

## CHAPTER 13

# If You Want Students to Learn Vocabulary— Move Beyond Copying Words

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### Key Points for This Chapter

- Students need to engage in developing deep understandings of word meanings, not in surface-level memorization.
- When selecting words to teach, consider what each word represents (concept or label), how often and in what contexts it occurs, whether it can be understood without being taught, what knowledge students might have of the word, and what type of word it is—vocabulary of mature language users, academic vocabulary.
- Semantic maps and webs, semantic feature analyses, four square, and morphology are strategies that can support vocabulary development.

### **A BIRD'S-EYE VIEW OF CLASSROOM PRACTICE**

It's Monday morning, first period in Ms. Gardner's seventh-grade English/language arts class, and true to every Monday's routine, Ms. Gardner begins the 48-minute period by handing out a copy of the week's vocabulary words—a list of 30 words deemed important for middle school students to know. As she walks around distributing the list, Ms. Gardner reminds the students that by Wednesday they should have copied each word into their

notebooks, along with a definition and a relevant sentence, so that they're ready to talk about the words and their meanings in preparation for Friday's random 15-word quiz. Groans and "30 this time?" are heard from a few students, though they say nothing further, and most begin copying the words into their notebooks.

Ms. Gardner realizes that vocabulary knowledge is important for her students; she believes knowing more words will make it easier for them to understand what they read and enable them to write with more sophisticated and descriptive language. This knowledge will benefit the students when it comes time for state tests and, she hopes, eventually Scholastic Aptitude Tests (SATs) or American College Tests (ACTs). Furthermore she thinks it's important to consider what the research says, and research supports the value of vocabulary development; in fact, because of recent research, her district has put an increased emphasis on vocabulary knowledge in hopes of raising student achievement. Most of her students have very limited vocabularies as evidenced by the most recent state testing results (over 85% of the students did not pass the literacy portion of the test) and by the word confusions that pop up almost daily during classroom discussions. Ms. Gardner selects words each week from a book provided by her district that is designed for middle and high school students. She feels pressure to increase students' vocabulary knowledge and acknowledges stepping up the number of words this week from 25 to 30 because of the pressure.

So what approach does Ms. Gardner use to teach vocabulary? She admits she's uncertain of how best to teach the words, and adds that the way she's teaching her students is the way in which she was taught and the way the teacher she worked with when she was preparing to become a teacher taught her students. "It's also the way most of my colleagues teach their students." Ms. Gardner then falls silent for a moment and says, "I've never really thought about *how* to teach the words until very recently, with the district's push for more emphasis on vocabulary; I guess I've just had my routine, and the kids haven't really complained. I have wondered, though, just *how many* words I should give the students, especially now with the district push." She expresses concern about having to devote even more time now on Wednesdays to going over the extra words. She already spends considerable time clarifying confusions, and by the end of the week most students perform "fairly well" on the random word quiz, though their retention in the long term is seldom evident in their reading and writing.

When pressed further about her approach to instruction, Ms. Gardner recalls her own experiences as a student: "I put a lot of time into looking up the words, copying down the definitions, and studying for the quiz each week, and I generally did quite well, but to be honest, I can't say I really remember that many of the words; they didn't really become a part of me. But just last week I made an interesting observation: *Amiable* was one of our words and seeing it made me recall when I was in middle school

and had been given that word to learn. The experience was memorable, because that same week we also had the word *amicable* on our list, and I was struck back then by how much alike the two words were, both visually and in meaning. It seemed so odd because there was usually no connection between the words we were assigned, other than they were considered important to know. Unlike 95% of the other words, I've never forgotten those two." She pauses and reflects: "I probably should have put *amicable* on my students' list, too. I thought about it, wondered if the two words might also be memorable for them. I wish I knew some other things to try."

Despite Ms. Gardner's recognition that her current approach of assigning dictionary defining and memorization is not a highly effective one for her students, she continues the practice because she needs to do something to try to foster vocabulary knowledge, has limited time to do so, and quite frankly doesn't really know what other approaches might be better.

## DEFINING THE TARGETED PRACTICE

The vocabulary practice Ms. Gardner is using is often referred to as the *traditional* or *standard* approach, or the *word list* or *dictionary* approach. In any case, it is a method, with slight variations, whereby students are typically asked to copy words, look up their definitions or a synonym, perhaps generate a sentence using the word, and take a quiz over some or all of the words at week's end. The method relies on rote memorization of words that may be related in no other way than perhaps that they are deemed important for a college-bound young person to know. In some instances the lists are simply levied as assignments without benefit of the type of discussion that Ms. Gardner has each week with her students. The lists used with this approach vary in length; I have seen some as short as 10 or 15 words and heard stories of others as long as 75! It is the approach that many of us experienced in our schooling—or perhaps I should say *endured* in our schooling.

## WHAT DOES THE RESEARCH SAY ABOUT THE TRADITIONAL APPROACH OF COPYING AND LOOKING UP VOCABULARY WORDS?

A definition is the enclosing of a wilderness of idea within a wall of words.  
—SAMUEL BUTLER (1912)

Despite general consensus in the academic community about the ineffectiveness of the traditional approach to vocabulary instruction, the actual research on this practice is surprisingly sparse and dates primarily from

decades ago. We find explanation for the name *traditional* in the review of vocabulary instruction by Petty, Herald, and Stoll (1967), who begin their discussion of the methods they examined with the *word list* approach, “because it is the oldest of the direct methods” for teaching vocabulary (p. 17). This practice, widely used for decades and still used today in many middle school classrooms, has long been recognized as one that causes students much difficulty (Deese, 1967; Nist & Olejnik, 1995), so much so, in fact, that some researchers have raised serious questions about the value of the definitional approach for vocabulary learning (e.g., Beck, McKeown, & Kucan, 2002; Miller & Gildea, 1987; Nagy, 1988). Others, such as Petty and colleagues, take a slightly less absolute, though by no means encouraging, perspective, concluding that “any attention to vocabulary development is better than none” (p. 85).

What issues have led scholars to hold such negative views about this age-old approach to vocabulary instruction? Numerous concerns stem from teachers’ misuse of the dictionary to teach vocabulary rather than for its intended use as a resource for students to understand unfamiliar words they encounter during reading. As a tool for traditional vocabulary instruction the dictionary falls short. Nagy (1988) and Anderson and Nagy (1992) highlight several of the inadequacies, not the least of which is that assigning students to copy dictionary definitions and write sentences results in a large number of strange sentences (e.g., *the tide regurgitates to the ocean*) generated by students who often misconstrue the language of the definitions, such as “to flow back” in the case of *regurgitate*. Because dictionary definitions must necessarily be concise, lexicographers (those who write dictionaries) frequently have to rely on vocabulary that is more sophisticated than the targeted word itself in order to try to fully express the concept in the space of a line or two of text; such is the case with *mirror*, below. (Note: the definitions that follow are from the *American Heritage College Dictionary*, 2004, but could easily be from other dictionaries, because the same tendencies hold true across all.)

*mirror*: a surface capable of reflecting sufficient undiffused light to form an image of the object placed in front of it

To understand the definition of *mirror*, an inquirer would basically have to already know the word and several more sophisticated terms, such as *undiffused*. *Reflection* presents a similar prior knowledge issue because it is defined with words that are related to it—“The act of *reflecting* or the state of being *reflected*.” If you don’t know what *reflect* means, you’re in trouble and will have to search out the meaning of this word in order to understand *reflection*.

Nagy (1988) discusses additional language-related issues, such as definitions that are sometimes inaccurate, at least when the reader’s prior

knowledge is considered. Although readers may be familiar with all of the words used in a definition, they may not be familiar with *all* of the meanings of all of the words, and application of an incorrect meaning can soon lead to misunderstanding, as with *stewed* in the definition below:

*conserve*: A jam made of fruits stewed in sugar.

Knowing *stew* as a food dish made with meat, vegetables, and a broth may leave readers turning up their noses and wondering as they envision *conserve* as a jam made with fruit, meat, and vegetables! Even when simpler definitions are substituted for the standard ones, students still have difficulty generating sentences that accurately capture the meanings of half the words (McKeown, 1993). To fully appreciate the challenge of using the dictionary definitions of unfamiliar words to write sentences that express word meanings, you might try the practice, using the following set of four words (not 25!) and their *American Heritage College Dictionary* meanings:

*folderol*: a trifle; gewgaw

*lixivate*: to wash or percolate the soluble matter from

*retral*: situated or located close to, or directed toward the back

*verisimilitude*: the quality of appearing to be real or true

As a tool for understanding unfamiliar words encountered during reading, I find the dictionary unparalleled. Students need to be taught how to efficiently and effectively use dictionaries and learn to appreciate what they have to offer as a resource. When misused, the end result may well be a turn-off and avoidance.

Because a key aim of vocabulary learning is to improve reading comprehension, it is important to consider that looking up and writing down dictionary definitions and sentences does not necessarily improve reading comprehension either (Baumann & Kame'enui, 1991), because comprehension depends on in-depth conceptual knowledge of a word, which cannot be consolidated into a dictionary definition (Nagy, 1988). Other studies that have reached similar findings have demonstrated an increase in comprehension when a combined approach of definition and context is used (Stahl & Fairbanks, 1986). Absence of a context for how the word is being used, which could provide insights into word meaning, compounds the problems of dictionary definitions. Knowledge of a single definition can't possibly capture the nuances of the concept being expressed, as, for example, with a word such as *commotion*. Is the commotion merely a *fuss* or a *ruckus*, or is it a *bullabaloo* or *mayhem* or *pandemonium*, or perhaps utter *chaos*? Each of these words is a potential synonym for *commotion*,

but their meanings are quite different. Students need instruction on how to choose the most appropriate meaning, and this necessitates an understanding of the context of the sentence and the nuances of word meanings. In addition, students need to be taught how to use context to gain clues to word meaning. It is not enough to simply remind students to “use the context clues”; some students do not know how to approach this. One way to go about teaching them is to use a series of cloze passages that requires students to consider what makes sense for the missing words. A variation of the technique encourages students to balance context clues with letter/sound clues (Ganske, 2006; Strickland, Ganske, & Monroe, 2004).

Despite the importance of context clues for understanding vocabulary and ultimately for improving reading comprehension, the most effective vocabulary instruction goes well beyond combining context with definitions. Research suggests that rather than relying on the superficiality of rote memorization, vocabulary instruction should be focused on developing deep understandings of words (Stahl, Brozo, & Simpson, 1987). This sentiment is echoed by those who argue further for instructional purposes that actively engage students in learning words (Anderson & Nagy, 1992; Nagy, 1988). Drawing on surveys of existing research, Nagy identified three critical ingredients for vocabulary instruction aimed at improving reading comprehension: *integration*, *repetition*, and *meaningful use*. The *Report of the National Reading Panel: Teaching Children to Read* (National Institute of Child Health and Human Development, 2000), in addition to suggesting these characteristics—which are the categories of *learning in rich contexts*, *repetition*, and *multiple exposures*—also recommended that vocabulary instruction include:

- Both explicit and implicit teaching
- Incidental learning
- Use of computer-assisted technology
- Active engagement
- Restructuring of tasks, as necessary
- Multiple methods to optimize learning

In the next section we delve into effective research-based strategies for developing the vocabulary knowledge of middle school learners, including determining which words to teach.

### WHAT ARE SOME ALTERNATIVES?

In order to develop students’ vocabulary knowledge, Ms. Gardner might have chosen words judiciously and used strategies that would develop deep knowledge of the targeted words, so that students would transfer vocabulary

knowledge to reading and writing. Transferring word knowledge would enable students to generalize their understandings to more words than just those targeted, such as through the use of morphology, so that word learning could be more efficient. In the following section, we explore alternatives to Ms. Gardner's copy-it-down-look-it-up-memorize approach.

### **Determining Which Words to Teach**

Ms. Gardner expressed concern about choosing words to teach. Nagy and Anderson (1984) estimated that by the time students reach high school, they will have been exposed to about 88,500 different word families—*word family* being defined as a group of words that share a common root, as *democratic*, *democracy*, *demographics*, *demography*, and so on—so the actual number of words is far greater. Given the sheer number of vocabulary words that students must navigate, it is essential that word learning be efficient. So, which words should be taught?

Researchers sometimes have categorized words by type for word learning. Beck and colleagues (2002) describe a three-tier model: Tier I words generally do not have to be taught (e.g., *tired*, *happy*, *hungry*); Tier II words are the vocabulary of mature language users (e.g., *fatigued*, *ecstatic*, *ravenous*), the concepts of which learners probably already know (*tired*, *happy*, *hungry*), and which Beck and her colleagues believe should be the focus of instruction; and specialized, low-frequency, domain-specific Tier III vocabulary (e.g., *longitude*, *photosynthesis*, *trapezoid*, *proletariat*), which the authors of the tiered approach suggest should be taught as needed and within specific contexts.

Another category of words is *academic vocabulary*, the language of schools and schooling: for example, *isosceles triangle*, *literary criticism*, *genre*, *possessive*, *steppe*, *sequential*, *circuit*, and so on. Different scholars define academic vocabulary in different ways (e.g., Baumann & Graves, 2010; Coxhead, 2000; Fisher & Frey, 2008; Hiebert & Lubliner, 2008; Marzano & Pickering, 2005; Snow, 2010; Townsend, 2009). The variation in definition stems in part from the fact that there isn't an exact point at which a word is considered to be academic language; rather, academic language "falls toward one end of a continuum (defined by formality of tone, complexity of content, and degree of impersonality of stance), with informal, casual, conversational language at the other extreme" (Snow, 2010, p. 450). Despite the differences in definition, there is general agreement that academic vocabulary, as well as Tier II and III types of words, are critical for students to know if they are to be successful middle school learners. With so many possibilities to choose from, how does a teacher such as Ms. Gardner determine which words to explicitly teach?

When considering the matter, keep in mind that a common expectation is that readers need to be able to grasp at least 90% of the words in a

text in order to comprehend it; however, some research suggests that understanding may be possible when as few as 85% of the words are known (Freebody & Anderson, 1983). Therefore, be selective in your choices for explicit instruction. For narrative text, Hiebert and Ceruetti (2011) recommend choosing synonyms and semantically related words across texts that cluster around character traits, attitudes/emotions, actions, and so on (e.g., *irritated, heroic, suspended, smacked*) because an uncommon word may appear just once or twice within a given story, but it may well be represented across stories by various similar vocabulary (e.g., *worried, fretting, anxious, concerned, fearful, uneasy*). Frey and Fisher (2006) suggest that teachers consider the following characteristics as they deliberate about which words to use:

1. *Representativeness*: Is this a word that stands for a concept and thus has broader utility, or is it just a label (e.g., *photosynthesis* and *justice* vs. *stamen* and *attorney*)?
2. *Repeatability*: Is the word going to appear again and again in reading or conversation and is therefore worth learning?
3. *Transportability*: Is this a word that will facilitate further understanding of other words?
  - a. Is the word going to appear in various contexts (*positive/negative* numbers in math, spaces in art, poles in electricity)?
  - b. Does the word have a word part—prefix, suffix, word root—that appears in numerous words that can aid understanding of other words (e.g., *disapprove, autocratic*)?
4. *Contextual analysis*: Are there context clues that can be used to uncover the meaning? If so, there is no need to teach it (but, as previously mentioned, there is a need to teach the use of context clues).
5. *Structural analysis*: Words with prefixes, suffixes, or roots that can be analyzed don't need to be taught (but here, too, students need to be taught how to use morphology to analyze words for meaning).
6. *Cognitive load*: Just how many words should be targeted for students' learning at any one time is debated. It may be that the old expression of "less is more" applies. In a recent study, as a means of accommodating different learning styles and abilities while attempting to develop deep understandings, one researcher (Faulkner, 2010) focused attention on just three words a week; the words were chosen for their applicability to the weekly writing focus in junior English—the persuasive essay. Considering the need to develop deep meaning in rich contexts, 8–12 words may work well, depending on the words and the learning situation.



Nagy and Hiebert (2011) recommend consideration of similar factors as well as taking into account students' prior knowledge of the word or concept when thinking about cognitive load, noting that some familiarity can increase the likelihood of the word being learned. Flanigan and Greenwood (2007), building on the work of Beck and colleagues (2002) but with a focus on Tier III content-area words, suggest that timing should be a consideration. Their four-level model includes (1) *before words* that are critical and require in-depth understanding at the onset of reading (e.g., *continental drift, impeach*); (2) *foot-in-the-door words* that are essential for understanding but only at the surface level, such as a label for a concept (e.g., *stamen, mercenary*); (3) *after words* that are not essential for the gist of the passage and therefore may be dealt with after the reading (e.g., *infuriated*); and (4) *words not to teach* because they are already known, can be understood from the text, or do not match the instructional goal.

### **Knowing a Word**

Something Ms. Gardner didn't consider is this: What does it mean to know a word? Though she was aware of students' performance on the weekly quiz and of her own lack of long-term retention of vocabulary from her school days, she does not seem to realize that it's not just a simple matter of either knowing a word or *not* knowing it. As early as 1942 Cronbach identified five dimensions to describe a person's knowledge of a word and how the knowledge can be used (see Table 13.1). Different situations require different levels of word knowledge but, clearly, having sufficiently deep understanding of words to be able to use them in discussions, writing, and thinking is a desirable outcome of vocabulary learning. Whether a word is difficult or easy for students to learn will depend to a great extent on how easy it is for them to connect the word to what they already know (Nagy & Hiebert, 2011). For instance, learning a new word for a known concept is easier than either learning a new meaning for a known word or a new word for a new concept (Graves, 2000).

### **Knowledge Rating**

Dale (1965) also considered what it means to know a word and described a progression that encompasses four stages: (1) never saw it, (2) heard it but don't know what it means, (3) recognize it when I see it and know it has something to do with . . . , and (4) could define and/or use it. Various adaptations of Dale's work have been used to help students self-survey their understanding of specific vocabulary and to aid teachers in assessing students' prior understandings so they know which vocabulary words they will need to teach (Allen, 1999; Blachowicz, 1986; Ganske, 2008). Ms. Gardner could

**TABLE 13.1. Cronbach's Five Dimensions of What It Means to Know a Word**

Dimension	Demonstrated trait	Example of knowledge use
Generalization	Define the word.	" <i>Tattoo</i> : a permanent mark on the skin made by pricking or scarring."
Application	Use the word correctly or define its correct usage.	"The sailor had an anchor <i>tattoo</i> on his right arm."
Breadth	Know multiple meanings for a word.	"Two other meanings for <i>tattoo</i> are a drum or bugle signal that calls soldiers and sailors back to camp, and to beat or tap rhythmically."
Precision	Know when, and when not, to use a word.	"My brother's nervous tapping on the table was like a <i>tattoo</i> , but you probably wouldn't say the siren wailed like a <i>tattoo</i> , because it's constant."
Availability	Apply the word in discussions and thinking.	"We could plan to include a <i>tattoo</i> when the band gets to the cemetery on Memorial Day."

build students' motivation for learning words and increase her understanding of which words need to be taught using the knowledge rating activity (Blachowicz, 1986). Knowledge ratings can also be used to examine students' understandings after vocabulary teaching. Try out the knowledge rating in Figure 13.1 by placing an X in the appropriate cell for each strategy.

### **List-Group-Label**

Ms. Gardner could also have fostered motivation for learning about concepts and at the same time activated (or built) students' background knowledge for a concept about to be studied by using this brainstorming activity. List-group-label (Taba, 1967) encourages students to explore relationships among words. Students can complete the activity collaboratively or independently, though I prefer the former approach because it provides support for those with limited knowledge of the topic. Distribute a set of 8–12 note cards to each group or individual. Demonstrate and explain the following process before asking students to get started:

1. Brainstorm all the words you can think of that relate to the topic/concept; record each word on a separate card.
2. Examine the brainstormed words for possible categories; group the words accordingly. (*Note:* It can be helpful to suggest that students use a miscellaneous category to place words that don't seem to fit existing groups.)

Knowledge rating				
	Never saw it	Heard it, but don't know what it means	Recognize it when I see it and know it has something to do with . . .	Could define and/or use it
List-group-label				
Knowledge rating				
Morphology				
Semantic feature analysis				

FIGURE 13.1. Knowledge rating.

3. When satisfied with the groupings and all of the words have been placed, determine a label for each group. Record the labels on separate cards and place at the top of their respective categories.
4. Discuss and refine the results. If the brainstorming was carried out independently, students might first convene in small groups to pool their words and to revise their categories.

The brainstorming, listening, and sharing involved in this activity not only activate and build students' prior knowledge, but they also develop students' interest in the topic and provide teachers with a quick diagnostic of their misconceptions and known terminology.

### **Semantic Maps and Webs**

Ms. Gardner remarked that the two words she definitely recalled from her learning of assigned vocabulary lists were related. She, and her students, would have benefited from examining connections across words. Semantic maps and webs are graphic organizers that are used to depict relationships among words associated with a particular concept, such as *civilization* or *community*. The key term is recorded in the center, with lines radiating out, each ending in a word. Additional terms may emanate from these words. For instance, a semantic map for *community* might include rays for *services*, *government*, *schools*, *recreation*, *businesses*, *population*, and so on. The prong for *schools* might include the additional labels of *public*, *private*, *preschool*, *elementary*, *middle*, and *secondary*. Figure 13.2 shows a semantic map for *civilization* and characteristics that might be taken into account when thinking about a civilization. The map could become a template for exploring particular civilizations in greater detail, such as the Roman, Greek, Egyptian, or Aztec civilization, or even *Weslandia*, a fictional civilization created by noted children's author Paul Fleischman (1999). Bear in

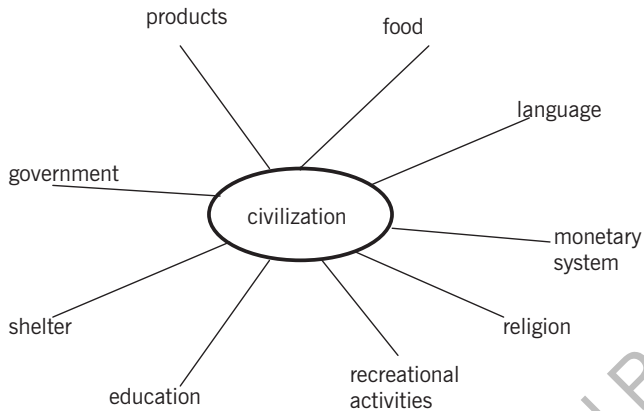


FIGURE 13.2. Semantic web of *civilization*.

mind that though webs and maps can effectively aid vocabulary learning (Heimlich & Pittleman, 1986), an essential element is discussion about the web and its components (Stahl & Vancil, 1986).

Webs or maps can also be used to explore specific relationships among words, such as synonyms and antonyms. This is a particularly useful activity for words that have multiple meanings or words with numerous synonyms whose nuances vary (Paul & O'Rourke, 1988). As with list-group-label and many other activities, categorizing plays a role in helping learners conceptualize the overarching idea. Consider *commotion*, a word used in Patricia Polacco's picture book *Pink and Say* (1994), the story of a friendship that develops between two young men from opposite sides of the Civil War. A brainstorming of *commotion* might result in the synonym web depicted in Figure 13.3, which shows words grouped according to how intense the commotion is: A mild fuss (*disruption*), confusion characterized by lots of noise (*hubbub*), or a confusion that also involves destruction or violence (*mayhem*). An exploration such as this creates an opportunity to highlight the importance of context for determining meaning.

Webbing encourages students to make connections among words and concepts and between new words and words they already know. These relationships can include word parts, such as words that share a common prefix, suffix, or root. Here again, discussion is critical to developing students' understanding. Technology can be used to reinforce these understandings and to increase student engagement. For example, after delving into nuances of a word (such as *condition*) or comparisons of words with opposite meanings (such as *calm* and *commotion*), students might create a Wordle (see [www.wordle.net](http://www.wordle.net)) with the two words to show the synonyms and nuances of each, as in Figure 13.4.

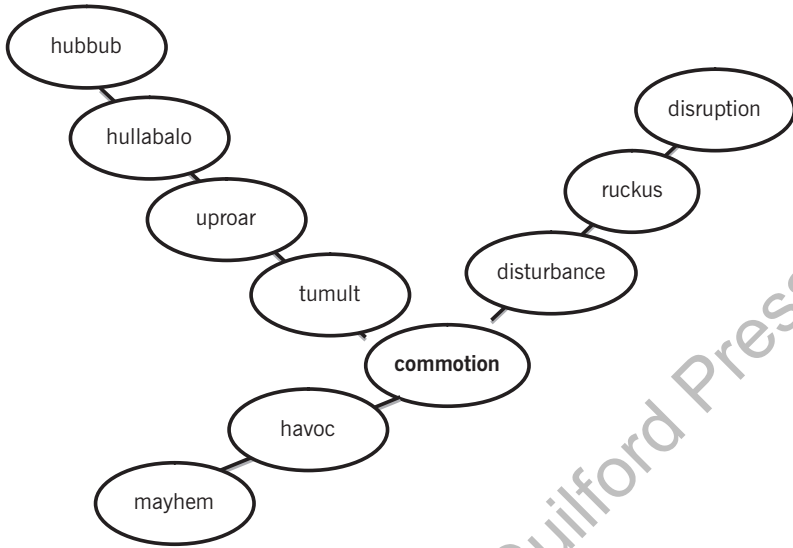


FIGURE 13.3. Synonym web for *commotion*.



FIGURE 13.4. Wordle for *calm* and *commotion*.

### Semantic Feature Analysis

Because knowing what a word means lies not only in grasping its characteristics, but also in understanding what are *not* its traits, examining semantic relationships among words and how they compare and contrast is a valuable part of vocabulary learning. Another graphic organizer that deals with specific relationships among words is the semantic feature analysis (Johnson & Pearson, 1984), a tool for exploring the characteristics of closely related words in categories such as *musical instruments*, *types of trees*, *13 colonies*, and so on. The semantic feature analysis has been found to be very effective in helping students develop deep understanding of concepts and vocabulary (Baumann, Kame'enui, & Ash, 2003), and it is another strategy that could benefit Ms. Gardner's students. She would provide them with a table that includes key vocabulary terms listed down the left side and traits or key ideas listed across the top. For each empty cell, students record a symbol to indicate agreement or not. For example, in Figure 13.5 the cell where *trapezoid* and *parallel sides* intersect has been checked to show that a trapezoid figure has at least one set of parallel sides. The table could be completed jointly or discussed after individuals or groups of students filled it out.

### Four Square

The four-square strategy builds understanding of a word through multiple associations with it, thereby creating a rich experience of the word and making it memorable—something that would enable Ms. Gardner's students to recall and use the word. Consider *marauder*, another word from Patricia Polacco's *Pink and Say* (1994). Students not only define the key attribute(s) of the word but also generate an example and a nonexample for

	Equal sides	Parallel sides	Right angles	Equal angles
Isosceles triangle	0	0	0	0
Equilateral triangle	✓	0	0	✓
Trapezoid	0	✓	0	0
Square	✓	✓	✓	✓
Parallelogram	0	✓	0	0
Rectangle	0	✓	✓	✓

FIGURE 13.5. Semantic feature analysis: Geometric figures.

Word	Example
<i>marauder</i>	<i>a fox that steals the eggs of a chicken</i>
Definition	Nonexample
<i>a robber</i>	<i>policeman</i>

FIGURE 13.6. Four square for *marauder*.

it, thereby exploring the word's meaning through multiple perspectives (see Figure 13.6). The strategy is based on the Frayer model (Frayer, Frederick, & Klausmeier, 1969), a long-used technique recognized for its focus on developing a thorough understanding of the word. Four-square responses can be recorded on note cards that become part of a student's personal vocabulary card file developed over time.

### **Morphology**

As with *amiable* and *amicable*, which stood out in Ms. Gardner's memory, students in her class might be taught to use morphology, which involves the use of meaning units (*morphemes*), to unlock word meanings. There are four types of morphemes. *Prefixes* (e.g., *re*, *un*, *pre*, *dis*) and *suffixes* (e.g., *er*, *est*, *ing*, *ed*, *ly*, *ment*) attach to the beginnings and endings of words. *Base words* or *root words* are whole words to which prefixes and suffixes affix (e.g., *view*, *read*), and *word roots* or *roots* are morphemes that can't stand alone without the addition of one or more prefixes and/or suffixes, as *fer* ("to carry") in *refer*, *transfer*, and *confer*, or *vis* ("to see") in *television*, *visor*, and *revise*. Because the meanings of morphemes are quite stable from word to word, students can apply their knowledge of prefixes, suffixes, and roots in one word to an unfamiliar word to try to understand it. The potential of this approach can be seen in the fact that about 60% of the unfamiliar words that readers encounter in grades 3–9 could be analyzed in this way (Nagy & Anderson, 1984). Prefixes are particularly valuable to teach because they are limited in number and are part of lots of words.

The following list of 20 of the most common prefixes occur in some 3,000 words (Graves, 2004); those with asterisks have spelling variations, such as *im*, *ir*, and *il* for *in*.

*un*, *re*, *in*\*(not), *dis*\*, *en*\*, *non*, *in*\* (*in/into*), *over*, *mis*, *sub*\*, *pre*,  
*inter*, *fore*, *de*, *trans*, *super*, *semi*, *anti*, *mid*, *under*

When teaching learners about roots, teachers should keep in mind that (1) the semantic connection is more transparent in some words than in others, as *ped*, meaning “foot,” is in *pedal*, *pedestrian*, and *pedometer* but not so in *expedite*; and (2) spelling and pronunciation can disguise the semantic relationship, as with *persuasion/persuade* and *deprivation/deprive* (Nagy & Hiebert, 2011). Teacher guidance and instruction that begins with the more common prefixes, suffixes, and roots and gradually works toward those of lower frequency are important. Due to the families of words that are studied with this strategy, efficiency of word learning increases, as does the possibility for carryover to reading (Nagy & Hiebert).

What approaches can be used to study morphemes? Explicit instruction with a gradual release-of-responsibility model is one possibility. This approach includes explanation of the purpose and description of the technique, teacher modeling or demonstration, guided practice, collaborative use of the strategy with peers, and finally independent use of the strategy (Fisher & Frey, 2008). Elements of inquiry can be built into the teaching; for example, a web might be used to focus attention on a particular root or suffix, with individuals, groups, or the whole class brainstorming words that include the morpheme. An investigation of the prefix *oct* might result in *octopus*, *octagon*, *octave*, *octogenarian*, and *October*, with students hypothesizing about the meaning of *oct* and about the inclusion of the 10th month in a grouping of words with a prefix meaning “eight.” Similarly, an exploration of *ast(er)* might yield *astronomy*, *asteroid*, *astronaut*, *disaster*, and *asterisk* and lead to a discussion about the meaning of the root (“star”) and about the connection between the last two words and *star*. As an alternative, students might be given a set of word cards featuring two to four different roots and be asked to categorize the words, talk about the meaning of each word, and speculate on the meaning of each of the targeted roots (Ganske, 2008).

<u>Category 1</u>	<u>Category 2</u>	<u>Oddball</u>
<i>audience</i>	<i>television</i>	<i>audiovisual</i>
<i>auditorium</i>	<i>visible</i>	
<i>audition</i>	<i>vista</i>	
<i>inaudible</i>	<i>visit</i>	
	<i>visor</i>	



## CONCLUSION

Word studies should be engaging for learners. By setting up vocabulary inquiries and investigations, such as those described in this chapter, for students to learn new words and discover the wonder of our language, teachers ignite a critical aspect of vocabulary study: developing students' word consciousness—that is, their awareness, interest, and appreciation for language that can provide them with not only the impetus for independent learning of vocabulary but also with the ability to flexibly apply vocabulary in their reading and writing. Teachers can promote word consciousness through word plays with puns, idioms, and other figures of speech common to our language and by exploring the etymologies of words and some of the engaging, if not amazing, stories behind words. Doing so helps students to see language and vocabulary as worthy of their notice. For instance, a word such as *bankrupt* takes on new meaning for students when the relationship of *rupt* to “break” is considered. Although transparent in *interrupt* (“break between”) and *erupt* (“break out”), the connection is obscured in *bankrupt* (obviously it's not the bank that is broken when someone goes bankrupt!). The story stems from medieval Italian moneylenders who carried out their business on a small bench (*banca*) in the market place; if their business happened to fail, they were forced to break their bench (*banca rupta*), giving us the word *bankrupt* (Ganske, 2008).

Teachers should also promote students' word consciousness by modeling their own interest in words, encouraging students to savor interesting vocabulary, and providing time and opportunity for them to investigate word meanings and apply their knowledge in multiple ways so that deep understandings of words are developed. “Owning” words involves far more than copying them and their definitions; 7–20 meaningful interactions with a word may be needed before it becomes part of a learner's working vocabulary. Meaningful vocabulary instruction, such as described in this chapter, builds habits of mind for a lifetime of vocabulary learning, not just for an end-of-the-week random quiz.

## ADDITIONAL EXAMPLES

### ABC Bookmaking Builds Vocabulary in the Content Areas

[www.readwritethink.org/classroom-resources/lesson-plans/bookmaking-builds-vocabulary-content-276.html](http://www.readwritethink.org/classroom-resources/lesson-plans/bookmaking-builds-vocabulary-content-276.html)

### Choosing, Chatting, and Collecting: Vocabulary Self-Collection Strategy

[www.readwritethink.org/classroom-resources/lesson-plans/choosing-chatting-collecting-vocabulary-296.html](http://www.readwritethink.org/classroom-resources/lesson-plans/choosing-chatting-collecting-vocabulary-296.html)

**Flip-a-Chip: Examining Affixes and Roots to Build Vocabulary**

[www.readwritethink.org/classroom-resources/lesson-plans/flip-chip-examining-affixes-253.html](http://www.readwritethink.org/classroom-resources/lesson-plans/flip-chip-examining-affixes-253.html)

**Solving Word Meanings: Engaging Strategies for Vocabulary Development**

[www.readwritethink.org/classroom-resources/lesson-plans/solving-word-meanings-engaging-1089.html?tab=1#tabs](http://www.readwritethink.org/classroom-resources/lesson-plans/solving-word-meanings-engaging-1089.html?tab=1#tabs)

**Student Interactive: Flip-a-Chip**

[www.readwritethink.org/classroom-resources/student-interactives/flip-chip-30031.html](http://www.readwritethink.org/classroom-resources/student-interactives/flip-chip-30031.html)

**Various Other Strategies**

Savino, J. A. (2011). The Shakespeare in all of us: A monumental, multitudinous, premeditated approach to vocabulary instruction. *Journal of Adolescent and Adult Literacy*, 54(6), 445–453.

**TRADE MATERIAL CITED IN TEXT**

Fleischman, P. (1999). *Weslandia*. New York: Scholastic.

Polacco, P. (1994). *Pink and say*. New York: Scholastic.

**REFERENCES**

- Allen, J. (1999). *Words, words, words: Teaching vocabulary in grades 4–12*. York, ME: Stenhouse.
- American Heritage College Dictionary* (4th ed.). (2004). Boston: Houghton Mifflin.
- Anderson, R. C., & Nagy, W. E. (1992). The vocabulary conundrum. *American Educator*, 16, 14–18, 44–47.
- Baumann, J. F., & Graves, M. F. (2010). What is academic vocabulary? *Journal of Adolescent and Adult Literacy*, 54(1), 4–12.
- Baumann, J. F., & Kame'enui, E. J. (1991). Research on vocabulary instruction: Ode to Voltaire. In J. Flood, J. M. Jensen, D. Lapp, & J. R. Squire (Eds.), *Handbook on teaching the English language arts* (pp. 604–632). Mahwah, NJ: Erlbaum.
- Baumann, J. F., Kame'enui, E. J., & Ash, G. W. (2003). Research on vocabulary instruction: Voltaire redux. In J. Flood, D. Lapp, J. Squire, & J. Jensen (Eds.), *Handbook on teaching the English language arts* (2nd ed., pp. 782–785). Mahwah, NJ: Erlbaum.
- Beck, I. L., McKeown, M. G., & Kucan, L. (2002). *Bringing words to life: Robust vocabulary instruction*. New York: Guilford Press.
- Blachowicz, C. L. Z. (1986). Making connections: Alternatives to the vocabulary notebook. *Journal of Reading*, 29, 643–649.

- Butler, S. (1912). *The notebooks of Samuel Butler*. Transcribed by D. Price (2002) from the 1912 A. C. Fifield edition, from Volume 14, "Higgledy-Piggledy—Definitions." Retrieved March 19, 2011, from [www.blackmask.com](http://www.blackmask.com).
- Coxhead, A. (2000). A new academic word list. *TESOL Quarterly*, 34(2), 213–238.
- Cronbach, L. J. (1942). An analysis of techniques for diagnostic vocabulary testing. *Journal of Educational Research*, 36, 206–217.
- Dale, E. (1965). Vocabulary measurement: Techniques and major findings. *Elementary English*, 42, 82–88.
- Deese, J. (1967). Meaning and change of meaning. *American Psychologist*, 22, 641–651.
- Faulkner, J. (2010). Innovative writing instruction: Reducing vocabulary to increase vocabulary: Student-centered vocabulary instruction for writing that makes a difference. *English Journal*, 100(1), 113–116.
- Fisher, D., & Frey, N. (2008). *Word wise and content rich: Five essential steps to teaching academic vocabulary*. Portsmouth, NH: Heinemann.
- Flanigan, K., & Greenwood, S. C. (2007). Effective content vocabulary instruction in the middle: Matching students, purposes, words, and strategies. *Journal of Adolescent and Adult Literacy*, 51(3), 226–238.
- Fray, D. A., Frederick, W. C., & Klausmeier, H. J. (1969). *A schema for testing the level of concept mastery* (Working Paper No. 16). Madison, WI: Wisconsin Research and Development Center for Cognitive Learning.
- Freebody, P., & Anderson, R. C. (1983). Effects of vocabulary difficulty, text cohesion, and schema availability on reading comprehension. *Reading Research Quarterly*, 18, 277–294.
- Frey, N., & Fisher, D. B. (2006). *Language arts workshop: Purposeful reading and writing instruction*. Upper Saddle River, NJ: Pearson.
- Ganske, K. (2006). *Word sorts and more: Sound, pattern, and meaning explorations K–3*. New York: Guilford Press.
- Ganske, K. (2008). *Mindful of words: Spelling and vocabulary explorations 4–8*. New York: Guilford Press.
- Graves, M. F. (2000). A vocabulary program to complement and bolster a middle-grade comprehension program. In B. M. Taylor, M. F. Graves, & P. van den Broek (Eds.), *Reading for meaning: Fostering comprehension in the middle grades* (pp. 116–135). New York: Teachers College Press.
- Graves, M. F. (2004). Teaching prefixes: As good as it gets? In J. F. Baumann & E. J. Kame'enui (Eds.), *Vocabulary instruction: Research to practice* (pp. 81–99). New York: Guilford Press.
- Heimlich, J. E., & Pittleman, S. D. (1986). *Semantic mapping: Classroom applications*. Newark, DE: International Reading Association.
- Hiebert, E. H., & Ceruetti, G. N. (2011). *What differences in narrative and informational texts mean for the learning and instruction of vocabulary* (Reading Research Report 11.01). Santa Cruz, CA: TextProject.
- Hiebert, E. H., & Lubliner, S. (2008). The nature, learning, and instruction of general academic vocabulary. In A. E. Farstrup & S. J. Samuels (Eds.), *What research has to say about vocabulary instruction* (pp. 106–129). Newark, DE: International Reading Association.

- Johnson, D., & Pearson, P. D. (1984). *Teaching reading vocabulary* (2nd ed.). New York: Holt, Rinehart, & Winston.
- Marzano, R. J., & Pickering, D. J. (2005). *Building academic vocabulary: Teacher's manual*. Alexandria, VA: Association for Supervision and Curriculum Development.
- McKeown, M. (1993). Creating definitions for young word learners. *Reading Research Quarterly*, 28, 16–33.
- Miller, G. A., & Gildea, P. (1987). How children learn words. *Scientific American*, 257(3), 94–99.
- Nagy, W. E. (1988). *Teaching vocabulary to improve reading comprehension*. Urbana, IL: Eric Clearing House on Reading Comprehension.
- Nagy, W. E., & Anderson, R. C. (1984). How many words are there in printed English? *Reading Research Quarterly*, 19(3), 304–330.
- Nagy, W. E., & Hiebert, E. H. (2011). Toward a theory of word selection. In M. L. Kamil, P. D. Pearson, E. B. Moje, & P. P. Afflerbach (Eds.), *Handbook of reading research* (Vol. IV, pp. 388–404). New York: Routledge.
- National Institute of Child Health and Human Development. (2000). *Report of the National Reading Panel: Teaching children to read*. Washington, DC: Author.
- Nist, S., & Olejnik, S. (1995). The role of context and dictionary definitions on varying levels of word knowledge. *Reading Research Quarterly*, 30, 172–193.
- Paul, P. V., & O'Rourke, J. P. (1988). Multimeaning words and reading comprehension: Implications for special education students. *Remedial and Special Education*, 9(3), 42–52.
- Petty, W., Herald, C., & Stoll, E. (1967). *The state of knowledge about the teaching of vocabulary*. Urbana, IL: National Council of Teachers of English.
- Snow, C. E. (2010). Academic language and the challenge of reading for learning about science. *Science*, 328, 450–452.
- Stahl, N. A., Brozo, W. G., & Simpson, M. I. (1987). Developing college vocabulary: A content analysis of instructional materials. *Reading, Research, and Instruction*, 26, 201–221.
- Stahl, S. A., & Fairbanks, M. M. (1986). The effects of vocabulary instruction: A model-based meta-analysis. *Review of Educational Research*, 56(1), 72–110.
- Stahl, S. A., & Vancil, S. (1986). Discussion is what makes semantic maps work in vocabulary instruction. *Reading Teacher*, 40, 62–69.
- Strickland, D. S., Ganske, K., & Monroe, J. K. (2004). *Supporting struggling readers and writers: Strategies for classroom intervention 3–6*. Portsmouth, ME: Stenhouse.
- Taba, H. (1967). *Teacher's handbook for elementary school social studies*. Reading, MA: Little, Brown.
- Townsend, D. (2009). Building academic vocabulary in after-school settings: Games for growth with middle-school English-language learners. *Journal of Adolescent and Adult Literacy*, 53(3), 242–251.