



The Reading Matrix © 2012
Volume 12, Number 2, September 2012

Research-Based Vocabulary Instruction for English Language Learners

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ABSTRACT

A major reading-achievement gap exists between English language learners and English-only students. In order for ELLs to experience school success, they must achieve English language proficiency. This article presents why vocabulary acquisition plays the most vital role in ELLs' learning of the English language. Factors include the severity and frequency of vocabulary errors, the disparity of vocabulary knowledge between ELLs and monolingual English speakers, and the high correlation between vocabulary and comprehension. This study is based on a four-component vocabulary program proposed by experts in the field and a synthesis of research findings, practical strategies, and tools that enhance ELLs' vocabulary development. Other critical considerations for an effective vocabulary program are also discussed.

INTRODUCTION

National data shows a huge reading-achievement gap between English language learners (ELLs) and English-only students (EOs). For example, results of the 2009 National Assessment of Educational Progress indicated that the percentage of fourth-grade ELLs who tested proficient in reading was 30% below the percentage of proficient EOs (U.S. Department of Education, 2009). In order for ELLs to experience school success, they must achieve English language proficiency. Research shows that vocabulary acquisition plays the most crucial role in ELLs' learning of the English language as well as in school achievement (August, Carlo, Dressler, & Snow, 2005). There is, therefore, a pressing need for teachers to be able to translate into practice research related to ELLs' vocabulary acquisition. This article presents the reasons why vocabulary learning is immensely critical to ELLs' English language acquisition.

Severity and Frequency of Vocabulary Errors

One reason for accelerating ELLs' vocabulary acquisition is because, among second language learning errors, vocabulary errors happen most often, occurring as frequently as three times more than grammatical errors (Gass & Selinker, 2008). In addition to being the most frequent, vocabulary errors are the most severe (Politzer, 1978). They often result in semantic interference, leading to miscommunication. They are even more severe than grammatical errors,

which are more likely to lead only to structural errors without impacting meaning (Gass & Selinker, 2008). For example, consider the following sentence: “Can you with me come?” Although this sentence is grammatically incorrect, the listener is likely to understand its intended meaning. Now consider this sentence: “I don’t like the silence.” The speaker has erroneously substituted “silence” for “sirens,” leading the listener to think the exact opposite of the intended meaning.

Disparity in Breadth and Depth of Vocabulary Knowledge

Another reason for the urgent need to enhance ELLs’ vocabulary acquisition is the significant discrepancy between EOs and ELLs in English language vocabulary size (i.e., *breadth* of vocabulary knowledge). Research shows that the vocabulary size of ELLs lags greatly behind that of EOs. Estimates of the receptive vocabulary size of EOs before receiving formal school instruction vary from 5,000 to 7,000 or even 10,000 words (Biemiller & Slonim, 2001; Blachowicz, Fisher, Ogle, & Watts-Taffe, 2006; Graves, 2007). Estimating the vocabulary size of ELLs poses a great challenge because of the higher number of individual variables. Graves suggested that an estimate of 3,000 to 6,000 English words is reasonable for ELLs’ vocabulary size. However, some ELLs, especially new immigrants, may have no knowledge of English words at all upon entering kindergarten or even higher grade levels (Carlo et al., 2008; Graves, 2007); EOs may know as many as 6,000 more words than ELLs at school entry (Carlo et al.).

Unfortunately, this disparity in breadth of vocabulary knowledge increases with time (Blachowicz et al., 2006; Kieffer & Lesaux, 2007). The average minimum number of root-word meanings acquired by average primary school children in a year is 840, whereas 25% of primary children (which includes ELLs) gain an average of only 570 root-word meanings (Biemiller & Boote, 2006). It is clear that such differences over the years contribute to a widening vocabulary gap between ELLs and EOs. According to Laufer and Yano (2001), high-school ELL graduates and ELL college students know less than 25% of the vocabulary of their native-speaking counterparts.

Of great concern also is the fact that ELLs lag behind EOs in their *depth* of vocabulary knowledge (Gass & Selinker, 2008). Depth of vocabulary knowledge refers to knowledge about a word’s (a) literal meaning, (b) connotations, (c) syntactical forms, (d) morphological forms, (e) semantic relationships with other words (such as synonyms and antonyms), and (f) *collocations*, or words that appear alongside it (Gass & Selinker; Kieffer & Lesaux, 2007). Studies show that, compared to first language speakers, second language learners ascribe meanings that are more limited and less diverse to target-language words (August et al., 2005; Verhallen & Schoonen, 1993).

Impact of Vocabulary Knowledge on Reading and Oral Comprehension

This increasing gap in vocabulary breadth and depth among ELLs generates great concern because of how vocabulary is correlated with reading comprehension. In their study of non-native English speakers, Laufer and Ravenhorst-Kalovski (2010) demonstrated that readers must know 98% of the vocabulary in the text in order to achieve independent reading comprehension. In addition, in a longitudinal study, Cunningham and Stanovich (1997) discovered that the vocabulary of first graders is a significant predictor of reading comprehension ten years later. The correlation between vocabulary and reading comprehension

is evident among second language learners as well (Garcia, 1991; Nagy, 1977; Proctor, Carlo, August, & Snow, 2005; Verhoeven, 1990). In fact, English language vocabulary is one of the strongest predictors of the reading performance disparity between ELLs and EOs (Blachowicz et al., 2006; Garcia, 1991; Verhoeven, 1990). Not surprisingly, studies have also demonstrated that vocabulary instruction enhances reading comprehension (Beck, Perfetti, & McKeown, 1982; McKeown, Beck, Omanson, & Perfetti, 1983; National Reading Panel, 2000).

Vocabulary knowledge affects not only reading comprehension, but also *oral* comprehension. Vocabulary knowledge enables listeners to identify syntactic relationships, a requirement for sentence comprehension. Listeners must first be able to isolate individual words from the speech stream of speakers, using the word information to interpret and understand the message. In other words, oral comprehension relies on vocabulary knowledge (Gass & Selinker, 2008).

RESEARCH-BASED VOCABULARY INSTRUCTION FOR ELLS

The critical role of vocabulary in ELLs' English language acquisition, as well as ELLs' tremendous vocabulary lag, calls for the need to provide for them effective vocabulary instruction. However, using isolated instructional strategies is inadequate to promote satisfactory vocabulary growth in ELLs. Instead, experts in the field have recommended a complete vocabulary program featuring four important components: (a) rich language and word experiences to enhance incidental word learning, (b) direct word teaching, (c) instruction of word-learning strategies, and (d) word-consciousness cultivation (Graves, 2007; Stahl & Nagy, 2006). Below is a discussion of these four components and the corresponding research-based vocabulary instructional strategies and tools.

Rich Language and Word Experiences

The first component of an effective vocabulary program is an environment where students are exposed to rich language and rich word experiences. Students' vocabulary growth is cultivated when they are immersed in an abundance of reading materials of diverse genres and topics at appropriate reading levels. Furthermore, teacher read-alouds that are accompanied with explanations and discussions of vocabulary, reading, and writing activities that encourage the use of new words, and teacher modeling of new and high-level vocabulary usage also enhance vocabulary growth (Blachowicz et al., 2006; Graves, 2007).

Read to Children

Children are exposed to rare and diverse words through stories more than through speech (Cunningham & Stanovich, 1998). Studies have shown that read-alouds contribute to the vocabulary growth of older readers as well as non-readers as young as kindergartners (Graves, 2007; Nagy, Herman, & Anderson, 1985). Children are also able to employ such newly learned words in their retells (Blachowicz et al., 2006). However, not all children's stories will increase a student's vocabulary. Instead, it is important to read out loud trade books that feature more sophisticated vocabulary and text structures than what is often found in stories at a child's independent reading level.

Use Repeated Read-Alouds and Word Explanations

To increase the effectiveness of read-alouds, teachers should also provide repeated readings of the same text along with word explanations. In a review of 13 studies, Biemiller and Boote's (2006) overall finding was that repeated story readings, along with explanations of word meanings, increased vocabulary growth. They assert that, in general, students aged three to ten acquire the meanings of 26% of words explained. In their own studies among kindergarten to grade-two students (approximately half of which were ELLs), Biemiller and Boote demonstrated a word-meaning gain of 12% through repeated readings, and an additional gain of 10% when explanations were provided, resulting in a total gain of 22% in the latter case. Additionally, a post-test given four weeks later showed not only retention of gains, but also further gains.

Encourage Wide Reading

Another way to increase ELLs' experience of rich language is to promote *wide* or incidental reading. Although the NRP (2000) concluded that there is a lack of evidence that wide reading enhances vocabulary learning, Cunningham (as cited in Blachowicz et al., 2006) refuted it, arguing that out-of-school reading contributes greatly to vocabulary learning. In fact, reading volume has been demonstrated to be a strong predictor of vocabulary differences (Cunningham & Stanovich, 1998). Other studies such as Nagy, Anderson, and Herman's (1987) also showed gain in vocabulary growth through incidental reading.

ELLs' relatively smaller vocabulary size and limited knowledge of English grammar lead to greater difficulty in inferring word meanings using contextual and linguistic clues (Carlo et al., 2008; Nagy, 1977). Incorporating the following two strategies will enhance the efficacy of incidental reading: (1) integrate incidental reading with direct teaching of words and multiple exposures to those words (Carlo et al.) and (2) provide texts that are moderately challenging conceptually. Nagy et al. (1987) demonstrated that the level of conceptual difficulty of unknown words is the most critical text feature that affects students' word-learning ability. It is even more critical than the length of unknown vocabulary words or the amount of text support provided through contextual clues. Vocabulary gains are hindered if the text presents concepts that exceed students' conceptual level (Nagy et al., 1987). However, texts that are too easy for students will not enhance their vocabulary either (Carlisle & Katz, 2005).

Promote Small-Group Discussion

Other than read-alouds and wide reading, small-group discussion can also contribute to a rich word environment. For example, in a study of first graders who spoke Hawaiian Creole, Tharp (1982) found that, compared to peers in control classrooms, significantly higher gains on the vocabulary subtest of the Gates-MacGinitie Reading Tests were achieved by students in experimental classrooms where reading lessons were carried out solely through small-group discussion. Among the characteristics identified as salient to the effectiveness of these experimental classrooms were (a) informal instructional dialogue, (b) immediate and frequent positive praise and feedback, (c) active student participation, (d) no negative consequences for incorrect answers, (e) a greater percentage of time dedicated to reading comprehension than to decoding, (f) more frequent progress monitoring using criterion-referenced assessment, (g) instruction based on individual diagnosis and prescription, and (h) effective quality control

through measuring and rating program features, as well as using the features to evaluate program implementation (August & Snow, 2007; Tharp, 1982).

Direct Word Teaching

The second important component of a comprehensive vocabulary program is direct word teaching. Below are important principles that have emerged from research on direct vocabulary instruction.

Teach Vocabulary in Context

Research indicates that contextual word teaching is more effective than non-contextual word teaching (Biemiller & Boote, 2006). According to Carey (1978), children ages two to six learn by mapping—or rapidly associating—new vocabulary to initial meanings linked to contexts of concrete tasks. Carey showed that children use syntactic information (i.e., sentence context or part of speech) in the mapping of word meaning. Additionally, children gain a fuller understanding of word meanings as further word exposures occur in other contexts. The mapping of new words has also been found to take place beyond concrete task contexts for children under age five. In the context of an interesting read-aloud, children can quickly map new words encountered either solely through listening to the narrative or hearing a brief explanation for those words (Biemiller & Boote).

Use Sentences that Construct a Story

Using target words in sentences that construct a narrative is another effective direct-word instructional strategy. In a three-week study among ELLs, Vaughn-Shavuo (as cited in August & Snow, 2007) demonstrated that students gained, through incorporating words in sentences that construct a story, more vocabulary words than through incorporating words in sentences that do *not* construct a story. In particular, 21 words were acquired by the experimental group, compared to nine words in the control group.

Teach Basic Words

Basic words, or *tier-1* words (Beck, McKeown, & Kucan, 2002), are common words that EOs already know. However, ELLs have to be taught these basic words. (A sample list of basic words can be found at the website, *English Vocabulary Word Lists*, www.manythings.org/vocabulary.) How a basic word is taught depends on its characteristics demonstrated in at least three dimensions: (a) concreteness, or whether it is tangible or easily shown, (b) semantic depth, or whether it is *polysemous* (has multiple meanings), (c) cognate status, or whether it shares similar spelling and meaning with an L1 word (Calderon et al., as cited in August et al., 2005). For example, concrete words can be taught by simply showing a picture (e.g., *squirrel*) or demonstrating an action (e.g., *walk*). More abstract words (e.g., *aunt*) require an explanation or translation. Sometimes a combination of instructional strategies is used for certain kinds of words, such as easily demonstrated words that have multiple meanings. For example, *ring* can be taught by showing a picture and offering an explanation for its various meanings (August et al., 2005). Common expressions and idioms (e.g., *take your time*) require teacher explanation.

Cognates can be instructed by saying the English word and then providing or asking for the native-language word (August et al.). The website http://latinamericallinks.com/spanish_cognates_letter_a.htm provides a cognate dictionary for easy translation. Table 1 below summarizes how vocabulary instruction for Tier-1 words varies with word characteristics.

Table 1. Strategies for Teaching Tier-1 Words to ELLs

<i>Example</i>	Word Characteristics			<i>Instructional Approach</i>
	<i>Concreteness</i>	<i>Semantic Depth</i>	<i>Cognate Status: Similar Spelling and Meaning as L1 Word</i>	
Squirrel	Concrete	Single meaning	—	Show a picture
Ring, can	Concrete	Multiple meaning	—	Show a picture and also explain multiple meanings
Aunt	Abstract	Single meaning	—	Explain meaning of word or translate
Take your time	Abstract	—	—	Explain meaning of words
Family / familia			Cognate	Say the English word and ask for or give native language word
Rope / ropa			False cognate	Show the false cognate and provide correct translation

Teach Tier-2 Words

In addition to Tier-1 words, as with EOs, ELLs need to be taught other words, such as Tier-2 words (Beck, McKeown, & Kucan, 2002) that they may not easily learn through grade-level texts or daily input sources. According to Beck, McKeown, and Kucan, Tier-2 words are sophisticated, high-frequency words for more advanced language learners. Of general utility, they are found across domains. Coxhead (2000) analyzed more than 3,500,000 words in academic texts, journals, and other academic materials to generate the Academic Word List (<http://www.uefap.com/vocab/select/awl.htm>). Appropriate for upper elementary or higher students, it consists of 570 high-frequency word families found across a range of academic domains.

Rich Word Instruction

Merely relying on a single source of word information alone (such as looking up dictionary definitions) is not effective. Instead, it is important to offer rich word instruction that includes immediate student engagement and deep processing of the words, and provides diverse contexts in which the words appear along with interesting examples (August et al., 2005; Blachowicz et al., 2006; Beck, McKeown, & Kucan, 2002; Graves, 2007). An example of rich word instruction is Beck, McKeown, and Kucan's *Text Talk* which is illustrated by the following steps:

1. Use the word in the context of the story. (“In the story, the cheerleaders cheered the baseball team as they played.”)
2. Provide a student-friendly explanation of the word. (“If you cheer someone, you clap or shout out words that help the person want to do his or her best.”)
3. Have students say the vocabulary word: This helps to instill a phonological (sound) representation of the word in their brain. (“Say, *cheer*.”)
4. Give several examples in a variety of contexts: This enables students to gain a broader understanding of the word. (“The children cheer as the clown tries to pick up all the balls in one minute.” “Jose cheered as his sister rode her bike for the first time.”)
5. Enhance the word-processing depth for the student:
 - a. Give additional examples and have students determine and explain whether words and contexts in these examples are used appropriately or not. (“Would you cheer a friend on if he is hurting another person? Why? Would you like someone to cheer you [on] if you were racing? Why?”)
 - b. Have students give their own examples. (“Have you cheered another person on? Finish this sentence, “I cheered _____.”)
6. Strengthen students’ phonological and semantic knowledge of the word. (Say the word that means to clap or shout out words that help a person want to do his or her best.)

Provide Multiple Exposures

Multiple exposures to target words accelerate vocabulary learning (Blachowicz et al., 2006). It is equally important to ensure that these multiple encounters occur in a variety of contexts that demand different learner tasks (Carlo et al., 2008). Table 2 below summarizes ways to provide multiple-word encounters and repeated practice (August et al., 2005; Blachowicz et al., 2006; Herrell & Jordan, 2008; Hickman, Pollard-Durodola, & Vaughn, 2004; Rieg & Paquette, 2009).

Table 2. Promoting Multiple-Word Encounters and Repeated Practice

Pre-select target words: Cull words that occur repeatedly in read-alouds, content-area texts, or the unit of study.

Classify words and display in a vocabulary pocket chart: Record newly introduced vocabulary words on sentence strips, and place them in the appropriate category in the pocket chart for easy reference and as a prompt to use the words throughout the day.

Use *total physical response* to convey word meaning: Have students act out or use gestures or charades to demonstrate word meanings in pairs or in front of the class. This enhances not only their understanding of the words, but also their retention of word meanings.

Conduct during-reading and post-reading activities to extend understanding of words. For example:

- Ask questions and/or hold discussions related to the text to draw out the meaning of target words.
- Write a new story using the vocabulary words. This can be done as a class with students taking turns to contribute to the new story by creating a sentence that includes one of the vocabulary words until all vocabulary words have been thus used. Or, older students can write their own stories that incorporate the vocabulary words.

- Give a synonym of one of the vocabulary words and have students select the appropriate vocabulary word that matches it.

Promote use of target words: Integrate the use of these words in your teaching and interactions with students. Encourage students to incorporate target words in their speaking, writing, retells, dramas, story maps, and literature logs.

Create vocabulary journals: Have students record in a vocabulary journal ways in which they or others have used target words within and outside the classroom (see Table 3). For kindergarten and beginning first grade, teachers can record student responses on the board. Plan time during the day for students to share their vocabulary journals with the class.

Table 3. Vocabulary Journal

Word	Who Said It	What Was Said
protective	I	Thanks for being protective of me.
hilarious	My friend	Your joke is hilarious.

Word-Learning Strategies

A third component of a comprehensive vocabulary program is the instruction of word-learning strategies. Word-learning strategies enable students to be independent word learners who can discover the meaning of words for themselves.

Context Clues

One common word-learning strategy is the use of context clues to infer word meanings. However, research has shown mixed results regarding the effectiveness of teaching this strategy to EOs (Baumann, Edwards, Boland, Olejnik, & Kame'enui, 2003; Blachowicz et al., 2006; Carlo et al., 2008; Graves, 2007), and the efficacy of teaching contextual analysis to ELLs is even more elusive. Numerous learner factors, such as ELLs' vocabulary size, word and grammar knowledge, world knowledge, and level of English language proficiency, as well as textual features (e.g., level of language difficulty, length of sentences, frequency level of the vocabulary) can all impact ELLs' ability and accuracy in inferring word meanings using context clues (Kaivanpanah & Alavi, 2008; Nagy, 1977). In general, following the principles below will enhance the effectiveness of teaching the use of context clues (Kaivanpanah & Alavi):

1. Highlight textual clues that lead to the meaning of the target word. This will enhance students' capability to recognize textual clues. Clues include synonyms, definitions, antonyms, contrasts, and examples.
2. Select texts in which the target words occur a few times.
3. To enhance accuracy of students' inferences of target words, teach them background knowledge of the text.
4. Teach this strategy to ELLs whose proficiency level is intermediate or advanced. (Beginning ELLs do not possess adequate vocabulary and grammar to infer meanings from textual clues, and may just resort to uneducated and erroneous guesses.)
5. Occasionally have ELLs look up the word meanings in a dictionary to validate the accuracy of their inferences. This helps them develop metacognitive awareness of the level of accuracy of their inferences.

A procedure that helps students infer meaning of unknown words from context clues is Katz and Carlisle's (2009) SLAP strategy:

- S: SAY the unfamiliar word to yourself.
- L: LOOK for clues in the text to help you get the meaning of that word.
- A: ASK yourself: "What could the word mean? What word or phrase can I use to show the meaning?"
- P: PUT the word or phrase in the sentence to check if it makes sense.

Morphological Analysis

Another salient vocabulary-learning strategy that ELLs need to acquire is *morphological analysis*. This strategy involves breaking down unknown words using the knowledge of the structure of words, in particular *morphemes*, which are the smallest meaningful units of words. Morphemes are either bound or free. Bound morphemes are word parts that cannot stand alone and are, in general, affixes. (Affixes are prefixes, e.g., *re-*, and suffixes, e.g., *-able* and *-ed*. Suffixes are either, (a) derivational, which means it changes the word's part of speech, e.g., adding *-ful* to the verb *play* turns it into the adjective *playful*, or, (b) inflectional, which means it does not modify the word's part of speech but modifies its tense, e.g., *wash* becomes *washed*, or number, e.g., *duck* becomes *ducks*).

Students can enhance their understanding of 60% of unfamiliar words by applying their knowledge of common root words and the strategy of morphological analysis (Nagy & Anderson, 1984). In general, studies have shown that knowledge of morphology is significantly related to vocabulary knowledge (Blachowicz et al., 2006; Carlisle & Fleming, 2003; Goodwin & Ahn, 2010; Nagy, Berninger, & Abbott, 2006) and reading comprehension (Freyd & Baron, 1982; Nagy, Berninger, Abbott, Vaughan, & Vermeulen, 2003). Furthermore, Carlisle and Fleming (2003) demonstrated that morphological knowledge in lower-elementary grades is associated with vocabulary knowledge and reading comprehension in upper-elementary grades.

Studies have also shown that ELLs benefit from morphological analysis and instruction. In particular, a meta-analysis of morphological interventions by Goodwin and Ahn (2010) suggested that morphological instruction is effective in enhancing vocabulary knowledge and reading comprehension especially among literacy strugglers such as ELLs. Furthermore, a study by Kieffer and Lesaux (2007) demonstrated that morphology is positively correlated with vocabulary knowledge and reading comprehension among both fourth- and fifth-grade EOs and Spanish-speaking ELLs in an urban school district. They also found that the correlation between morphological knowledge and reading comprehension is higher in fifth graders than in fourth graders, such that morphological knowledge is a more significant predictor of reading comprehension for fifth graders than is vocabulary knowledge.

It is clear from these studies that morphological instruction benefits ELLs in enhancing both vocabulary and reading comprehension. Students need to be taught, (a) prefixes and suffixes, (b) how words change by adding or removing affixes, and, (c) roots (Kieffer & Lesaux, 2007). In teaching ELLs prefixes and suffixes, it is important to focus on high-frequency affixes. Tables 4 and 5 show the 20 most frequent prefixes and suffixes, which constitute 97% and 93% of all prefixes and suffixes, respectively.

Word sorts, such as those found in Johnston, Invernizzi, Bear, and Templeton (2008), provide an effective hands-on approach to learning prefixes and suffixes: Introduce prefixes and suffixes using words with familiar bases, starting first with words that do not undergo spelling

changes with the addition of affixes, and then proceeding to words that change in spelling. Model how to think through the meaning of the affixes, bases, and resulting words when affixes are added (Templeton, 2010).

Table 4. Twenty Most Frequent Prefixes

Prefix (Meaning)	Example	% Occurrence
1. un (not)	unwilling	26
2. re (again)	reread	14
3. in, im, ir, ill (not)	impossible	11
4. dis (not)	dislike	7
5. en, em (cause to)	empower	4
6. non (not, without)	nonstick	4
7. in, im (in, into)	implant	4
8. over (too much)	overuse	3
9. mis (wrongly)	misbehave	3
10. sub (under, below)	subway	3
11. pre (before in time, place, order or importance)	preschool	3
12. inter (between, among)		
13. fore (opposite of, down)	interschool	3
14. de (opposite of, removal)	forecast	3
15. trans (across, beyond)	devalue	2
	transplant	2
16. super (above)	superstar	1
17. semi (half, partly)	semicircle	1
18. anti (against, the opposite)	antibully	1
19. mid (middle)	midway	1
20. under (too little, below)	underactive	1

Note: These 20 most-frequent prefixes constitute 97% of all prefixes; adapted with permission.

Table 5. Twenty Most Frequent Suffixes

	Suffix (Meaning)	Example	% Occurrence
1.	s, es (plurals)	cats, foxes	31
2.	ed (past tense)	camped	20
3.	ing (present participle)	going	14
4.	ly (characteristic of)	sweetly	7
5.	er, or (one who)	actor	4
6.	ion, tion, ation, ition (act or process)	correction	4
7.	ible, able (can be done)	stoppable	2
8.	al, ial (act or process of; having characteristics of)	national	1
9.	y (characterized by)		
10.	ness (state of, condition of)	laziness sadness	1 1
11.	ity, ty (quality or state of)	mighty	1
12.	ment (action or condition of)	argument	1
13.	ic (of, like, relating to)	basic	1
14.	ous, eous, ious (characterized by)	courteous	1
15.	en (become, made of)	tighten	1
16.	er (comparative)	faster	1
17.	ive, ative, itive (having the nature of)	festive	1
18.	ful (full of)	joyful	1
19.	less (without)	painless	1
20.	est (comparative)	fastest	1

Note: These 20 most-frequent suffixes constitute 93% of all suffixes; adapted with permission from White, Sowell, & Yanagihara, 1989.

When students become comfortable with the affix concept, teach them how to break down a word into its morphological parts:

1. Look for affixes and base words.
2. Remove any prefix or suffix attached to the word to discover its base.
3. Identify the meaning of the base, or think of another word with the same base.
4. Put the whole word together again, constructing its meaning based on the meanings of the prefix, base, and suffix.
5. Test whether you have the correct meaning by seeing if it matches the context of the sentence and the passage in which it occurs (Templeton, 2010).

In showing how words change due to affixes, a Word-Parts Analysis Chart can be used, as shown in Table 6.

Table 6. Sample Word-Parts Analysis Chart

Base	Inflections	Prefix Only	Prefix & Inflection	Derivational Suffix Only	Prefix & Derivational Suffix
assign	assigns assigned assigning	pre-assign	pre-assigns pre-assigned pre-assigning	assignment	pre-assignment

In teaching Latin and Greek roots, start with familiar words. Then proceed to words that are less familiar, but have meanings that are easier to grasp, before moving on to words that are more challenging. Websites such as Word Explorations (<http://www.wordexplorations.com/>) and Robertson's Words for a Modern Age (<http://wordinfo.info/>) are helpful in exploring Latin and Greek roots.

Teaching Word-Learning Strategies through Games and Word Play

Instruction of word-learning strategies can take the form of games and word play. For example, *Roots Rummy* is a game that focuses on roots and affixes: Teams form words by joining roots and affixes such as *con-struct*, *struct-ure*, *in-struct*, and *de-struct-ion*. Another game is *Roots Sort*: Teams play by sorting words that have the same roots and then determining the root meaning. For example, *microscope*, *telescope*, *periscope*, and *stethoscope* are words with the same root. In yet another game, *Suffixes*, teams add either *-er* or *-ment* or both to word roots. Following that, they have to create sentences using those new words (August & Snow, 2007).

Word-Consciousness Cultivation

A final component of a comprehensive vocabulary program is the cultivation of word consciousness. According to Scott and Scott (2010), "Word consciousness is an interest in and awareness of words as building blocks of communication [and] the ability to reflect on, and manipulate words as units of language" (p. 1). One approach to raising word consciousness is to enhance the *metalinguistic awareness* of students: the ability to consciously think about and reflect on linguistic characteristics, such as the characteristics of words (Graves, 2007). Games and activities, such as *Roots Rummy*, *Roots Sort*, and *Suffixes* described above, contribute to metalinguistic awareness of words. Another activity that fosters word consciousness is *Word Wizard* (August & Snow, 2007; Carlo et al., 2008). *Word Wizard* entails the students listening for unknown words, writing down the words and sentences containing them, checking the definitions of these words, and then, at the end of the week, sharing the words with their class or posting them on the website to share with students nationwide (August & Snow, 2007). (For more word-consciousness strategies, see Scott and Scott, 2010.)

Graves (2007) suggested that teachers use the following methods for cultivating word consciousness:

- Model skillful word choice
- Promote skillful word choice in students
- Encourage word play and word-play books
- Offer instruction that is rich and robust
- Have students partake in novel explorations of words
- Provide instruction on words

Other Critical Considerations

The four-component vocabulary instruction program, along with the research-based strategies discussed above, serve only as an emerging framework. Several major factors impact the shaping of this framework for an effective vocabulary program for ELLs. The first is the

limited size of the research knowledge base from which to draw for defining the vocabulary program. Despite surges in interest and research in vocabulary instruction and vocabulary knowledge, the number of experimental and quasi-experimental studies addressing ELLs' vocabulary in the past 25 years is still limited (August et al., 2005; Blachowicz et al., 2006). In other words, the number of studies in this area remains scanty, resulting in a huge knowledge gap.

To compound the situation, prior schooling experiences, traumatic immigration experiences, political conditions of ELLs' home country before immigration, and the number of years ELLs have been in the United States are all factors that impact the success of their learning (Crawford, 2004). As such, these variables, as well as the diverse cultural, linguistic, literacy, and socio-economic background of ELLs, limit the generalizability of research results. Another factor that adds to the complexity of defining an effective vocabulary program for ELLs is the need for an effective method of assessing vocabulary development. Research in this area is lacking, especially research that relates to measures of academic vocabulary (Blachowicz et al., 2006). A final consideration in what constitutes an effective vocabulary program for ELLs is the amount of time and effort necessary to implement it. Effectiveness needs to be balanced by efficiency and simplicity, as well as its ease of maintenance and integration with any existing instructional program so that teachers are willing to use it. For example, Carlo et al. (2008) reported that despite the positive outcomes of their intervention, the teachers in their study did not integrate the instructional program into their practice after the study.

CONCLUSION

It is evident that a great need exists for more experimental and quasi-experimental studies on pedagogical approaches in enhancing ELLs' vocabulary knowledge. Future research that explores the impact of cultural, linguistic, literacy, and socio-economic factors on vocabulary learning among ELLs will also extend the knowledge base in this area. In addition, efficacious methods in vocabulary measurement and assessment also constitute an important research area. Similarly, studies that integrate multiple components of vocabulary learning will yield more authentic results.

Vocabulary knowledge plays a crucial role in closing ELLs' literacy achievement gap. Teachers need to cultivate vocabulary growth in ELLs through a language and word enriching environment as well as engaging and interesting instruction in vocabulary words and word-learning strategies. It is also important to develop a classroom community that cultivates and promotes word consciousness so that ELLs are excited and motivated to learn new words and use them in effective and meaningful ways.

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