50 Strategies for Building Content Area Vocabulary

Introduction

"Words are vehicles that can transport us from the drab sands to the dazzling stars."

--M. Robert Syme

The more words your students know, and the better they know them, the greater the range of their travels. This introduction argues the importance of content area vocabulary knowledge, explores the complexities of vocabulary development, presents principles of effective vocabulary instruction, lays out the framework of this text, and gives guidelines for selecting content area target terms.

Why Content Area Vocabulary?

Whether you teach students in an elementary classroom, a middle or junior high school, or a high school, you have the critical job of helping them learn a multitude of important ideas about the world and the human experience through the windows of your content areas. Each content area—from the arts to zoology—has vital contributions to the development of well educated individuals, and content mastery entails students learning hundreds of new words. A successful theater performance, for example, depends on students knowing and effectively using specialized meanings for words such as *block, strike,* and *cheat*. The solution of a calculus problem depends on students applying terms such as *central limit theory, derivative*, and *integrand*. A delicious soufflé prepared in cooking class rests on students' accurate demonstration of terms such as *whip*, *fold,* and *separate*.

Clearly, content area achievement depends closely on students' mastery of specialized vocabulary. Vocabulary knowledge is important for a number of reasons. First, it is highly correlated with comprehension (Anderson & Freebody, 1981). In most content areas, students are expected to be effective consumers of textbooks and other print sources that contain a large number of specialized terms. Students' knowledge of these words affects how well they are able to learn new concepts and make connections to what they already know.

Second, many of the words students encounter have high utility in that they represent complex concepts that serve as building blocks to other learning. For example, in biology a thorough understanding of the term *respiratory system* requires more than having a definition for the term. It also requires knowledge of the process of respiration and the biological contexts in which it might appear. Instruction that helps students learn high utility terms such as *respiratory system* and the ways in which they link to other related words enhances students' conceptual understanding and makes it more likely that students will apply what they know to subsequent learning (Nagy & Scott, 2000).

Finally, every content area has words that are part of the discipline's academic discourse. These words are a part of a complex integrated network of knowledge that mature learners develop for the discipline. Being a member of that discourse community requires being able to communicate effectively both orally and in print using the words that signify membership. In the case of content area achievement, *word* knowledge is power.

<u>The Complexity of Vocabulary Learning: The Tough Job Ahead</u>

Content area vocabulary development is a tough job for students and teachers alike. English has a huge number of words—many more than languages like German, French, and Spanish. Some estimate that children typically learn 3000 words each year between 1st and 12th grade (Nagy & Anderson, 1984). Clearly a substantial amount of that learning occurs not through instruction, but through oral language and wide reading (Nagy, Herman, & Anderson, 1985; Stahl, 1999). However, because of the heavy concept load and a structure that many students find difficult, students are *only half* as likely to learn words from reading content area texts as they are from other types of texts such as narratives (Anderson & Nagy, 1992). So it is unlikely that many students will acquire the essential vocabulary necessary for school success without their teachers' help and solid instruction.

Another complexity of vocabulary learning is understanding what it means *to know* a word. Knowing a word is not an all or nothing proposition. Students' knowledge of a word can range from recognizing a word to being able to give a definition of it and understanding how it is related to other information on the same topic (Nagy & Scott, 2000). For example one student in a geometry class may recognize that he or she has seen the word *radiu*s before but not know what it means. Another student may be able to give a definition for *radius* but not know how to compute the radius of a circle. Even students who have demonstrate a good understanding of *radius* in geometry may need to develop a new meaning for it when they encounter it in a different content area such as the study of human anatomy in biology.

In addition, the vocabulary instruction that you provide will vary depending on the level of understanding that is required of the term, its importance to the topic, the background of your students, and the instructional task your students are engaged in (Blachowicz & Fisher, 2000). For example, in a government class, students might encounter this sentence: *One of the major responsibilities of any state is to make and administer laws and to punish people for infractions of those laws*. Consider the words *infractions* and *state* in this sentence. To support students' understanding, it may be sufficient for you to give a synonym for the word *infractions*. The majority of students have sufficient background knowledge to understand an infraction if told that it refers to breaking or not obeying laws. And, most likely, it is not necessary for students to remember the term *infractions* because it is not strongly related to the topic. On the other hand, the word *state* is a core concept in the study of government. Students will need to develop a specialized definition for it, remember its meaning, learn its major attributes, and explain how *state* relates to other words in the same category. It is unlikely that students will develop this rich level of understanding without your careful attention.

Additionally, a large percentage of U.S. students experience financial hardship, and that number is on the rise (Douglas-Hall & Chau, 2007). Recently, one-third of U.S students were eligible for free or reduced-price meals (NCES, 2006), and 16% lived in poverty (NCES, 2007). Students who experience poverty have reduced access to resources and experiences that foster the development academic language (Marzano, 2004). Some estimate that, by age 4, children who experience poverty may have been exposed to 30 million fewer words than children from more economically advantaged homes and begin school with smaller vocabularies than their economically advantaged counterparts (Hart & Risley, 1995). Worse yet, because background knowledge predicts achievement, students who come to us knowing fewer words are less likely to learn new words (Baker, Simmons, & Kame'enui, 1997). Thus, the gap in vocabulary knowledge can persist through high school (Hart & Risley, 1995).

We also teach high numbers of English learners (approximately 10% of our K-12 population nationwide, with many states having higher rates; NCES, 2006). English learners work double duty to acquire English (with its huge lexicon) while simultaneously studying our content areas and their myriad of specialized terms. Specialized terms in the content areas often have specific meanings in one content area that do not generalize to other subjects. And the meanings often differ from the general meanings of the same terms. Perhaps it is for these reasons that the achievement gap found between English learners and native English speakers is largely a vocabulary gap, according to Carlo and colleagues (Carlo, et al., 2004).

As a result of these factors, our responsibility to help students learn content area vocabulary terms—and strategies for learning words independently—looms large. This responsibility must be carried out teacher by teacher, content by content, and classroom by classroom so that students have control over large stores of specialized vocabulary terms and can use the terms powerfully to accomplish their purposes.

Vocabulary Instruction: What *Doesn't* Work, and What *Does*

Current classroom practices and plentiful research provide insights into both what *doesn't* work for vocabulary development…and what *does*.

What *doesn't* work for content area vocabulary development. It's clear that schools can—and do—make a difference in students' vocabulary development (Marzano, 2004). Unfortunately, because time is short and lists of words to mastered are long, a number of instructional practices that don't work well in fostering vocabulary knowledge seem to seep into classrooms. What *doesn't* work in vocabulary development is to confine instruction to students copying dictionary definitions. Definitions often offer *more* unknown words to define the unfamiliar target term. What *doesn't* work in vocabulary development is to give skimpy definitions of numerous words one day and then develop related concepts the next. Definitions have little meaning if students have limited conceptual knowledge from which to draw, and conceptual knowledge develops over time and in context. What *doesn't* work in vocabulary development is to photocopy and distribute a lengthy list of new words on Monday and then give the test on Friday. By doing so, students often develop sparse word knowledge, and the teacher abdicates responsibility for helping students learn words deeply. Fortunately, the research on what *does* work in vocabulary instruction is clear.

What works: Four principles for vocabulary development. The research in vocabulary learning indicates that to be effective, word learning needs to be integrated into the class curriculum so that it becomes an intentional part of instruction. We offer four research-based principles that have wide applicability. You can use these principles as a guide to spur your effective vocabulary development program, and you can see these principles come to life in the 50 strategies found in this text.

Principle 1: Provide a learning environment that is rich in oral and written language (Nagy, 2005).

To learn content vocabulary, students need to be immersed in words (Alvermann, Swafford, & Montero, 2004). In a language rich environment, students engage in word learning both incidentally and intentionally, and word learning is part of the fabric of the classroom (Blachowitz & Fisher, 2006). Figure 1.1 summarizes tips for creating a language-rich environment.

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Much of our general vocabulary knowledge is developed through incidental encounters with language. For example, wide reading of narratives (stories and personal accounts) has been shown to be a major source of incidental word learning for students of all ages. In a summary of their work, Anderson and Nagy (1992) concluded that if students are given texts that they can comprehend, they will learn approximately one word for every 20 unfamiliar words they meet. Because the average fifth grader reads approximately one million words a year, with 20,000 or so of them being unfamiliar, we can expect that students will learn 1,000 words simply through their independent readings. As you might expect, students who read more experience substantially higher gains in both vocabulary growth and world knowledge than their peers who read less (Stanovich & Cunningham, 1993).

Reading to students from challenging texts is another important source of vocabulary knowledge (Stahl, 2005). Challenging texts can be narrative or informational but are generally too difficult for students to read on their own. Thus, they contain words and require world knowledge that it is unlikely students would encounter independently. When teachers engage in read alouds systematically and provide opportunities for discussion of important vocabulary and ideas, they provide students with an important source of new word and world knowledge.

Language rich classrooms also provide many opportunities for teacher-led and student-led discussions. Vocabulary instruction that makes use of discussion is more likely to result in the deep, rich understandings of terms needed for school success. Discussions help students activate their prior knowledge and make connections between what they know and what they are learning (Stahl & Clark, 1987). It also allows them to pool their knowledge, to challenge and refine their understandings, to deeply process words and word meanings, and to practice words in a variety of contexts. According to Nagy (1988), opportunity for meaningful use of new terms is an essential component of effective vocabulary learning. In sum, student interaction, including content-driven discourse, fuels students' academic success.

Language-rich classrooms also include many kinds of printed materials and virtual text. Magazines, newspapers, signs, poetry, reference works, primary sources, student writings, bulletin boards, murals, computer software, and the Internet all can provide text in the language-rich environment. Texts can provide additional exposures to terms introduced initially through teacher talk and classroom discussion. They can serve to extend firsthand experiences, providing opportunities for instruction and discussion of new and related terms that deepen students' knowledge and understanding (Spencer & Guillaume, 2006). They can provide opportunities to meet words in other situations, serve as a source for new and interesting terms, and provide reference resources for students to discover word meanings. Finally, student-written texts provide opportunities for sharing new words, exploring their uses, and applying them in personally relevant ways. In sum, a language-rich learning environment immerses students in contexts for speaking, hearing, reading, and writing the language of our disciplines.

Principle 2. Use different methods to teach different words (Stahl, 2005).

Different kinds of words present different demands and thus require that you employ a range of instructional approaches. Note that each approach requires students to be actively engaged in word learning (Alvermann, Swafford, & Montero, 2004). At times, a <u>definitional approach</u> is appropriate. One way of using this approach is for you to provide a quick definition or a synonym for unknown words either before or during reading. This approach works best when the unknown words are relatively unimportant to the topic or are words students will rarely encounter. Another variation of the <u>definitional approach</u> requires that students look up terms in a dictionary, often copying their definitions and engaging in related activities such as writing the terms in sentences. This approach is useful when students already have some background knowledge about the topic in which the words appear. Dictionaries present specific, succinct, and useful information about a word, and it gives clues about related words and contexts of use. Thus looking words up in a dictionary can help students understand the meaning of new words and how they are related to what they already know. However, using the definitional approach alone is likely to result in superficial word knowledge because it is unlikely that the definitions will be well integrated into what students already know (Nagy, 1988). Therefore, it is most useful when students require only limited information about a word.

In the <u>contextual approach</u>, students learn to infer word meanings by studying the contexts in which the words are used. They examine the surrounding sentences (and related graphics) to check the clues related to meaning and part of speech of the target terms. This approach provides more information than does the definitional approach about how words are used, but it has other drawbacks. Factors such as text density and student ability affect students' success in learning from context (Swanborn & de Glopper, 1999). Another drawback is that the context clues may provide only partial—or even misleading—information about the term.

The concept development approach is most appropriate when students have limited grasp of the concept or concepts underlying the term. In this approach, instruction focuses on the development of concepts and on making rich connections to what students already know. Many concepts are abstract and take considerable time to form. Techniques such as inquiry, hands-on learning, and class discussions, are useful in building deep understandings of concepts. Later, instruction can easily help students attach labels—vocabulary terms—to those concepts.

Another important approach focuses on building students' word awareness (Blachowicz & Fisher, 2004; Scott & Nagy, 2004). This approach seeks to build students' curiosity and interest in words by creating a classroom environment in which words are valued. One way to promote word awareness is to model your own curiosity and passion for words. You can bring in appealing words to share with your students and invite them to bring in interesting words they find in their reading, conversations, or everyday lives. You can provide opportunities for favorite words to be displayed, discussed, and used in writing and word play activities. Students' interest in words can also be sparked and expanded through the exploration of word histories and word parts. Clearly, an effective vocabulary program involves important approaches include All are addressed by the 50 strategies found herein.

Principle 3. Provide many exposures to words and many opportunities to use the words.

Estimates of the exposures necessary to learn a word vary from 6 to 20. It is only through repeated exposure that students can meet words in different settings, define them, come to understand their shades of meaning, and to appreciate their multiple meanings. Because our understandings of terms are gradually shaped over time, repeated exposures are essential.

Additionally, practice is an essential component of word learning. Nagy (1988) urges that practice opportunities be meaningful, that is, that they match the contexts and demands under which they will use the words once they become part of students' writing and speaking lexicons. Students should be encouraged to represent their knowledge of words in linguistic and nonlinguistic ways. In terms of linguistic representations, the strategies in this book provide for both oral and written contexts of use. Oral practice is encouraged through increased social interaction such as partner and small group discussions and dramatic presentations using target terms. Peer-peer discourse-based conversations are especially important for English learners as they provide increased opportunities to talk, particularly in lower-risk settings. Students' spontaneous use of target terms in their writing may be the true test of deep and rich word knowledge. Strategies in this text include a variety of opportunities to use target terms in their writing. Examples include scripts, poems, and multimedia reports. In terms of nonlinguistic representations, through 50 strategies, students are encouraged to use graphic organizers, sketches, and re-enactments of terms.

Principle 4: Help students become independent word learners by fostering motivation and teaching metacognitive skills and vocabulary strategies.

Perhaps our ultimate goal as educators is to provide students with the spark and skills necessary to pursue learning far outside and long after classroom instruction. The ultimate measure of success of vocabulary instruction may indeed be that students possess the wherewithal to (Baker & Brown, 1984; National Research Council, 2000):

- Set their own goals and ask questions

- Monitor their own thinking
- Change their behavior when something goes wrong
- Continue to learn new vocabulary

In order to be successful, independent vocabulary learners, students need to develop the skills necessary to: (1) monitor their word knowledge by being aware of the varying depth of knowledge they have for terms; (2) know how to find and use resources to enrich and clarify their knowledge when needed; and (3) to reflect on changes in understanding as their word knowledge grows. Teachers can support growth in students' metacognitive skills by providing explicit instruction and modeling, such as in the think-aloud technique, and by providing opportunities for students to use and refine their metacognitive skills. Strategies in this text are meant to encourage a love for language, words, and the power of word knowledge as well as the skills students to monitor and improve their learning. Figure 1.2 summarizes the four research-based principles of vocabulary development, principles which firmly underlay our framework for vocabulary development.

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<u>Our Framework for Vocabulary Development</u>

How can research-based principles for vocabulary instruction drive our daily instruction? This text embeds principles of instruction into an instructional sequence that ensures a language-rich environment; builds interest and motivation; provides many opportunities for students to see, hear, explore, and use words; and employs a wide variety of strategies to help students learn words. The instructional sequence has three straightforward phases that build teacher guidance into students' arduous yet compelling task of content area vocabulary development:

1. Preparing to learn words
2. Building word knowledge
3. Applying word knowledge

Preparing to learn words. Any new word—or new meanings of a word—that students learn must find a place in the mental networks of concepts and terms they already hold. Additionally, without sufficient motivation or interest, students are unlikely to devote themselves fully to the important task of learning new words. Thus, the *preparing to learn words phase* serves a few important purposes.

First, in some instances, the phase must be used to build concepts to lay a foundation for word knowledge. Because it is much easier to learn a term when the concept is in place, students may need firsthand experiences with events or objects to successfully learn the labels for those phenomena (Spencer & Guillaume, 2006). The richer and more varied students' experience related to particular concepts, the more finely detailed and precise their understandings of related terms can be expected to be. First-hand experiences provide a bank of concepts that become students' vocabulary store.

Second, the *preparing to learn words* phase brings students' prior knowledge to the surface, including their potential misconceptions, and thus provides teacher guidance to the process of conceptual change. Effective vocabulary instruction requires the integration of the new and the known (Christen & Murphy, 1991). Third, the *preparing to learn word phase* draws out students' language related to the topic and, because students are likely to have different amounts and kinds of background experience, builds a common store of classroom language and ideas related to the topic. Finally, the phase sparks interest and builds motivation to learn words. Often the *preparing to learn words* phase piques students' curiosity and fuels questions about words and ideas that stoke their energy to build word knowledge.

Sample activities that occur during the *preparing to learn words* phase include hand-on activities, sketches, predictions, exploratory conversations, and the beginnings of graphic organizers.

Building word knowledge. With concepts budding, prior knowledge at the surface, and interest piqued, the *building word knowledge* phase helps students to learn meanings (or specialized meanings), for vocabulary terms. It builds nuances and understandings of appropriate contexts for word use. During *building word knowledge*, students connect new concepts to known concepts, address misunderstandings, structure their understanding of word networks, and develop rich word meanings. Rather than focusing on memorizing definitions, *building word knowledge* strategies in this text help students analyze word parts, examine word histories, learn definitions deeply, and examine related words within a language-rich environment. Additionally, activities that occur during the *building word knowledge* phase help students gain skills they will need as independent word learners.

Applying word knowledge. Strategies in the *applying word knowledge* phase address the importance of multiple exposures and opportunities for students to use newly acquired terms. By providing a variety of contexts for use, the *applying word knowledge* phase helps sustain a language-rich environment—through discussion, reading, and writing—and provides occasions for further exploration and use of target terms. This phase also supports student interest and motivation by providing realistic contexts to experiment with words. During the applying word knowledge phase, students may (for example) write poetry, compose reports, or engage in theatrical performances.

Independent word learning. It is impossible to provide instruction on every term students must master. Because the ultimate goal of vocabulary instruction is for students to become ardent word sleuths—independent word learners—outside the classroom and in the future, this text also includes strategies that help students tackle content words on their own. *Independent* *word learning* teaches students to use strategies such as context, definitions, morphemic analysis, word histories, and analogies to further their own word learning.

Selecting Target Terms for Vocabulary Development

Given the clear relationship between vocabulary knowledge and student achievement, it's tempting to develop long lists of terms to be mastered. In fact, most teachers do select more words than their students can effectively learn. A more effective approach is to select a smaller set of terms and to teach them well. With all the terms that flood textbooks, how can you select the most promising for instruction? Instruction should focus on terms that have a high probability of enhancing academic success. Beck, McKeown, and Kucan (2002) argue that the selection of vocabulary terms is somewhat arbitrary and that teachers should feel free to use their professional judgment in selecting promising target terms. We suggest the following six guidelines to narrow down your list of potential target terms.

1. Select the terms that students don't know. Entry level and ongoing assessment of students' vocabulary knowledge is important. Also, as you narrow your list, you may wish to delete words that students can easily discern from context or using their knowledge of word parts.
2. Select the terms that are important for conceptual understanding. Of the dozens of words suggested in the chapter or unit, it may be that only four or five are truly important for students' understanding of the content. These words might represent critical concepts or might help students develop more precise understandings of related important ideas. A couple sources of information can help you judge terms' importance for conceptual understanding. First, your expertise in the subject matter can provide a strong sense of direction, particularly if you are an experienced teacher and a content expert. Second, your state content standards can provide guidance. Compare your text and other instructional materials to your

standards and ensure that they coincide in the priority they place on terms. Consider forgoing the terms that get less emphasis in your state. National content standards can also be consulted as another source of evidence about terms that support critical ideas in your content standards.

3. Select the terms that are used repeatedly. There are some terms that students may encounter so frequently that a little instruction can provide lots of mileage. To select high utility terms, take another look at your text materials and at your standards. This time examine not just the current unit but the entire text. As you examine your content standards, look up and down the grade levels and across related courses and select words that students will meet again.

   You may wish, too, to consult your high-stakes assessment documents and peruse test specifications to ensure that your class has opportunities to learn the terms that may play into their success on these measures. The National Assessment of Educational Progress (NAEP) and some states post released test items on the Web. Check out NAEP items at nces.ed.gov/nationsreportcard/. As a caveat, although it is important to provide access to terms included in high stakes measures, it is equally important not to confine instruction to the terms found on tests.

4. Select terms that may be difficult for students. Many terms, such as those that represent concepts with which students have extensive experience or that have concrete referents, are relatively easy to learn. For example, many four-year-olds easily recite with meaning dozens of cumbersome names for dinosaurs. Such terms need not be the focus of instruction. Instead, terms that represent abstract concepts, are confusing, or have multiple meanings may instead deserve your instructional intention.

5. <u>Select terms that are likely to foster students' ability to learn other words</u>. If working with a particular term is likely to improve students' ability to analyze context, use reference materials, or develop analogies, for example, the term may deserve to be included on your list of target terms.
6. <u>Consider differentiating word selections</u>. After identifying the terms that *everybody* should master, consider attending to words that *some people* may, additionally, learn. Although they are available to all, these "some people" words may be self-selected by students with particular interests in the topic, out-of-school goals or experiences related to the terms, or a special love of words and word learning.

Applying these guidelines to vocabulary instruction will clearly require advance planning on your part. We recommend that you include target term selection as part of your long-term planning efforts. Working with colleagues to determine target terms is also a valuable practice. By thinking carefully about target terms early in the tear or semester, you increase the likelihood that your selections will build important understandings and reinforce each other. As a result, your students are likely to add greatly to their stores of word knowledge and, in the end, use words as powerful tools to understand their world. They may heed the advice of Pulitzer Prize winning author N. Scott Momaday and change the universe by believing in the power of words.

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Figure 1.1 Tips for creating a language-rich learning environment.

- Encourage wide reading of narrative text.
- Encourage wide reading of challenging text.
- Lead content-based discussions.
- Foster student-student interactions and discussion.
- Provide access to lots of print and to many kinds of print.

Figure 1.2 Four research-based principles for content vocabulary development.

1. Provide a learning environment that is rich in oral and written language.
2. Use different methods to teach different words.
3. Provide many exposures to words and many opportunities to use the words.
4. Help students become independent word learners by fostering motivation and teaching metacognitive skills and vocabulary strategies.