SECTION

I

Academic Vocabulary

Developing Vocabulary for Learning in Content Areas

Words—so innocent and powerless as they are, as standing in a dictionary, how potent for good and evil, in the hands of one who knows how to combine them.

—Nathaniel Hawthorne

Turn to history to realize the significance of the word: Words have been used to cause wars; they have brought peace to warrior nations. Words have the power to persuade the most unconvincing believer. Woven into fine tapestries of artful stories, words have been known to outlive their authors. The potential of words will continue as they make their mark by those who learn to respect their power. But for those who hold little regard for words—the word will remain a powerless tool.

Successful adolescent students in content area classrooms share a common characteristic: They have rich academic vocabularies with words that serve them as potent tools for learning in content area classrooms. The purpose of Section I is to provide middle and secondary school teachers with instructional strategies and resources that will promote and strengthen their students' academic vocabularies within various disciplines of content area classrooms.

WHAT RESEARCH HAS TO SAY
ON THE DEVELOPMENT OF ACADEMIC VOCABULARY

Over the years, researchers have accumulated a body of evidence that links students' word knowledge to their academic success. They have also demonstrated to educators that key to comprehending text is the reader's knowledge of the words on the printed page. Finally, to provide teachers with tools for helping students to understand and learn from text, research offers an effective framework for teaching vocabulary in content area classrooms. Why is vocabulary instruction at the heart of learning?

VOCABULARY, READING COMPREHENSION, AND SUCCESS IN SCHOOL

Success in school is dependent on academic achievement. For students in middle and secondary schools, the textbook remains an essential tool for student learning. Without their capacity to read and understand the required texts from various disciplines, students will experience failure. The influence of students' vocabulary knowledge on their comprehension of text has been demonstrated over time through a range of studies (Anderson & Nagy, 1991; Baker, Simmons, & Kame'enui, 1998; Beck, Perfetti, & McKeown, 1982; Cunningham & Stanovich, 1998; Davis, 1944; Nagy, 1988). The strong relationship between vocabulary and comprehension is apparent to teachers who know that students who do well on vocabulary tests also do well on tests that measure their reading comprehension. This strong reciprocal relationship between students' word knowledge and their understanding of text suggests that systematic vocabulary instruction is critical to students' understanding and learning from content area texts. However logical this appears, it is not always the case (Snow, 2002).

Why is academic vocabulary crucial to comprehension? In primary grades, children's vocabularies grow rapidly. Snow, Griffin, and Burns (2005) explained that young children having a "less extensive vocabulary may not have problems, but by the end of Grade 3, vocabulary limits take a toll on reading comprehension" (p. 30). As students move up into the intermediate grades, instruction shifts from an emphasis on literacy to science, mathematics, and social studies. Students are now expected to read and learn from textbooks replete with "content heavy" words. The transition from reading stories or narrative text in the primary grades to reading content area texts in the intermediate grades has created challenges for many students. Their drop in achievement levels is referred to as the "fourth-grade slump." Students' problems related to reading and learning from content area texts are at least in part associated with the spiraling number of unfamiliar concepts and words they must learn on a daily basis. Teachers are reminded that to help students build strong academic vocabularies that produce positive effects on their "comprehension, learners need to actively work with new words" (Beck, McKeown, & Kucan, 2008, p. 4).

Graves (2007) emphasized the fundamental and decisive role that vocabulary plays in schooling for all students including English language learners (ELL): "Learning English vocabulary is one of the most crucial tasks for English learners" (p. 13), for without knowledge of words specific to the domain, they may experience school failure. Success of ELL students is often predicted by their English vocabulary, even though they may have large vocabularies in their native language (Garcia, 1991). Clearly, students with limited vocabularies are likely to experience low achievement levels, not only in literacy, but in content area studies as well.

Word Learning

There are some of us who think that the process of learning all words is the same. This is not the case. Nagy and Scott (2000) explained the complexity of word knowledge. They demonstrated that most words are learned in stages. Words are different: Some words are learned quickly; others take a longer time; some have multiple meanings and are confusing; others are low-frequency words that we do not use or hear often; some words have many associations with other words, while others do not and are difficult to understand. As students progress through the grades, they must learn a wide range of words, with varying levels of complexity. Within the middle and secondary grades, the words have a greater level of difficulty. Many of these are specialized words associated with content learning and referred to as academic vocabulary.

Defining Academic Vocabulary

Our academic vocabularies consist of words that are quite different from those words we learned from our everyday interactions through recreational reading, watching movies and television, or just going about our daily work. Academic vocabulary refers to the words associated with the content knowledge. Within every discipline there is a specific set of words to represent its concepts and processes. These words are conceptually more complex than everyday language; therefore, they are more difficult to learn. A student's depth of word knowledge within a discipline, or academic vocabulary, relates to success in that subject (National Institute for Literacy, 2007). To learn specialized words, such as the vocabulary of science, students must know the content associated with the word (Armbruster, 1992; Graves & Penn, 1986).

Developing academic vocabularies that support content learning is no easy task. Bravo and Cervetti (2008) noted that the number of new terms or specialized words presented in textbooks is staggering, citing research where students were required to learn at least 3,500 new vocabulary words to comprehend their science book. Consider young adolescent students as they move to the middle and then advance to secondary grades. The vocabulary demands dramatically increase as students are required to read and learn from a wide range of content area textbooks. Such demands require constant growth in their academic vocabularies. To help adolescent students, content area teachers are called on to teach the vocabularies of their disciplines.
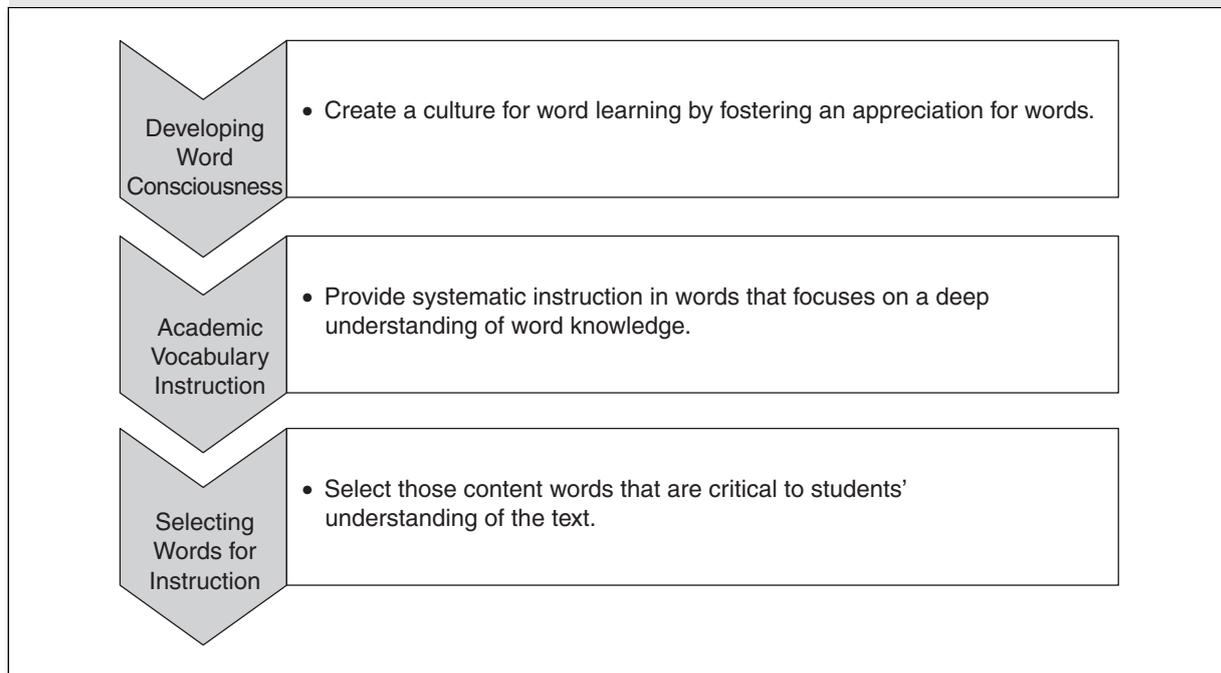
Teaching Academic Vocabulary

Knowing that words and learning words are quite different and that students are required to develop robust academic vocabularies for achieving in content areas, which words should teachers select for instruction? Beck et al. (2008) provided a word classification system for targeting words for effective teaching and learning. Their three-category system for words include the following: *Tier 1* words are those words that are in the spoken or oral language vocabularies of students or everyday language; *Tier 2* words are the "words that characterize written text—but are not so common in everyday language" (p. 7); and *Tier 3* words are described as more abstract in nature. To help students comprehend content area readings, it is important that the teacher selects the words that represent the concepts that are fundamental to understanding the text for instruction. Students would benefit most from direct instruction in Tier 2 words because they are essential to understanding and remembering the text.

A Framework for Teaching Academic Vocabulary to Adolescent Learners

Clearly, research has emphasized the role that vocabulary plays in understanding text and the need for teachers to teach academic vocabulary to all students. Although there is no quick fix or one magic approach in developing students' word knowledge, research does provide a framework that teachers may use for designing and implementing an effective vocabulary program within their classrooms. Fundamental principles of successful vocabulary programs are based on current research and include the following:

1. Provide systematic vocabulary instruction for all grades across the curriculum (Blachowicz, Fisher, Ogle, & Watts-Taffe, 2006; Manzo, Manzo, & Thomas, 2009).

2. Ensure that vocabulary instruction include the following: (a) frequent, varied, and extensive language experiences that offer opportunities for wide reading; (b) individual word instruction; (c) word-learning strategy instruction; and (d) the development of word consciousness (Graves, 2007, pp. 14–15).

3. Design vocabulary instruction that fosters a deep understanding of the words through instructional activities, reading selections, and goals that are tailored to the learners' needs (Watts & Graves, 1997).

4. Select content words for instruction that lead to students' understanding of the text (Beck et al., 2008; Gerston & Baker, 2000).

Tips on Teaching Academic Vocabulary

Developing Word Consciousness	• Create a culture for word learning by fostering an appreciation for words.
Academic Vocabulary Instruction	• Provide systematic instruction in words that focuses on a deep understanding of word knowledge.
Selecting Words for Instruction	• Select those content words that are critical to students' understanding of the text.

A Strategy for Assessing the Development of Academic Vocabulary

Assessment and evaluation of students' academic vocabulary is an integral part of teaching and student learning. Teachers in high-performance schools use the results of testing to adjust

their instruction to improve student achievement (Langer, 2000). Moore and Hinchman (2006) have described how classroom assessment for adolescent learners can be effective in improving their achievement. Briefly, classroom assessment that supports student learning is ongoing, cyclical, focused, and involves students through self-assessment (pp. 154–155).

Classroom assessment that provides information to the teacher and students on their developing academic vocabulary is a valuable tool for the teacher in designing appropriate instruction and for the students in monitoring their own learning. The purpose of the rubric shown in Figure I.1, Rubric for Assessing Academic Vocabulary Development, is to guide teachers in their evaluation of students' development in word knowledge, word-learning strategies, and word consciousness as well as their use of academic vocabulary in comprehending text, classroom discussions, and assigned writing tasks. Teachers may use the form Figure I.2, Monitoring Academic Vocabulary Throughout the School Year throughout the school year to record each student's progress for the purpose of targeting students' special needs for additional help.

Figure I.1	Rubric for Assessing Academic Vocabulary Development			
Criteria	*Beginning* *(0–1 Point)*	*Developing* *(2 Points)*	*Proficient* *(3 Points)*	*Exemplary* *(4 Points)*
Word knowledge of content words	Demonstrates limited or no knowledge of content words and is unable to offer simple definitions	Provides simple definitions of content words; does not provide examples or nonexamples of the word	Provides complete definitions of content words and offers examples and nonexamples; is able to make some association to related words	Provides extensive definitions of content words with numerous examples and nonexamples; offers many associations to other related words; is able to compare and contrast content words through specific features of the words
Word learning strategies	Does not use context clues to determine unknown words	Attempts to use context clues to determine unknown words	Uses context clues with success to determine unknown words	Uses context clues with a high degree of success along with references to determine unknown words
Use of academic vocabulary to comprehend text	Demonstrates difficulty in comprehending text due to a lack of knowledge of content words	Comprehends most of the text as a result of some knowledge of content words	Comprehends the text as a result of knowledge of content words	Comprehends the text and makes reference to many of the content words in responding to the readings
Use of academic vocabulary in discussions	Rarely uses content words in class discussions	Uses some content words, often with a low to average degree of accuracy during class discussions	Uses a large number of content words with a moderate degree of accuracy during class discussions	Uses an extensive number of content words with a high degree of accuracy during class discussions
Use of academic vocabulary in writing assignments	Rarely uses content words in writing assignments	Uses some content words, often with a low to average degree of accuracy in writing assignments	Uses a large number of content words with a moderate degree of accuracy in writing assignments	Uses an extensive number of content words with a high degree of accuracy in writing assignments
Word consciousness	Does not demonstrate an interest in important or unusual words	Demonstrates some interest in important and unusual words	Demonstrates an interest in important and unusual words by recording them in a personal dictionary	Demonstrates a high interest in important and unusual words; looks up their meaning, and records them in a personal dictionary

Figure I.2	Monitoring Academic Vocabulary Throughout the School Year

STUDENT'S NAME _____ SCHOOL YEAR: _____ to _____

SUBJECT: _____ TEXT: _____

TEACHER: _____ PERIOD: _____ ROOM: _____

	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	COMMENTS
Word knowledge of content words										
Word learning strategies										
Use of academic vocabulary to comprehend text										
Use of academic vocabulary in discussions										
Use of academic vocabulary in writing tasks										
Word consciousness										

Directions: Using the rubric, monitor the student's development of academic vocabulary on each criterion with a rating of 1 to 4, noting changes in the student's growth. Use performance-based information of the student's progress to adjust instruction and practice in academic vocabulary.

Involving adolescent students in their own learning can be especially beneficial to their development. Shown in Figure I.3 is a Self-Assessment Scale of Academic Vocabulary that students may use to keep in touch with their own learning. Self-assessments become powerful tools for student growth when the teacher and student work together to set realistic goals for progress based on one's learning. Working with individual students, effective teachers focus on one or two areas at a time to help students.

Figure I.3	Self-Assessment of Learning Academic Vocabulary

HIGHEST PERFORMANCE	5	4	3	2	1	0	LOWEST PERFORMANCE
HOW CAN I IMPROVE?							
Directions: Think about your performance in learning new words and using them. For each item, rate how well you do. A rating of 5 indicates the highest performance and a rating of 0 shows the lowest performance. Then think about ways you might improve your performance, and write one way that you can increase your word knowledge in each of the areas.							
LEARNING NEW CONTENT WORDS *Highest Performance*	*5*	*4*	*3*	*2*	*1*	*0*	*LEARNING NEW CONTENT WORDS* *Lowest Performance*
I have learned many new words and know their meanings very well.	**To improve, I will . . .**						I heard some new words and do not know their meanings.
LEARNING WORDS ON MY OWN	5	4	3	2	1	0	*LEARNING WORDS ON MY OWN*
When I come to a word in my textbook that I do not know, I try to get at the meaning of the word by using clues from the words around it and by how it is used in the sentence. Then I look it up when I am finished reading.	**To improve, I will . . .**						When I come to a new word in my textbook that I do not know, I skip it and continue reading. Eventually, I forget the word.
USING WORD KNOWLEDGE IN READING	5	4	3	2	1	0	*USING WORD KNOWLEDGE IN READING*
When I am reading my science text and come to a new word we just learned in class, I think about the meaning of the word to understand the readings in the text.	**To improve, I will . . .**						When I am reading my text and come to a new word that we have learned in class, I do not think about the meaning to understand the text.
USING WORD KNOWLEDGE IN DISCUSSIONS	5	4	3	2	1	0	*USING WORD KNOWLEDGE IN DISCUSSIONS*
I try to use words that I have learned in class discussions.	**To improve, I will . . .**						I do not attempt to use words that I have learned in class discussions.
USING WORD KNOWLEDGE IN WRITING	5	4	3	2	1	0	*USING WORD KNOWLEDGE IN WRITING*
In my assigned writing, I try to use words that I have learned. When I am not sure about whether I have used the words correctly, I will check my dictionary or glossary within the text.	**To improve, I will . . .**						In my assigned writing, I do not try to use words that I have learned.
INCREASING MY WORD POWER	5	4	3	2	1	0	*INCREASING MY WORD POWER*
I find a genuine interest in words, words that are challenging, words that I have never heard or seen in print, words that seem strange, words that are very long or very short. I write them down, find their meaning, and will try to use them.	**To improve, I will . . .**						I have no interest in learning new words.

Reflective Practice on Teaching Academic Vocabulary

Michael Graves has spent a number of years studying and teaching about vocabulary instruction. Within his research and practice, he focused on areas for building and strengthening students' vocabulary. His powerful four-part vocabulary program (Graves, 2007) may be translated into questions to help all teachers begin to reflect on how they support student learning through developing academic vocabulary within their classrooms.

- How do I provide *rich and varied language experiences* that support learning and using vocabulary?

- Do I spend time to *teach individual words?*

- What type of *word-learning strategies* have I taught to my students to help them increase their vocabularies?

- In what ways do I develop *word consciousness?* How does the culture of my classroom show a motivation and appreciation for word learning; in what ways do I support and encourage students in making a commitment to acquiring word knowledge, and do I share my own thirst for learning new words?

Professional Resources

Allen, J. (1999). *Words, words, words: Teaching vocabulary in grades 4–12.* Portland, ME: Stenhouse.

Allen, J. (2007). *Inside words: Tools for teaching academic vocabulary, Grades 4–12.* Portland, ME: Stenhouse.

Fisher, D., & Frey, N. (2008). *Word wise and content rich: Five essential steps to teaching academic vocabulary.* Portsmouth, NH: Heinemann.

Harmon, J. M., Wood, K. D., & Hedrick, W. B. (2006). *Instruction strategies for teaching content vocabulary: Grades 4–12.* Westerville, OH: National Middle School Association and Newark, DE: International Reading Association.

Tompkins, G. E., & Blanchfield, C. (2008). *Teaching vocabulary: 50 creative strategies, Grades 6–12.* Upper Saddle River, NJ: Merrill/Prentice Hall.

References

Anderson, R. C., & Nagy, W. E. (1991). Word meanings. In R. Barr, M. L. Kamil, P. B. Mosenthal, & P. D. Pearson (Eds.), *Handbook of reading research* (Vol. 2, pp. 690–724). Hillsdale, NJ: Lawrence Erlbaum.

Armbruster, B. B. (1992). Vocabulary in content area lessons. *The Reading Teacher, 45*(7), 550–551.

Baker, S. K., Simmons, D. C., & Kame'enui, E. J. (1998). Vocabulary acquisition: Research bases. In D. C. Simmons & E. J. Kame'enui (Eds.), *What reading research tells us about children with diverse learning needs* (pp. 183–218). Mahwah, NJ: Lawrence Erlbaum.

Beck, I. L., McKeown, M. G., & Kucan, L. (2008). *Creating robust vocabulary: Frequently asked questions and extended examples.* New York: Guilford Press.

Beck, I. L., Perfetti, C.A., & McKeown, M. G. (1982). The effects of long-term vocabulary instruction on

lexical access and reading comprehension. *Journal of Educational Psychology, 74*(4), 506–521.

Blachowicz, C. L. Z., Fisher, P. J. L., Ogle, D., & Watts-Taffe, S. M. (2006). Vocabulary: Questions from the classroom. *Reading Research Quarterly, 41,* 524–539.

Bravo, M. A., & Cervetti, G. N. (2008). Teaching vocabulary through text and experience in content areas. In A. E. Farstrup & S. J. Samuels (Eds.), *What research has to say about vocabulary instruction* (pp. 130–149). Newark, DE: International Reading Association.

Cunningham, A. E., & Stanovich, K. E. (1998). What reading does for the mind. *American Educator, 22*(1 & 2), 8–15.

Davis, F. B. (1944). Fundamental factors in reading comprehension. *Psychometrika, 9,* 185–197.

Garcia, G. E. (1991). Factors influencing the English reading test performance of Spanish-speaking Hispanic children. *Reading Research Quarterly, 26,* 371–392.

Gerston, R., & Baker, S. (2000). What we know about effective instructional practices for English language learners. *Exceptional Children, 66,* 454–470.

Graves, M. F. (2007). Vocabulary instruction in the middle grades. *Voices from the Middle, 15*(1), 13–19.

Graves, M. F., & Penn, M. C. (1986). Costs and benefits of various methods of teaching vocabulary. *Journal of Reading, 29*(7), 596–602.

Langer, J. (2000). Excellence in English in middle and high school: How teachers' professional lives support student achievement. *American Educational Research Journal, 37*(2), 397–439.

Manzo, A. V., Manzo, U. C., & Thomas, M. M. (2009). *Content area literacy: A framework for reading based instruction* (5th ed.). Hoboken, NJ: Wiley.

Moore, D. W., & Hinchman, K. A. (2006). *Teaching adolescents who struggle with reading: Practical strategies.* Boston: Allyn & Bacon.

Nagy, W. E. (1988). *Teaching vocabulary to improve comprehension.* Newark, DE: International Reading Association.

Nagy, W. E., & Scott, J. A. (2000). Vocabulary processes. In M. Kamil, P. B. Mosenthal, P. D. Pearson, & R. Barr (Eds.), *Handbook of reading research* (Vol. 3, pp. 269–284). Hillsdale, NJ: Lawrence Erlbaum.

National Institute for Literacy. (2007). *What content-area teachers should know about adolescent literacy.* Washington, DC: National Institute of Child Health and Human Development.

Snow, C. E. (2002). *Reading for understanding: Toward an R&D program in reading comprehension.* Santa Monica, CA: RAND.

Snow, C., Griffin, P., & Burns, M. B. (Eds.). (2005). *Knowledge to support the teaching of reading: Preparing teachers for a changing world.* San Francisco: Jossey-Bass.

Watts, S., & Graves, M. F. (1997). Fostering students' understanding of challenging texts. *Middle School Journal, 29,* 45–51.

Strategy
1

Semantic Mapping

Developing Robust Academic Vocabularies

STRATEGY OVERVIEW

Semantic maps are graphic displays of word meanings that offer students a visual representation of how words and concepts are related through a network of organized knowledge (Heimlich & Pittelman, 1986). The real architects of word maps are the students who use their prior knowledge to deepen their understanding of the topic(s) that result in graphic representations of the relationships and associations of meanings or concepts to the target word (Schwartz & Raphael, 1985). The use of semantic maps as instructional tools provides students with a deepening understanding of words including their concept knowledge, relationships to other words, and multiple meanings.

The semantic mapping strategy is most effective when it is used before, during, and after reading and when the teacher serves as the guide or facilitator to the students who construct their own semantic maps. When semantic mapping is used as a prereading strategy, it helps to activate students' prior knowledge (Heimlich & Pittelman, 1986). Further, the teacher may use the students' prereading semantic maps to determine how much knowledge building is required before students read the text (Antonacci, 1988). When using semantic mapping as a postreading instructional strategy, teachers employ students' discussions to help them recall and organize information that they have learned from reading text as they make connections to words or concepts related to the topic. Fundamental to the success of the approach is the students' engagement in discussions of word concepts that focus on deepening their knowledge of the academic vocabulary related to content.

When semantic maps were first used to develop word knowledge, they all looked the same. Over the years, we have seen hybrids of the first maps that were used as teachers' purposes for using the graphics developed. For example, word maps may show associations with similar words; they may depict definitions and examples and nonexamples; they may map synonyms and antonyms of target words; they may present the hierarchical relationships to other words; or they may simply present free associations of words to the underlying meaning of the topic. Semantic maps are

most effective when (a) they are used with teacher-guided discussion before, during, and after reading a text; (b) teachers select a few critical key words to be taught; and (c) students are actively engaged in constructing their word maps through participating in lively discussions on the conceptual nature of words.

IRA/NCTE Standards for the English Language Arts

3. Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts. They draw on their prior experience, their interactions with other readers and writers, their knowledge of word meaning and of other texts, their word identification strategies, and their understanding of textual features (e.g., sound-letter correspondence, sentence structure, context, graphics).

12. Students use spoken, written, and visual language to accomplish their own purposes (e.g., for learning, enjoyment, persuasion, and the exchange of information).

Source: International Reading Association and National Council of Teachers of English (1996).

STEP-BY-STEP PROCEDURE

Using semantic maps requires full participation by students who are engaged during the teacher-directed discussion. Students will be required to use maps *before, during,* and *after* reading the text. Therefore, this step-by-step procedure is designed for using semantic maps as a strategy at different phases of reading informational or fiction text.

BEFORE READING

Prior to reading the text, the teacher examines the text to be read and carefully selects the key words to be learned (content or Tier 2 words) that are critical for understanding the text and the lesson.

1. The teacher introduces the selected content words using the semantic word map and guided discussion.

2. Using chart paper, the blackboard, or a software program with a graphics tool, draw or project the word map so that it is visible to the students. Write the topic or main concept in the center of the map.

3. Distribute semantic maps to the students.

4. Begin the prereading discussion that focuses on the content words. As students respond to concept-related questions, write the word and students' meanings and responses on the map and direct students to do the same.

5. When students fail to respond to the concept-related questions, the teacher should offer a contextual definition of the word that facilitates students' understanding of the text.

DURING READING

As students read, they use their semantic maps to add to the meaning of the words.

1. Before directing the students to read the assigned text, the teacher provides a quick review of the key words.

2. The teacher instructs students to add additional information from their readings to clarify the meanings of the key words. She encourages the students to note additional words that further explain the ideas from their readings.

3. As students read, the teacher reminds students to write down questions about words that need clarification.

AFTER READING

The teacher engages students in an extended discussion on their readings, focusing on the content words and their meanings.

1. The teacher directs the students to use their semantic maps during the discussion of their reading. She engages students in a discussion that further promotes and deepens their understanding of the content words by building on their conceptual knowledge.

2. As students discuss the reading and use the map as their guides, the teacher directs them to clarify the information that they gleaned from their readings.

3. The teacher guides the discussion with questions that will help students to further understand what they have read. As the students respond to the questions, the teacher notes their responses on the large semantic map as they take additional notes on their own maps.

With the variety of semantic maps that may be used to develop word knowledge, the teacher should select the semantic map that is most appropriate for the readings and content words for developing students' word knowledge around different disciplines. For example, the traditional semantic map helps to show relations among words, others are suitable for displaying examples and nonexamples of the word concept, and others may be used to encourage students to make a personal connection to the word. The graphics below are examples of three different types of semantic maps: Figure 1.1, Semantic Map: Using Word Relationships; Figure 1.2, Semantic Map: Synonyms, Antonyms, Examples, and Nonexamples; and Figure 1.3, Semantic Map: Word Connections.

DIFFERENTIATING INSTRUCTION FOR STRIVING READERS

Semantic mapping may be especially helpful in assisting striving readers and writers in developing their academic vocabularies that will lead to their comprehending content area text (Guastello, Beasley, & Sinatra, 2000; Sinatra, Stahl-Gemake, & Berg, 1984). Provide striving readers with additional scaffolding before and during reading. Before reading the text, the teacher should use expanded definitions of key words, definitions

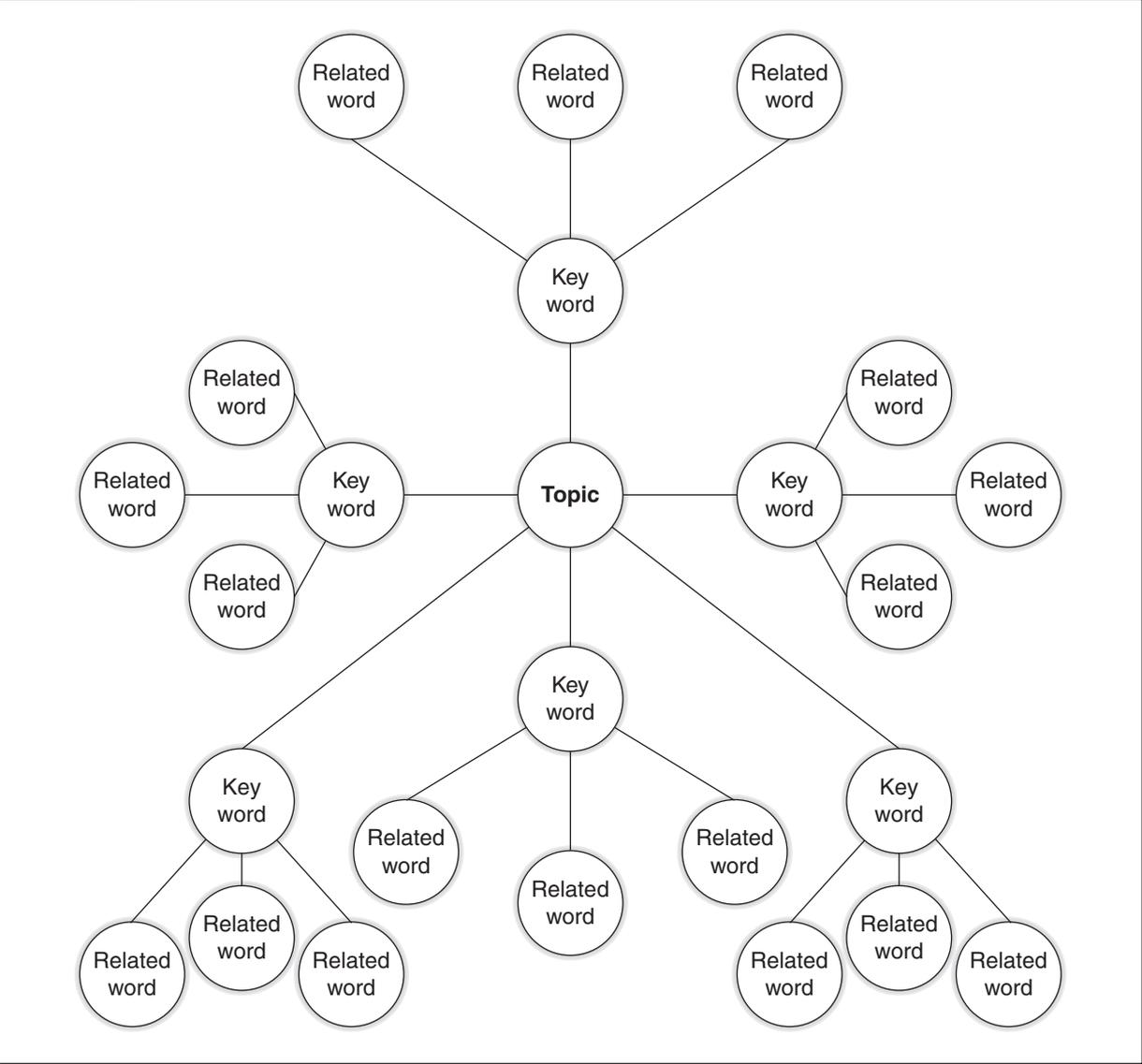| **Figure 1.1**	Semantic Map: Using Word Relationships

Figure 1.2	Semantic Map: Synonyms, Antonyms, Examples, and Nonexamples

Figure 1.3	Semantic Map: Word Connections

Making Personal Connections to Words

WORD
Text meaning and examples

→

WORD
Personal connection and examples

WORD
Text meaning and examples

→

WORD
Personal connection and examples

WORD
Text meaning and examples

→

WORD
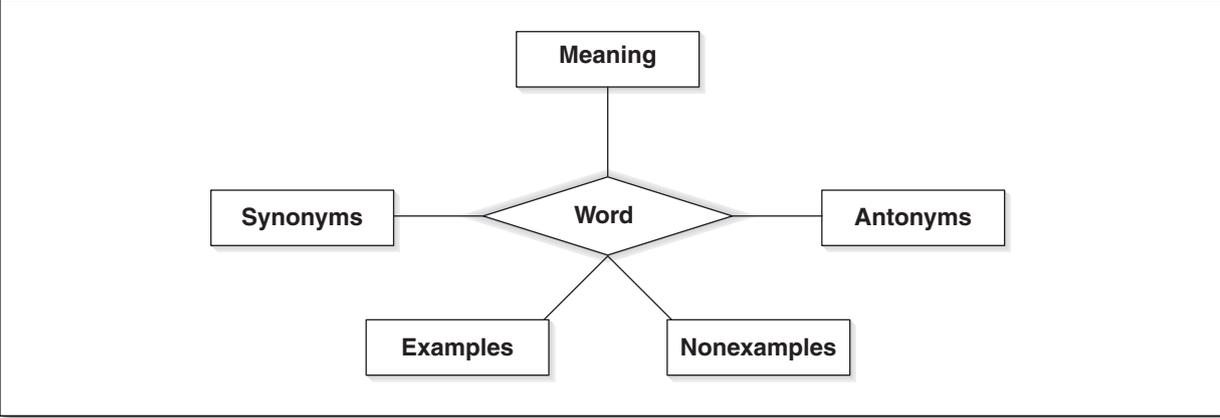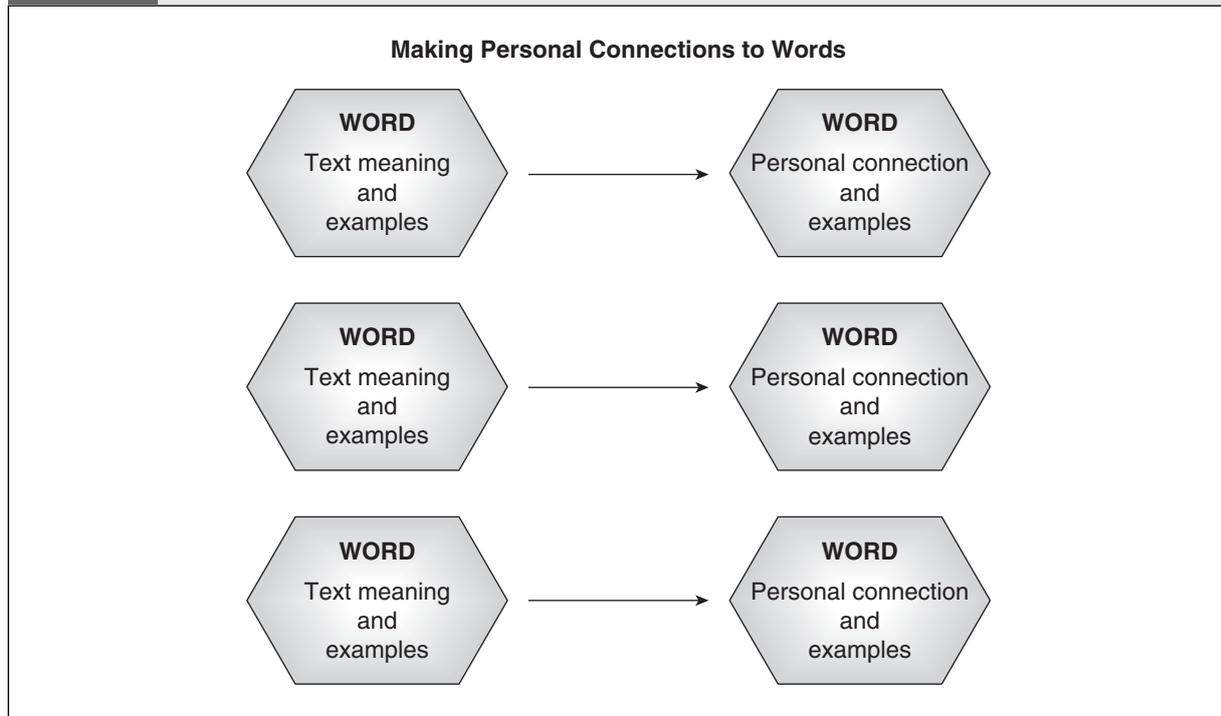Personal connection and examples

that are easier to understand, and those that relate to students' experiential vocabulary. Such definitions serve as scaffolds in helping low-achieving students comprehend content area textbooks. During reading, it is recommended that the teacher assists students who have difficulty in understanding the text and taking notes on their semantic maps.

Considering the Language Needs of ELL Students

IRA/NCTE Standards for the English Language Arts

10. Students whose first language is not English make use of their first language to develop competency in the English language arts and to develop understanding of content across the curriculum.

All students bring a wealth of experience to the classroom. The classroom teacher can tap the collective knowledge of her students and help them make specific connections of their personal experiences to the content. This is especially important for ELL students who are building their experiential word knowledge along with their academic vocabularies. For ELL students, building vocabulary by attaching new content words to a broader topic will facilitate their learning of content vocabulary (Au, 1993). Make the connection between students' prior knowledge, content knowledge, and the new key
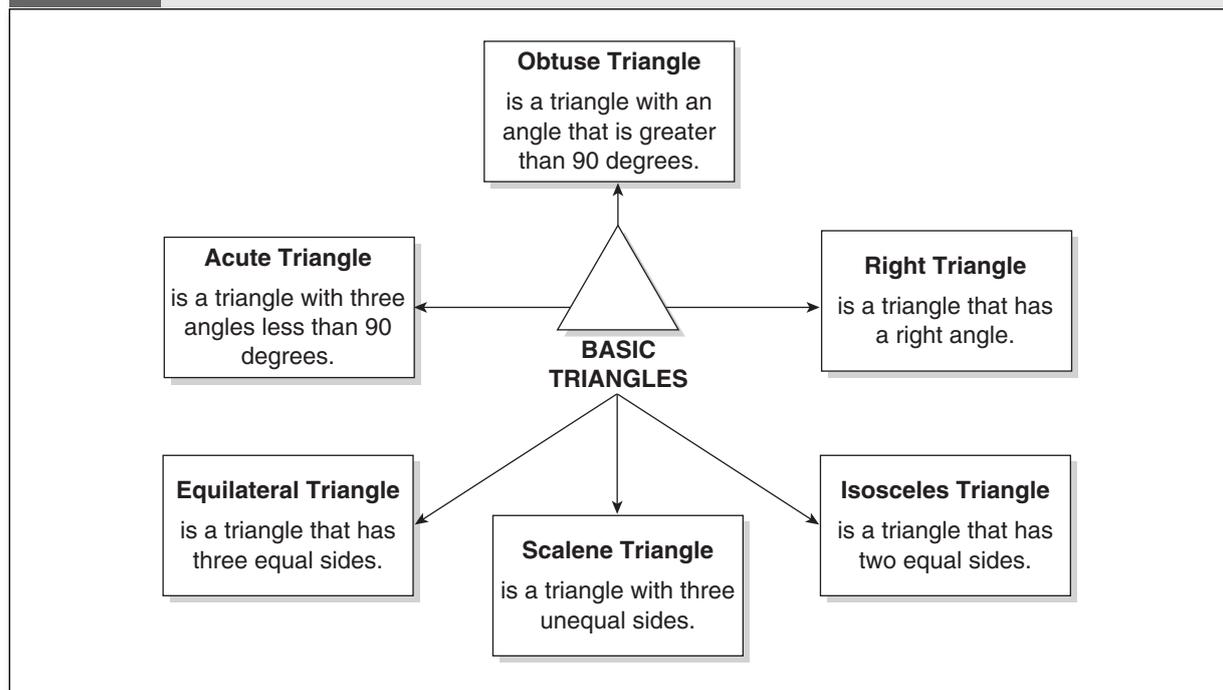
word(s). Encourage English language learners to provide the word from their native language that matches the key words on the semantic map. Two middle school teachers of ELL students, one in the math classroom and a second in social studies, reported that when they added a picture cue to each key word on the semantic maps, students found it easier to remember the words and their meanings.

AN APPLICATION FOR READING AND LEARNING IN THE MATHEMATICS CLASSROOM

In a mathematics class, the teacher prepared the students for an introductory lesson on triangles. The teacher began by introducing the names for four different triangles, showing the semantic map on an overhead projector depicted in Figure 1.4, Semantic Map: Before Reading, and gave copies to the students.
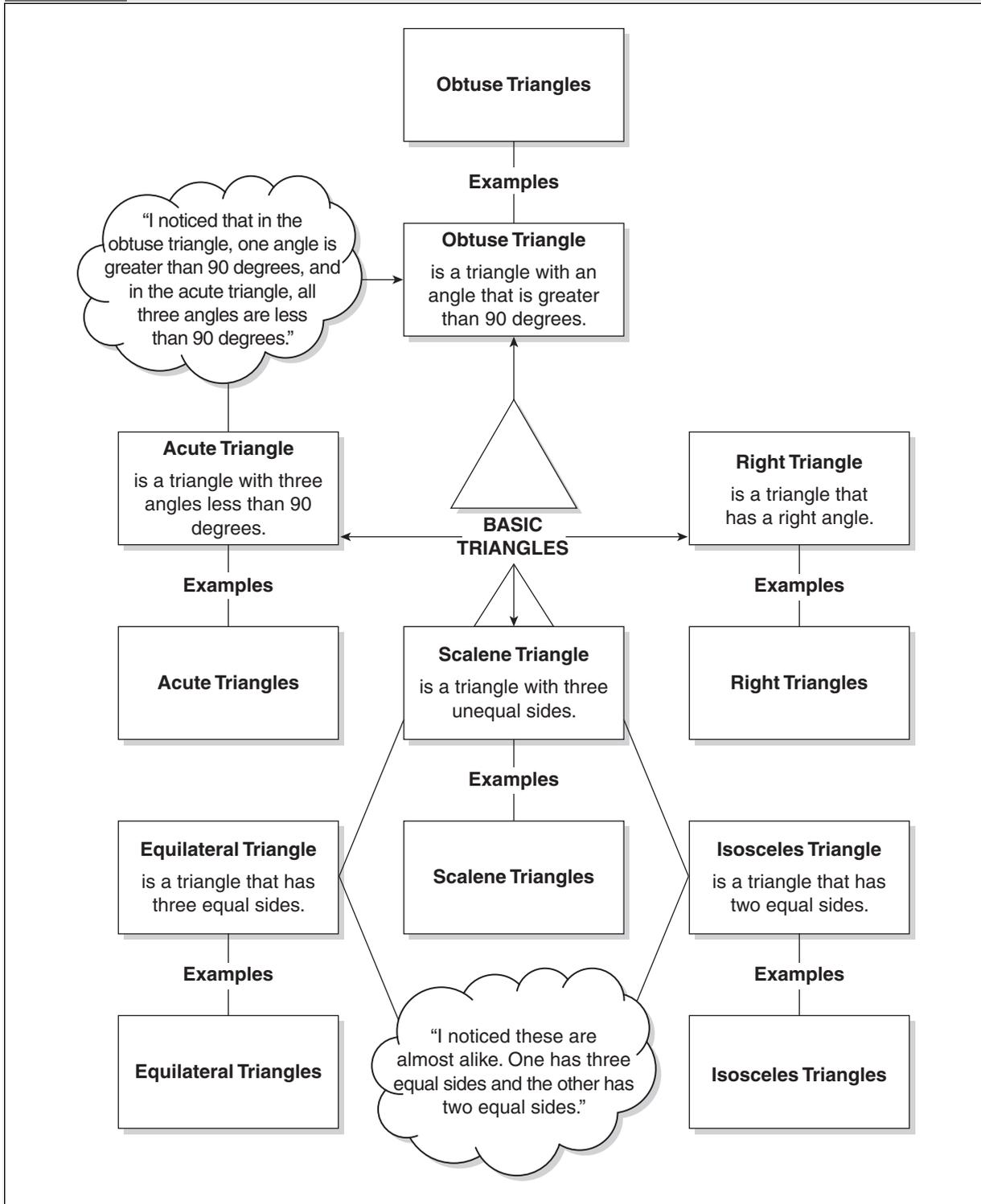
The teacher read the names of each of the triangles and asked the students if they knew the definition of each or could describe the properties of the triangles. Many students responded with the definition of the *right triangle*. The teacher wrote their responses in the appropriate box and continued. Because students did not know the remaining triangles, the teacher provided definitions for each triangle, wrote their meanings on the semantic map, and discussed the properties of the relationships among the triangles. As students read their text on the defining characteristics of triangles, they used their semantic maps to write the definitions, took notes, and drew the specific types of triangles. After students read their text, the teacher engaged them in a guided discussion for the purpose of expanding the initial definitions and clarifying any questions.

Figure 1.4	Semantic Map: Before Reading

Obtuse Triangle

is a triangle with an angle that is greater than 90 degrees.

Acute Triangle

is a triangle with three angles less than 90 degrees.

Right Triangle

is a triangle that has a right angle.

BASIC TRIANGLES

Equilateral Triangle

is a triangle that has three equal sides.

Scalene Triangle

is a triangle with three unequal sides.

Isosceles Triangle

is a triangle that has two equal sides.

Students shared their definitions and comments and continued to take notes during the discussion while the teacher recorded their responses on the class semantic map. Figure 1.5, Semantic Map: After Reading, presents the development of word knowledge through reading and discussion.

| **Figure 1.5** | Semantic Map: After Reading |

Obtuse Triangles

Examples

Obtuse Triangle
is a triangle with an angle that is greater than 90 degrees.

"I noticed that in the obtuse triangle, one angle is greater than 90 degrees, and in the acute triangle, all three angles are less than 90 degrees."

Acute Triangle
is a triangle with three angles less than 90 degrees.

Right Triangle
is a triangle that has a right angle.

BASIC TRIANGLES

Examples

Examples

Acute Triangles

Scalene Triangle
is a triangle with three unequal sides.

Right Triangles

Examples

Equilateral Triangle
is a triangle that has three equal sides.

Scalene Triangles

Isosceles Triangle
is a triangle that has two equal sides.

Examples

Examples

Equilateral Triangles

"I noticed these are almost alike. One has three equal sides and the other has two equal sides."

Isosceles Triangles

REFERENCES

Antonacci, P. (1988). Comprehension strategies for special learners. In C. N. Hedley & J. Hicks (Eds.), *Reading for special learners* (pp. 155–176). Norwood, NJ: Ablex.

Au, K. H. (1993). *Literacy instruction in multicultural settings.* Fort Worth, TX: Harcourt Brace.

Guastello, E. F., Beasley, T. M., & Sinatra, R. C. (2000). Concept mapping effects on science content comprehension of low achieving inner-city seventh graders. *Remedial and Special Education, 21*(6), 356–364.

Heimlich, J. E., & Pittelman, S. D. (1986). *Semantic mapping: Classroom applications.* Newark: DE: International Reading Association.

International Reading Association and National Council of Teachers of English. (1996). *Standards for the English language arts.* Newark, DE: International Reading Association & Urbana, IL: National Council of Teachers of English.

Schwartz, R. M., & Raphael, T. E. (1985). Concept of definition: A key to improving students' vocabulary. *The Reading Teacher, 39,* 198–205.

Sinatra, R. C., Stahl-Gemake, J., & Berg, W. (1984). Improving reading comprehension of disabled readers through semantic mapping. *The Reading Teacher, 38*(1), 22–29.

Strategy 2

Vocabulary Self-Collection Strategy (VSS)

Promoting Word Consciousness

STRATEGY OVERVIEW

Teachers in content area classrooms know that robust academic vocabularies are required for students' success in learning content knowledge. They are also aware of the sheer volume of complex words across the disciplines that students need to know to support their learning. Therefore, strategies that promote students' word consciousness to support independent word learning are critical for their academic success.

The purpose of the vocabulary self-collection strategy (VSS) is to motivate students to learn new words by promoting a "long-term acquisition and development of the vocabulary of academic disciplines" with the goal of integrating "new content words into students' working vocabularies" (Ruddell, 2005, p. 166). As students develop word consciousness, or an interest in words, as well as the strategy for becoming a word collector, they will increase their academic vocabularies when confronted with unknown words from varied disciplines. The primary purpose of the VSS is to deepen students' understanding of words, promote their interest in new words, and offer them a strategy to identify and learn new and fascinating words.

Many educators have argued for the need to develop students' curiosity of new and interesting words. Graves's (2006, 2008) model of a long-term vocabulary program argues for the need for developing word consciousness as one of its critical components for teaching vocabulary that promises to lead to increased word knowledge. Briefly, word consciousness is having "an interest in and awareness of words" (Scott & Nagy, 2004, p. 202). With an expanding curiosity in words, students become motivated to learn new words on their own. This is especially useful for students in content area classrooms where they are expected to learn a wide range of technical and nontechnical words to understand the discipline (Harmon, Wood, & Hedrick, 2008). Ruddell and Shearer (2002) demonstrated that the VSS with middle school students has been an effective means for "increasing the depth and breadth of student vocabulary

knowledge and for developing students' ability to be strategic, independent word learners" (p. 361).

IRA/NCTE Standards for the English Language Arts

3. Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts. They draw on their prior experience, their interactions with other readers and writers, their knowledge of word meaning and of other texts, their word identification strategies, and their understanding of textual features (e.g., sound-letter correspondence, sentence structure, context, graphics).

12. Students use spoken, written, and visual language to accomplish their own purposes (e.g., for learning, enjoyment, persuasion, and the exchange of information).

STEP-BY-STEP PROCEDURE

The VSS is most effective when it is used with small groups of students working together. Fundamental to its success is the role that academic talk plays throughout this procedure as well as the teacher's own demonstrative interest in words. Briefly, the strategy consists of selecting, defining, finalizing, and using words (Tierney & Readence, 2005). The following procedure presents what the teacher and students do before, during, and after reading using the VSS in content area classrooms.

BEFORE READING

The teacher selects the reading that is appropriate for the topic that will be developed and decides on the words that students need to know to comprehend the text. Through modeling the process of using the VSS, the teacher demonstrates how to use the strategy.

1. The teacher reads the first paragraph aloud to the students.

2. The teacher then projects a copy of the reading on the screen and uses a think-aloud as a way of modeling how to select words that are important for understanding the reading. The teacher indicates her interest in a word that may result from her not knowing the word, or finding it difficult or interesting. She shares with the class the need to know something more about the word to understand the text.

3. The teacher then projects a graphic organizer that includes a box for the word, the reason for selecting the word, and the definition of the word as shown in Figure 2.1, Vocabulary Self-Collection Strategy Chart. She writes the word in the appropriate box, says the word, and asks the students why they think she chose this word as an important one for learning. She then writes the reason in the appropriate box. Finally, the teacher defines the word, writing the definition in the next box.

Figure 2.1	Vocabulary Self-Collection Strategy Chart

Name: _____   Date: _____

Topic: _____   Pages: _____

WORD	REASON FOR SELECTION	DEFINITION

DURING READING

The teacher directs the students to read selected passages from the text and after reading the passages to do the following:

1. After reading, revisit the text and select at least five words that they think are important to their understanding of the readings or that they found interesting or challenging.

2. Complete the VSS Student Chart in Figure 2.1 that directs them to write the word, the reason for selecting the word, and a definition of the word if they know it.

AFTER READING

Students are divided into small groups that include students with varying reading abilities, ELL students, and those from different cultures. The groups will focus their discussions on the words they have selected and their reasons for choosing the words. Using their texts and completed VSS charts, each group is directed to do the following:

1. The group appoints one student to act as leader whose role is to keep the discussion moving as they focus their talk on the words they have selected.

2. Each student submits one word he or she has selected and provides the reason for choosing the word that becomes the focus of the discussion. The discussion may center on the word's meaning, the importance of the word in understanding the text, whether the members of the group selected the word, or another reason. The group then decides whether the word should be selected for the group chart.

3. The group leader uses the group chart to record the word, the reason it has been selected by the group, and the word's contextual definition. Each group limits the number of words included on the VSS chart to five.

4. Writing the contextual meaning of each word is the last step of using the VSS. Students then validate the meaning of each word through the use of the dictionary or the glossary that may be found in the text.

5. After the small-group discussion, the teacher brings the groups together for a class discussion. Each group leader reports to the class, providing the list of words selected by the small group. The teacher or student records the words on the VSS class chart, along with reasons for choosing the word and the contextual meanings.

6. The teacher may list additional words overlooked by students that are required for understanding the text. For words with a high-difficulty level that students do not understand, the teacher provides direct instruction, focusing on the words' contextual meanings.

Extensions of VSS

To extend the VSS, (a) students use personal dictionaries to add the words and meanings selected by the groups and the teacher. They are encouraged to add their own words whether they were considered as a key word needed to understand the text or simply a word of interest. Another extension of VSS includes (b) the use of selected words by the teacher to create a *thematic or topical word wall.* One way that students make the word their own is through frequent use and exposure to the word. The teacher makes reference to the words during class discussions and encourages students to use the words in their writing assignments, discussions, and projects.

DIFFERENTIATING INSTRUCTION FOR STRIVING READERS

Students who are struggling readers may benefit from working with a partner when first using the VSS. Asking students who have difficulty reading the text to select words that they think are important in understanding the text or are challenging may be overwhelming to struggling readers. To partner students with a proficient reader would provide a

scaffold to less proficient reader(s) in learning the process of identifying key words or any word that is challenging and interesting. Through discussion, students articulate the reasons for selecting the words that lead to their understanding new words.

Considering the Language Needs of ELL Students

IRA/NCTE Standards for the English Language Arts

10. Students whose first language is not English make use of their first language to develop competency in the English language arts and to develop understanding of content across the curriculum.

Students who are learning the English language benefit from engaging in discussion about the meanings of words when talk is sheltered and collaborative. Therefore, when teachers form small groups for discussion, it is important that ELL students are placed with other students who are supportive of members of the group and accept their contributions. When recording key words on their VSS charts, they may use the native language word along with the English word.

An Application for Instruction and Learning in the Business Law Classroom

In an introductory business law class, students were introduced to the topic of *contracts*. The teacher directed the students to use the VSS to select important words from their readings that they needed to learn and to collect other words that were especially interesting and challenging. After students read the text, they reread the passages to find words they thought were important for knowing and understanding the text. Small-group discussions yielded the list of words found in Figure 2.2, Vocabulary Self-Collection Strategy Chart: Contracts.

Figure 2.2	Vocabulary Self-Collection Strategy Chart: Contracts	
Class: *Period 3*		Date: *2/3/2007*
Topic: *An introduction to contracts*		Pages: *45–56*

WORD	*REASON FOR SELECTION*	*DEFINITIONS*
Contract	We will be reading about contracts. So this is an important word.	A contract is an agreement between two people.

Breach	This sounds like it has to do with not keeping the contract.	To breach a contract mean to break the promises made in the contract.
Executed contract	This is an important word because it has to do with carrying out the contract.	An executed contract is one that has been carried out by the parties that made an agreement.
Goods	This word sounds like it has to do with property that is part of a contract.	Goods are personal property that can be transported or moved.
Real property	This is a kind of property that must be part of an agreement.	Property that cannot be moved like a house or an acre of land.
Parties	Parties must be those who are part of the contract.	People who sign the agreement or the contract. They are part of the contract.
Informal contracts	These types of contracts will be studied.	They are types of contracts that are not formal. A lease for an apartment is an informal contract.

REFERENCES

Graves, M. F. (2006). *The vocabulary book: Learning and instruction*. Newark, DE: International Reading Association.

Graves, M. F. (2008). Instruction on individual words: One size does not fit all. In A. E. Farstrup & S. J. Samuels (Eds.), *What research has to say about vocabulary instruction* (pp. 56–79). Newark, DE: International Reading Association.

Harmon, J. M., Wood, K. D., & Hedrick, W. B. (2006). *Instruction strategies for teaching content vocabulary: Grades 4–12*. Westerville, OH: National Middle School Association and Newark, DE: International Reading Association.

International Reading Association and National Council of Teachers of English. (1996). *Standards for the English language arts*. Newark, DE: International Reading Association & Urbana, IL: National Council of Teachers of English.

Ruddell, M. R. (2005). *Teaching content reading and writing* (4th ed.). Hoboken, NJ: Wiley.

Ruddell, M. R., & Shearer, B. A. (2002). "Extraordinary," "tremendous," "exhilarating," "magnificent": Middle-school at-risk students become avid word learners with the vocabulary self-collection strategy (VSS). *Journal of Adolescent and Adult Literacy, 45*, 352–363.

Scott, J. A., & Nagy, W. E. (2004). Developing word consciousness. In J. F. Baumann & E. J. Kame'enui (Eds.), *Vocabulary instruction: Research to practice* (pp. 201–217). New York: Guilford.

Tierney, R. J., & Readence, J. E. (2005). *Reading strategies and practices: A compendium* (6th ed.). Boston: Allyn & Bacon.

Strategy 3

Contextual Redefinition

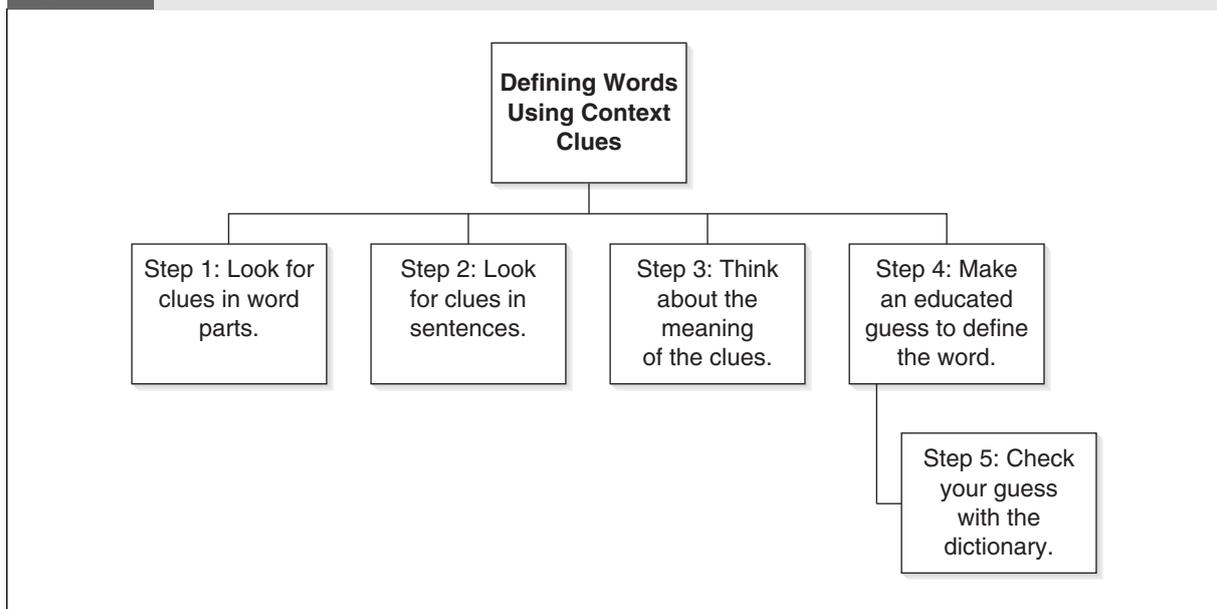## Using Clues as a Word-Learning Strategy

STRATEGY OVERVIEW

One of the primary goals of schooling is to create independent learners. This is also true for vocabulary instructional programs. "Showing learners how to construct meaning for unfamiliar words encountered during reading helps them develop strategies needed to monitor comprehension and increase their vocabularies " (Vacca & Vacca, 2007, p. 172). Word-learning strategies are especially important in the content area classrooms where each student is expected to read "like a scientist, historian, or mathematician" (Harmon, Wood, & Hedrick, 2008, p. 165). One of the most important strategies that will foster students' independence in word learning is becoming skilled at using context clues to unlock the meaning of unknown words (Graves, 2007, 2008).

To use context clues, students are directed to look for clues within the word and the sentence or surrounding sentences. Students use clues from meaningful word parts such as the base word, suffixes, or prefixes or from known words that surround the unknown word within the text. Teaching students to use context clues while they are reading will help them to infer meanings while they are reading, but the context alone does not lead to a deep understanding of the word. Additional tools, such as the dictionary and other references, are necessary to learn more complete meanings of words. Therefore, as an adjunct to this strategy, students should be encouraged to use context clues with other word-learning strategies. A systematic approach for using context clues along with the dictionary or the glossary is shown in Figure 3.1, Defining Unknown Words Using Context Clues.

IRA/NCTE Standards for the English Language Arts

3. *Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts. They draw on their prior experience, their interactions with other readers and writers, their knowledge of word meaning and of other texts, their word identification strategies, and their understanding of textual features (e.g., sound-letter correspondence, sentence structure, context, graphics).*

Figure 3.1	Defining Unknown Words Using Context Clues

Defining Words Using Context Clues

Step 1: Look for clues in word parts.

Step 2: Look for clues in sentences.

Step 3: Think about the meaning of the clues.

Step 4: Make an educated guess to define the word.

Step 5: Check your guess with the dictionary.

STEP-BY-STEP PROCEDURE

Tierney and Readence (2005, pp. 311–313) have provided a systematic approach for teaching students a word-learning strategy through the use of context clues and the dictionary. Their five-step strategy includes (1) selecting unfamiliar words, (2) writing a sentence, (3) presenting the words in isolation, (4) presenting the words in context, and (5) using the dictionary.

BEFORE READING

Prior to reading, the teacher demonstrates how to use word clues and sentence clues to assist students in unlocking the meaning of unknown words.

1. To teach the strategy, the teacher selects three key content words that are difficult yet central to understanding the text. She identifies the sentence or sentences from the text where the target words appear. To teach this strategy, it is important that the sentences that are used have multiple context clues that will help students guess the meaning of the word.

2. For students who are not familiar with using context clues, the teacher may consider using a think-aloud or modeling the process to demonstrate the strategy.

3. For each word, she uses the following procedure:
   a. The teacher provides an overview of the strategy and distributes copies of the graphic shown in Figure 3.2, Identifying the Meanings of Words Through Context Clues Chart, to students.
   b. The teacher presents the word to students, writing it on the chalkboard, carefully pronouncing it, and asking them to write each word on their charts in the column marked *words*.
   c. The teacher directs students to examine the word closely for word parts such as the base or root word, prefix, or suffix that may help them to discover the

meaning of the word. Have students use the word parts to begin to guess the meaning of the word and write the word part and its meaning in the appropriate box on their chart. When students are unable to identify word parts, the teacher uses direct instruction, showing students how to recognize word parts that will offer meaningful clues.

d. The teacher writes a sentence on the chalkboard that is rich in context clues and asks the students to identify the clues within the sentence that may help them figure out the meaning of the target word. The teacher takes advantage of discussion and participation by the students to demonstrate how the use of context clues supports learning unfamiliar words. The students write the context clues in the appropriate column on their chart.

e. After studying the clues, the students guess the definition of the word and write it on their chart.

f. When students have used word parts and sentences as clues for arriving at the meaning of the target word, they employ their dictionary or the glossary in the text to identify the meaning of the word and write it on their chart.

Figure 3.2	Identifying the Meanings of Words Through the Context Clues Chart			
	Identify Context Clues and Meanings		*Combine the Clue Meanings*	*Check Your Meaning*
Words	**Step 1** **Word part**	**Step 2** **Surrounding**	**Step 3** **Clue meanings**	**Step 4** **Check your meaning with the dictionary**
				My word meaning: ✓ With dictionary definition:
				My word meaning: ✓ With dictionary definition:
				My word meaning: ✓ With dictionary definition:

DURING READING

The students read the text and practice their strategy for deriving meanings of words from word and text clues.

1. The teacher works with students who are having difficulty in identifying word and text clues.

2. The teacher conferences with students to assist them in using word and sentence clues guessing at the word meanings from context clues.

DIFFERENTIATING INSTRUCTION FOR STRIVING READERS

Proficient readers use a wide range of strategies in comprehending text including context clues to infer meaning from text. However, students who lack reading skills are not as capable in their use of context clues in making sense out of the text. To help struggling readers in developing efficient strategies for unlocking the meaning of words, it is important that teachers use more time modeling and scaffolding their attempts in using context clues (Scott, Nagy, & Flinspach, 2008). Create learning partners by pairing striving with average or advanced readers and provide them with a list of word parts and their meanings. Demonstrate to students how to use the meaning of word parts to discover the meaning of an unknown word. Allow time for the learning partners to practice together while monitoring their performance.

CONSIDERING THE LANGUAGE NEEDS OF ELL STUDENTS

IRA/NCTE Standards for the English Language Arts

10. Students whose first language is not English make use of their first language to develop competency in the English language arts and to develop understanding of content across the curriculum.

Source: International Reading Association and National Council of Teachers of English (1996).

Teaching ELL students word-learning strategies will equip them with essential tools toward developing vocabulary in their second language. When teaching the use of context clues in figuring out the meaning of an unknown word to ELL students, begin with words that are familiar to the students. Scaffold students' first attempts in identifying context clues through probing questions and selecting appropriate dictionary definitions.

An Application for Instruction and Learning in the Biology Classroom

An eighth-grade class is beginning a unit on environmental science. Their opening reading includes description of the differences between an ecosystem and a biome. The teacher introduces the three key words and asks students for their meanings. Students take "wild guesses" in defining the key words. She then provides them with a strategy to unlock the meanings of unknown words through looking for clues in words and within the sentence or sentences surrounding the word, using the clues and their meanings to define the word, and checking their definition with the glossary in the text or the dictionary. Figure 3.3, Identifying the Meanings of Words Through the Context Clue Chart: Biology, illustrates how a group of students worked together to figure out the meanings of unknown words by applying the contextual clue strategy on the three target words from their textbook.

Figure 3. 3	Identifying the Meanings of Words Through the Context Clue Chart: Biology			
	Identify Context Clues and Meanings		*Combine the Clue Meanings*	*Check Your Meaning*
Words	**Step 1** **Word part**	**Step 2** **Surrounding**	**Step 3** **Clue meanings**	**Step 4** **Check your meaning with the dictionary**
Ecologist	*eco*—has to do with the environment *ology*—the study of *ist*—person	The plant life and fish in the pond were being examined by the ecologist.	The person studying the environment, like the plants and fish in the pond.	My word meaning: someone studying the environment. ✓ My guess fits the meaning of the one in the glossary of the text.
Ecosystem	*eco*—has to do with the environment *system*—working together	The living things in an ecosystem work closely together. They are in balance like any good system.	All parts of the ecosystem are in balance working together.	My word meaning: things or parts in the environment that work together. ✓ My guess was almost the same as the dictionary meaning. The glossary included the ecological community to describe how they work together and said they were smaller than biomes.
Biome	*bio*—has to do with living organisms	The entire communities of living organisms that exist together in similar conditions.	Living organisms that live together.	My word meaning: large community of organisms that live together and share the same conditions. ✓ My guess was correct. I found out that ecosystems and biomes are almost alike. One main difference is that they differ in size.

REFERENCES

Graves, M. F. (2007). Vocabulary instruction in the middle grades. *Voices from the Middle, 15*(1), 13–19.

Graves, M. F. (2008). Instruction on individual words: One size does not fit all. In A. E. Farstrup & S. J. Samuels (Eds.), *What research has to say about vocabulary instruction* (pp. 56–79). Newark, DE: International Reading Association.

Harmon, J. M., Wood, K. D., & Hedrick, W. B. (2008). Vocabulary instruction in middle and secondary content classrooms: Understandings and direction from research. In A. E. Farstrup & S. J. Samuels (Eds.), *What research has to say about vocabulary instruction* (pp. 150–181). Newark, DE: International Reading Association.

International Reading Association and National Council of Teachers of English. (1996). *Standards for the English language arts.* Newark, DE: International Reading Association & Urbana, IL: National Council of Teachers of English.

Scott, J. A., Nagy, W. E., & Flinspach, S. L. (2008). More than merely words: Redefining vocabulary learning in a culturally and linguistically diverse society. In A. E. Farstrup & S. J. Samuels (Eds.), *What research has to say about vocabulary instruction* (pp. 182–210). Newark, DE: International Reading Association.

Tierney, R. J., & Readence, J. E. (2005). *Reading strategies and practices: A compendium* (6th ed.). Boston: Allyn & Bacon.

Vacca, R. T., & Vacca, J. L. (2007). *Content area reading: Literacy and learning across the curriculum* (9th ed.). Boston: Allyn & Bacon.

Strategy 4

Semantic Feature Analysis (SFA)

Comparing and Contrasting Features of Words

STRATEGY OVERVIEW

The primary purpose of the semantic feature analysis (SFA) strategy is to increase students' academic vocabulary. Through the use of categorization skills required by SFA, students are led to a deeper understanding of the key words as they examine the similarities and differences of related words through analyzing the features or characteristics of each word concept within the selected category (Tierney & Readence, 2005).

As students in content area classrooms advance, their requirement to learn from their texts augments. Therefore, they experience difficulty in acquiring knowledge through reading, and for many students, the challenge is overwhelming. Such "knowledge acquisition includes specific domain knowledge, such as categories, concepts, and processes" (Ruddell & Unrau, 2004, p. 1488). To comprehend and learn from text, it is essential that readers have acquired the conceptual understanding of the words that they read. SFA provides students with a strategy that helps to build their knowledge base through the development of related concepts or content words. For each word, students are required to examine its features and how words from a category may or may not share these features or characteristics. As students use SFA, they build conceptual knowledge of words and discover related words within a category, an important aspect of deepening their comprehension of the content words. Thus, SFA is a strategy that assists students in learning words within a category by examining their shared features and characteristics through the use of a matrix or a word grid (Brozo & Simpson, 2003).

Although SFA has been used to expand students' vocabulary outside a specific domain area, such as fictional literature, SFA is more appropriate to use as a vocabulary strategy in a content area around a given topic (Tierney & Readence, 2005). To optimize student learning when using SFA, consider the following recommendations for implementing the strategy:

1. Since SFA is considered a conceptual approach to word learning, it helps students connect the meanings of the new words to their prior knowledge (Herman & Dole, 1988).

2. Consider the students, the text, and the task when selecting the topic and related key words for vocabulary instruction.

3. Use an interactional approach to teaching the key words. Students' active participation in learning new academic vocabulary will guarantee better learning from text.

4. Guided by the content that is being studied as well as students' backgrounds, use small-group and whole-class discussion, questioning strategies, writing, and group sharing to facilitate students' understanding of the vocabulary.

IRA/NCTE Standards for the English Language Arts

3. Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts. They draw on their prior experience, their interactions with other readers and writers, their knowledge of word meaning and of other texts, their word identification strategies, and their understanding of textual features (e.g., sound-letter correspondence, sentence structure, context, graphics).

12. Students use spoken, written, and visual language to accomplish their own purposes (e.g., for learning, enjoyment, persuasion, and the exchange of information).

Source: International Reading Association and National Council of Teachers of English (1996).

STEP-BY-STEP PROCEDURE

The SFA will be most successful when teachers use the strategy before, during, and after reading the text. Before students read the text, the teacher may select from various approaches such as questioning, a prewriting activity, or a think-pair-share activity to prepare students for reading the new word concepts in the text.

BEFORE READING

Prior to assigning students their readings, the teacher expands their understanding of the academic vocabulary required for comprehending and learning from the text. The following are the steps to follow before reading the text:

1. The teacher prepares by selecting the topic to be studied and the key words. After a careful reading of the students' text, the teacher selects only the related key words that belong to the category that are needed for understanding the text.

2. The teacher constructs a matrix, similar to the one in Figure 4.1, Semantic Feature Analysis Matrix, writing the topic or category name at the top and listing the selected key words to be studied in the first column. Along the top row, the teacher writes the major features or characteristics that belong to some or all of the categories that are to be discussed. The selected features are determined by the defining attributes of the words that will lead to an understanding of the word and the category and eventually a contextual definition.

3. The matrix will be used by the teacher for the guided discussion with the class. Therefore, a copy of the matrix may be projected using a transparency or the

computer. Copies of the blank matrix, as shown in Figure 4.1, Semantic Feature Analysis Matrix, are also distributed to the students.

4. The teacher introduces the topic of study by engaging the students in an active discussion that focuses on the key words needed to understand their reading. During the discussion, the teacher activates their prior knowledge through the use of questions and builds prerequisite knowledge needed to understand the content of the lesson as well as the readings. The focus of the discussion is on the comparison of the key words or concepts through examining their features and characteristics of the words.

5. When students' discussion of a word affirms that a feature is present, a check (✓) is recorded in the box that intersects with the word's row and the feature's column; for those words that do not possess the feature, a negative (−) sign is recorded.

Figure 4.1	Semantic Feature Analysis Matrix						
Key words				*Features*			*Notes*
							Comment and Definition

DURING READING

During reading students work to confirm and develop their understanding of the concepts that they are learning.

1. As students read their text, they take notes on the key words that provide additional information related to their understanding of the word. Students use their notes to revise their responses on their matrix.

2. Students are directed to add words from their readings that they think belong to the category or are related to the topic.

AFTER READING

Remembering that lively discussions initiated by students promote engagement in learning, the teacher prepares for small-group discussions immediately after their reading and a whole-class discussion to follow.

1. The teacher provides for a 5-minute small-group discussion of the key words. Students are directed to focus on one key word they have revised or added to their matrix as a result of their readings. They provide the basis for their revision or addition of the new word by showing evidence from their readings.

2. The teacher continues the discussion around the key words with the whole class. The SFA prereading matrix is projected on the screen while the teacher asks probing questions to expand students' knowledge around each of the key words. She encourages students to revisit their text. The discussion may lead the students to

   - provide responses that were discussed in their small groups, giving additional features for the key words,
   - compare and contrast key words,
   - offer contextual definitions of the key words, and/or
   - include words from their readings that they believe belong to the topic or category, offering a reason for their new word and identifying the word's features.

Extensions of SFA

Following the whole-class discussion of the key words, the teacher may extend the activity to provide students with practice in using the new academic words. For example, a brief, on-demand writing assignment that requires the students to include the words in meaningful ways will offer extended practice. Further, having students add the words to their personal dictionaries with contextual meanings or adding the words to the classroom word wall provides a reference for later use.

DIFFERENTIATING INSTRUCTION FOR STRIVING READERS

Without an understanding of academic vocabulary, students who are experiencing comprehension problems will not understand or learn from their textbooks. Researchers (Bos, Allen, & Scanlon, 1989) have found that SFA promotes academic vocabulary by

readers with a learning disability as they benefited through increased word knowledge and improved reading comprehension. Additional studies (Bos & Anders, 1990) attribute improved academic vocabulary and reading comprehension to SFA, because it is an interactive approach that engages students in their own learning.

Teachers may use the SFA in a similar fashion as suggested with some modifications for students who are struggling readers. They may (a) divide the lesson into smaller parts, requiring a reduced number of pages with shorter word lists; (b) provide greater opportunities for students to engage in partnering for the purpose of clarifying and expanding word meanings; (c) present visuals for concepts that serve as cues for students' understanding and reminders of the features or attributes of the key words.

Considering the Language Needs of ELL Students

Source: International Reading Association and National Council of Teachers of English (1996).

IRA/NCTE Standards for the English Language Arts

10. Students whose first language is not English make use of their first language to develop competency in the English language arts and to develop understanding of content across the curriculum.

Academic vocabulary has become an impediment for some students' success in content area classrooms. Bailey (2006) argued that for English language learners, it is especially true. One reason for the difficulty in acquiring and developing knowledge of words within the discipline is the nature of the words; academic vocabulary may be of abstract and have multiple meanings. Although research on specific strategy instruction of vocabulary learning for ELL students is limited, researchers Bos et al. (1989) found that with English language learners classified as students with special learning needs, the use of SFA to teach word knowledge had positive effects on vocabulary and reading comprehension. Among key ideas for effective ELL vocabulary instruction summarized from research, Helman (2008) suggested "vocabulary study built on students' background language such as with previews from home language and cognate identification" (p. 215). The SFA strategy may be modified for use with ELL students by translating the English key words into the home language of the students. Each key word would then appear on the matrix as a word in English and in the home language of the students. Further, the features or the characteristics of the category or topic should also be translated into the home language of the students.

An Application for Instruction and Learning in the Health Classroom

Students in the ninth grade were studying a unit on the importance and role of nutrition in maintaining a healthy lifestyle. Among the topics were the problems

that confront teenagers related to sustaining a balanced diet; the role of vitamins, minerals, nutrients, and fat in the functioning of the body; and planning diets that support a healthy and active body. Using the SFA matrix, the teacher selected key words from the assigned readings. She conducted an extensive discussion that provided the introduction of the vocabulary prior to the students' reading of the text. The students used the matrix during and after reading to further develop their understanding of the key words within the readings. Figure 4.2, Semantic Feature Analysis Matrix: Nutrition, shows how the students completed the chart during and after reading the text.

Figure 4.2 Semantic Feature Analysis Matrix: Nutrition

Key Words	Features							Notes
	Found in Foods	Found in Meat	Source of Nutrients	Aids in Body Functions	Eating Disorders	Necessary for Healthy Bodily Functioning	Components of Diets	Comment and Definitions
Calories	–	–	–	✓	–	✓	✓	As we move, work, sleep, etc., the body burns calories. They come from food.
Cholesterol	✓	✓	–	–	–	✓	✓	Found in blood. Come from different food products. Too much is not good.
Glucose	–	–	–	✓	–	✓	–	The body makes it.
Fats	✓	✓	✓	✓	–	✓	✓	There are different types of fat and not all fats are good for the body.
Fiber	✓	–	✓	✓	–	✓	✓	Fiber comes from certain foods, and it is very good for the body.
Anorexia	–	–	–	–	✓	–	–	Anorexia is an eating disorder where the person does not eat.
Minerals	✓	✓	✓	✓	–	✓	✓	Minerals are necessary to the body, and they come from food.
Vitamins	✓	✓	✓	✓	–	✓	✓	We can take vitamin pills but the best type comes from food. They are important for the body.
Bulimia	–	–	–	–	✓	–	–	Bulimia is an eating disorder where the person eats too much food and gets rid of it.

REFERENCES

Bailey, A. L. (2006). Teaching and assessing students learning English in school. In A. L. Bailey (Ed.), *The language demands of school: Putting academic English to the test* (pp. 1–26). New Haven, CT: Yale University Press.

Bos, C. S., Allen, A. A., & Scanlon, D. (1989). Vocabulary instruction and reading comprehension with bilingual learning disabled readers. *National Reading Conference, 38*, 173–179.

Bos, C. S., & Anders, P. L. (1990). Effects of interactive vocabulary instruction on vocabulary learning and reading comprehension of junior high school learning disabled students. *Learning Disability Quarterly, 13*(1), 31–42.

Brozo, W. G., & Simpson, M. L. (2003). *Readers, teachers, learners: Exploring literacy across the content areas*. Upper Saddle River, NJ: Merrill Prentice Hall.

Helman, L. (2008). English words needed: Creating research-based vocabulary instruction for English learners. In A. E. Farstrup & S. J. Samuels (Eds.), *What research has to say about vocabulary instruction* (pp. 211–237). Newark, DE: International Reading Association.

Herman, P. A., & Dole, J. (1988). Theory and practice in vocabulary learning and instruction. *Elementary School Journal, 89*, 43–54.

International Reading Association and National Council of Teachers of English. (1996). *Standards for the English language arts*. Newark, DE: International Reading Association & Urbana, IL: National Council of Teachers of English.

Ruddell, R. B., & Unrau, N. J. (2004). Reading as a meaning-construction process: The reader, the text, and the teacher. In R. B. Ruddell & N. J. Unrau (Eds.), *Theoretical models and processes of reading* (5th ed., pp. 1462–1521). Newark, DE: International Reading Association.

Tierney, R. J., & Readence, J. E. (2005). *Reading strategies and practices: A compendium* (6th ed.). Boston: Allyn & Bacon.

List-Group-Label (L-G-L)

Developing Conceptual Knowledge of Words

Strategy 5

List-group-label (Taba, 1967) strategy develops students' academic vocabulary by categorizing words into groups that relate to similar concepts. Through this process, students are required to activate their prior knowledge and engage in thinking about words in different ways. They connect their prior knowledge with new knowledge about words, thereby developing conceptual understandings useful for comprehending text.

Students begin brainstorming words associated with the topic, categorizing or grouping the words based on their similarities, and developing a label for each group of words that share related features. A number of variations of the strategy developed as a result of its use over time. For example, L-G-L was used as a minilesson before reading to help students make predictions about their text. Others (Boling & Evans, 2008; Massey & Heafner, 2004) have used the L-G-L strategy as a prereading strategy to assist students in activating their prior knowledge and making connections to the text. The L-G-L was also used as an assessment tool to determine students' word knowledge. Allen (2007) discussed how one teacher adapted L-G-L to assess students' prior knowledge of the related topics to be read as they were engaged in brainstorming words around the theme of the literature. L-G-L strategy was developed primarily for use in the social studies classroom. Since then it has been successfully applied in various content area classrooms such as science and the English language arts classroom.

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3. Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts. They draw on their prior experience, their interactions with other readers and writers, their knowledge of word meaning and of other texts, their word identification strategies, and their understanding of textual features (e.g., sound-letter correspondence, sentence structure, context, graphics).

12. Students use spoken, written, and visual language to accomplish their own purposes (e.g., for learning, enjoyment, persuasion, and the exchange of information).

STEP-BY-STEP PROCEDURE

To engage students at deeper levels, the L-G-L strategy is used as a before-, during-, and after-reading strategy along with a writing component as an extension for using vocabulary words (Harmon, Wood, & Hedrick, 2006).

BEFORE READING

During this phase, the teacher prepares the students for reading by engaging them in a discussion on the topic to activate their prior knowledge related to key words or concepts within the readings.

1. Before using the L-G-L strategy, the teacher chooses the topic of study (assigned readings) and carefully selects the key words required for comprehending the discussion and the readings.

2. To motivate and engage students in learning about the topic, the teacher selects an appropriate technique, such as a short podcast, a 5-minute segment of a video, a series of pictures, or a brief reading. The teacher then introduces the topic by connecting it to the motivational procedure that she used to help students think about the topic.

3. The teacher directs the students to work in small groups to brainstorm a *list* of words or terms that are related to the topic.

4. Each group then shares their list of words, as the teacher pronounces each word and writes it on an overhead, the chalkboard, SMART board, or large chart paper. At this point, the teacher begins to assess how much vocabulary building may be required before reading the text. Do students have an adequate store of words related to the central topic?

5. The students are then directed to work in small groups for the purpose of *grouping* the lists of words or word phrases.

   a. When L-G-L is used for the first time, the teacher may need to demonstrate the grouping process to the class, showing them how certain words or phrases may be similar and placed in the same group.

   b. As students work in small groups, the teacher may monitor students' discussions and use guiding questions that will help them group the terms. Questions the teacher poses to the students that may help to group terms are: "What two words are alike?" "Can you find another word that may be similar?" "How are the words alike?"

6. After the small groups have completed the process of grouping the words, they are asked to *label* each group. The teacher may need to use a think-aloud approach to demonstrate how to label each group of words or phrases, asking the following questions aloud: "What makes this first set of words similar?" "What word or phrase can I use as a label that fits all of the words in this group?"

7. The teacher revisits the initial group of words, asking the students how they grouped and labeled the words. Students are expected to tell why the words were grouped together.

8. At this point, the teacher decides whether it is necessary to expand students' knowledge of the key words or to include additional key words for instruction that are required for their comprehension of the text.

DURING READING

Before students read, the teacher reminds them that they will be reading about the topic that they have discussed and will encounter the key words that they grouped. To facilitate students' reading, the teacher will (a) encourage students to use stickies to jot down additional notes related to the concepts or key words that they grouped and labeled and (b) have students jot down unfamiliar words within their readings for further exploration.

AFTER READING

The teacher conducts a guided discussion with the class about their reading. Through posing questions about the reading, the students retell what they have read. Additionally, the class revisits the list of key words that they have grouped and labeled; the students then discuss each group of key word to do the following:

1. Confirm that each word belongs in the group and

2. Revise the group of words when necessary, adding or deleting words.

3. Revise the label for each group of words when necessary.

4. Develop other groups of words that were part of their readings related to the topic.

Extending L-G-L

One way that students acquire ownership of the content words that they have learned is to provide them with opportunities for using the key words. Such activities may be simple or elaborate depending on the topic of study. The teacher may ask the students to work in groups or work alone to do the following: (a) Have students create a poster that includes the key words to develop the ideas related to the topic and present it to the class, using the key words within their discussions or presentations. (b) Provide a prompt related to the topic of study and have students write a paragraph using the key words. (c) Using the key words, have students take notes in their learning logs on what they have learned from their readings and small- and large-group discussions. (d) Create word walls around the central concept or topic that is being studied, and have students add key words and new words along with contextual definitions to the word wall.

DIFFERENTIATING INSTRUCTION FOR STRIVING READERS

Strategies that employ classification and categorization skills are cognitively economical as students relate words they know to new words that are similar is some ways. This strategy is therefore especially helpful to the striving readers in expanding their academic vocabularies. One way to support students in content area classrooms in using the L-G-L is to have them partner with another student to complete the steps of the strategy. Additionally, providing students with useful prompts as they brainstorm the list of words and then group and label words will offer them the support they need.

CONSIDERING THE LANGUAGE NEEDS OF ELL STUDENTS

Source: International Reading Association and National Council of Teachers of English (1996).

IRA/NCTE Standards for the English Language Arts

10. Students whose first language is not English make use of their first language to develop competency in the English language arts and to develop understanding of content across the curriculum.

Students who are learning a second language have an especially difficult time in acquiring academic vocabulary. Researchers suggest that language-rich environments and strategies for developing word learning would benefit ELL students (Manzo, Manzo, & Thomas, 2009). The L-G-L strategy and follow-up activities offer English language learners the help they need to learn content area words. The teacher should consider the needs of ELL students when using L-G-L strategy by employing it as an assessment tool. When directing students to brainstorm words related to a specific topic, they may list words in their native language, which then will be translated for the students.

AN APPLICATION FOR INSTRUCTION AND LEARNING IN THE POLITICAL SCIENCE CLASSROOM

It is a presidential election year in the early month of October, and seniors in a political science class are reading newspapers and magazine articles, writing blogs, watching podcasts, and discussing various aspects of the election. The teacher is ready to introduce some of the rules and protocols that govern a national election. She directs students to brainstorm all of the words that they have heard and read about related to the election. Following the procedure for the L-G-L strategy, the teacher projects the words on an overhead as the students write them down. Students work in pairs or small groups and proceed with the next step. They find words that are similar in some way and group them. Finally, students label each group with a related word or phrase. After students have read their assigned readings from the text, the teacher conducts a discussion on the readings and key words. Their discussion moves from a retelling of the text to focus on how the

key words have been grouped and labeled. Students contribute new words to the list and make revisions to their groups. This application of the L-G-L strategy to political science may be found in Figure 5.1, List-Group-Label Chart: The U.S. Presidential Election.

Figure 5.1	List-Group-Label Chart: The U.S. Presidential Election

Topic: The United States Presidential Election Step 1 List Words		
Republican	Democrat	Party favorite
Vote	Delegates	Voter registration
Democrat	Electors	Primaries
Electoral votes	Voter registration	Ballot
Absentee ballot	Nomination	Early voting
President	Party choice	Vice president
Independent	Planks	Constitutional
GOP	Incumbents	Popular votes
Demographics	Debates	Voting polls
Landside win	Libertarian	Platform
Republican	Voting patterns	Electoral college

Topic: The United States Presidential Election Step 2 Group Words				
President	Republican	Primaries	Vote	Exit polls
Vice President	Democrat	Republican	Voter registration	Landslide
Incumbents	Independent	Democrat	Ballot	Voting patterns
	Libertarian	Delegates	Absentee ballot	Demographics
	Constitutional	Nomination	Early voting	
	GOP	Party favorite	Electoral votes	
		Party choice	Popular votes	
			Landside win	
			Voting polls	

Topic: The United States Presidential Election Step 3 Label Groups				
Candidate	*Party*	*Convention & Campaigns*	*Election*	*Election Results*
President	Republican	Primaries	Vote	Exit polls
Vice President	Democrat	Republican	Voter registration	Voting patterns
Incumbents	Independent	Democrat	Ballot	Demographics
	Libertarian	Delegates	Absentee ballot	Landslide win
	GOP	Nomination	Early voting	Marginal win
		Party favorite	Electoral votes	
		Platform	Popular votes	
		Planks	Voting polls	
		Debates	Electors	
			Constitution & Rules for voting	

REFERENCES

Allen, J. (2007). *Inside words: Tools for teaching academic vocabulary, Grades 4–12*. Portland, ME: Stenhouse.

Boling, C. J., & Evans, W. H. (2008). Reading success in the secondary classroom. *Preventing School Failure, 52*(2), 59–66.

Harmon, J. M., Wood, K. D., & Hedrick, W. B. (2006). *Instruction strategies for teaching content vocabulary: Grades 4–12*. Westerville, OH: National Middle School Association and Newark, DE: International Reading Association.

International Reading Association and National Council of Teachers of English. (1996). *Standards for the English language arts*. Newark, DE: International Reading Association & Urbana, IL: National Council of Teachers of English.

Manzo, A. V., Manzo, U. C., & Thomas, M. M. (2009). *Content area literacy: A framework for reading based instruction* (5th ed.). Hoboken, NJ: Wiley.

Massey, D. D., & Heafner, T. L. (2004). Promoting reading comprehension in social studies. *Journal of Adolescent and Adult Literacy, 48*(1), 26–40.

Taba, H. (1967). *Teacher's handbook for elementary social studies*. Reading, MA: Addison-Wesley.