2010) have set out a pedagogically useful list of formulaic sequences for academic speech and writing for adults. First, they identified frequently occurring 3-, 4-, and 5-word units in a representative body of oral and written academic English. They then constructed a measure of teaching worth based partly on frequency, partly on teachers' evaluations of whether the units constituted formulaic expressions and were worth teaching, and partly on a measure that indicates the extent to which the items appear in a coherent sequence. The result was a core list of academic sequences, as well as separate lists for oral and written sequences sorted into functional groupings, including referential expressions (for example, *based on, such as the*), stance expressions (for example, *the importance of, tell me what*), and discourse-organizing expressions (for example, *what happens is, in order to*). At present, we know of no intervention studies that explore effective methods to teach ELLs in elementary and secondary schools high-frequency multiword units. However, researchers at the Center for Applied Linguistics have developed a list of educationally relevant multiword units that appear frequently in text in grades K–12, which may form the basis for intervention studies (August, 2011).

Repetition and reinforcement. Reinforcement of learned material that provides students with repeated exposures to words, concepts, and skills has been long known to be effective for strengthening learning. Reinforcement may be particularly important for ELLs because many ELLs will have less exposure to English words outside the school environment than their native English-speaking peers. In studies on vocabulary, reinforcement often takes the form of revisiting material in ways that differ from the initial encounter. For example, in a study with young ELLs, Roberts and Neal (2004) reinforced the meanings of new vocabulary through the use of real-life objects, drama, art activities, and fostering understanding of the important events in a story through a picture-sequencing activity. Carlo et al. (2004) reinforced word knowledge through several post-reading activities with target vocabulary, including cloze tasks that drew students' attention to the multiple meanings of some words, word association tasks, synonym/antonym tasks, and semantic feature analysis. They also recycled words learned in earlier lessons in later ones. Part of the success of these instructional efforts was surely the amount of guided and varied repetition students received.

Scaffolding. Scaffolding refers to support that teachers provide to students to allow them to successfully carry out tasks that are beyond their independent abilities. With the teacher's guidance and support, students are able to increase or extend their academic skills. For students learning content in a new language, scaffolding is particularly important (August & Shanahan, 2008; Graves & Fitzgerald, 2009). Across the experimental studies reviewed here, various scaffolding methods were

used. Examples included using guides and materials that explicitly address concepts in basal readers that might be confusing for second-language learners (Pérez, 1981); creating opportunities for children to act out meanings of words and using visual aids that illustrate the meanings of words in authentic contexts other than the book in which the word is introduced (August et al., 2009; Silverman, 2007); aligning independent reading materials to children's level of reading and second-language proficiency with support prior to and during reading, and creating opportunities for teacher-student interaction around books to make them comprehensible during reading (August et al., 2009); and providing a model of a process, task, or assignment before requiring students to undertake it, previewing material prior to questioning students, and using graphic organizers (August, 2010).

Differentiating instruction. It is important to keep in mind that students' development of literacy is influenced by a range of individual factors, including age of arrival in a new country, educational history, SES, and cognitive capacity (August & Shanahan, 2006a). This point is highlighted by the differential effects of instruction on students of different ages (such as the differences in word learning described in this book), with differing degrees of English proficiency (Neuman & Koskinen, 1992), and varied ability to read (Block, 2008).

The studies examined here provide clues as to how to successfully differentiate instruction for individual ELLs:

- by building on first-language proficiency and literacy (Carlo et al., 2004),
- by considering levels of English proficiency as well as levels of first-language literacy (Saunders, 1999),
- by accommodating the needs of older learners who have recently arrived in the United States (August et al., 2009), and
- by taking into account individual differences in learning ability and rates (Gunn et al., 2005).

However, given the diverse needs of children, there is very little experimental research that provides specific guidance about how to accommodate the diverse needs of students within a single classroom or school.

A FINAL WORD

Given the difficulty of deciding just what will be counted as a word and what level of word knowledge should count as knowing a word, it is difficult to say exactly how many words students know or need to learn. However, there is good evidence that the texts and other reading materials students could encounter over the 13 years of schooling contain over 180,000 word families, that average students learn to read something like 3,000–4,000 words each year, and that average students acquire reading vocabularies in the neighborhood of 50,000 words by the time they graduate from high school. To accomplish this very significant task, students need all the help that we can give them. There is also good evidence that

ELLs need even more of our assistance if they are to catch up with their native English-speaking peers in knowledge of English vocabulary.

Although the vocabulary instruction provided in schools has typically not been strong, either for native English speakers or for ELLs, it is improving. Providing ELLs with the assistance they need in building rich and powerful vocabularies means several things. First, it means assuring that ELLs acquire a basic vocabulary of the more frequent words, a vocabulary of about 4,000 words. While this is only a fraction of the words they must eventually learn, the 4,000 or so more frequent words account for approximately 75% of the words students will meet, even in adult texts, and an even larger percentage of the words students will encounter in texts for the lower grades and in oral English. Second, it means teaching a number of words beyond these 4,000 very frequent words. For the most part, these will be medium-frequency words or words for understanding what ELLs are reading, listening to, or otherwise studying in class. Third, it means teaching ELLs word-learning strategies—using word parts, context, cognates, and the dictionary to glean word meanings. Powerful instruction is needed to teach these strategies. Fourth, it means assisting ELLs in becoming word-conscious, kindling their interest and enjoyment in words and furthering their metalinguistic awareness of words so that they become eager and knowledgeable word learners. Fifth, it means organizing classrooms and schools in ways that give ELLs opportunities to interact with native speakers of English (Ellis & Wells, 1980; Johnson & Swain, 1998). Finally, it is important to remember that the assistance we provide for ELLs can build on effective instructional methods used for native English-speaking students but that many ELLs will need to be taught more words, will need to spend more time on vocabulary, and will need instruction that builds on their strengths and takes into consideration the fact that they are learning in a second language.