



Effective Vocabulary Instruction for Kindergarten to 12th Grade Students Experiencing Learning Disabilities

Prepared by Beverly Weiser, PhD
Southern Methodist University
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Vocabulary knowledge is the single most important factor contributing to reading comprehension – Laflamme, 1997

The National Reading Panel of the National Institute of Child Health and Human Development (NICHD, 2000) identified vocabulary instruction as an essential skill that students need to improve reading performance. In fact, there is strong evidence to support providing vocabulary instruction not only to improve students' reading comprehension and writing quality, but also their listening vocabulary and their speaking vocabulary (Joshi, 2006; Kame'enui & Baumann, 2012). Vocabulary knowledge, including both oral and written vocabulary, is critically important for a child's success in school (Kamil et al., 2008).

Vocabulary learning research with students with learning disabilities over the last 25 years has repeatedly reported that teachers should provide students with (1) explicit vocabulary instruction, (2) repeated exposures to new words, (3) sufficient opportunities to use words in activities such as discussion and writing, and (4) strategies to help determine word meanings independently (Farstrup & Samuels, 2008; O'Conner, 2007). Further, research also supports pre-teaching the meanings of words that are critical for developing background knowledge and necessary to comprehend the main concepts of the text students will be reading. This is true for all school-age students, as well as across all content areas.

In this InfoSheet, answers to frequently asked questions will be discussed. Additionally, many effective research-based strategies and instructional routines will be provided to increase the vocabulary development of students with learning disabilities, especially in the area of reading comprehension.

What is vocabulary development?

Vocabulary development is a process of acquiring new words to use in daily life, and more specifically, the basis for learning any language. Vocabulary development focuses on helping students learn the meaning of new words and concepts in various contexts and across all academic content areas. Teaching students to develop vocabulary means providing explicit instruction on important words from text and teaching students strategies to help them learn

word meanings independently. It is critical for both oral and written vocabulary development to increase as students get older to enable them to comprehend increasingly more complex grade level text (Kamil et al., 2008; Loftus & Coyne, 2013).

Why is vocabulary development and knowledge important for students with learning disabilities?

- Students with learning disabilities often struggle with reading comprehension because they do not possess the oral vocabulary that is a prerequisite to their understanding and retention of content-area texts. Limited vocabulary knowledge can negatively impact the development of a student's reading comprehension skills.
- There is a strong relationship between vocabulary knowledge and reading comprehension; students need to understand the meaning of critical words they will be reading to promote comprehension. Vocabulary knowledge, along with background knowledge, provides students a better chance of understanding the text they read.
- Students who struggle with reading disabilities most often read less per day than their typically achieving peers, making it more difficult for them to acquire new vocabulary and comprehend academic text.
- Students with learning disabilities may have weak oral language skills which directly impacts their vocabulary development. A limited vocabulary hinders a student's ability to be successful in comprehending grade level text, participating in classroom discussions, and doing well on assignments, quizzes and tests. These deficiencies often increase over time, making the need for explicit vocabulary instruction even more pressing for students with language deficiencies due to learning disabilities or problems with language acquisition.

What is the importance of including vocabulary instruction across the content areas?

- Vocabulary knowledge aids in activating and building background knowledge to make connections to text, and having vocabulary knowledge can increase reading comprehension and fluency while reading.
- Vocabulary knowledge can improve writing skills and build knowledge of other word meanings through known root words, prefixes, suffixes, and word families.
- Content areas such as mathematics, science, history, music, reading and language arts, and others often require content specific vocabularies. For example, in mathematics, students must have a deep understanding of words such as *estimate*, *denominator*, *factoring*, and the like to be able to complete assignments; while in science, words such as *hypothesis*, *scientific notation*, and *magnesium* may be necessary to grasp the content of the text.

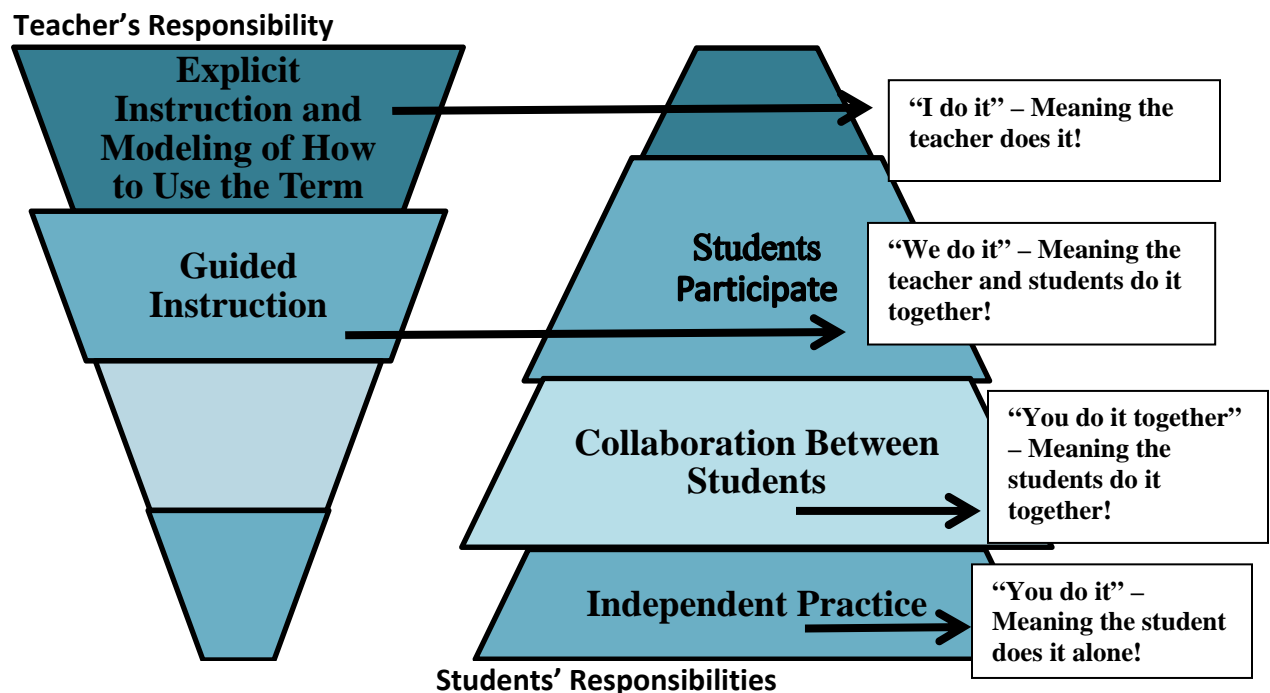
Is there a research-based way to teach vocabulary to students with learning disabilities to make sure that they are mastering the definition independently?

Yes, just as increasing vocabulary knowledge should occur on a continuous basis, so should vocabulary instruction. The following recommended four steps in teaching new vocabulary words will be described in further detail in this InfoSheet.

It is important that teachers make sure that their students:

1. Hear their teacher explicitly give a student-friendly definition and then see her or him model how the vocabulary term is used (Explicit Instruction of Using the Vocabulary Word Correctly: I do it).
2. Have opportunities to use new vocabulary while the teacher is there to “help with the tricky parts” and is circulating around the classroom to make sure that students are using the word correctly and giving corrective feedback when needed (Guided Instruction: We do it).
3. Are given lots of opportunities to clarify and refine meaning and usage in the company of peers – Students teaching other students how to use the word correctly/verifying the correct definition – Using oral language to communicate the meaning in different contexts and having groups of students complete assignments involving semantic mapping or other graphic organizers (Collaborative Learning: You do it together).
4. Practice use of the term in independent reading, writing, discussion, and assessment (Independent: You do it alone).

Below is a diagram that describes the above four steps in teaching vocabulary that was based on the research by Fisher and Frey(2008).



Is there a research-based vocabulary instructional routine that can be used with students with learning disabilities

Yes, Marzano (2004) has developed a six step process for teaching vocabulary to students of all ages. While the vocabulary needs of students increase over time, these same procedures can be used on a frequent basis with all students of varying abilities across all content areas.

Effective techniques for how to use these six steps follows the description of ***Marzano's Six Step Process for Teaching Vocabulary***.

A Six-Step Process for Teaching Vocabulary by Robert Marzano

Marzano's six steps for teaching new words can be used with all students (K-12), including those with learning disabilities. Use the first three steps to introduce new words to students. The next three steps give students multiple exposures of the new word for review and retention. An explanation of the six steps can be found at the website cited in the references under Marzano.

The six steps are as follows:

Step 1: **Explain**—Provide a student-friendly description, explanation, or example of the new term. (This is where the teacher explicitly states the definition that will make sense to her/his students.)

Step 2: **Restate**—Ask students to restate the description, explanation, or example in their own words. (Students could add the term to their notebooks or to a chart in the classroom, followed by the following step.)

Step 3: **Show**—Ask students to construct a picture, symbol, or graphic representation of the term. (If possible, ask students to come up with an antonym or synonym to the new word.)

Step 4: **Discuss**—Engage students periodically in structured vocabulary discussions that help them add to their knowledge of the terms in their vocabulary notebooks. (Have students use new words in oral sentences or use the new words in questions you ask your students.)

Step 5: **Refine and reflect**—Periodically, ask students to return to their notebooks to discuss and refine entries. (When another new word comes up, try to mention previously learned words as similar or different.)

Step 6: **Apply in Learning Games**—Involve students periodically in games that allow them to play with new terms. (Examples to try: Jeopardy, Name that Word, Bingo, and Concentration.) **Many games and activities can be found on this**

website:<http://esu4vocabularystrategies.wikispaces.com/Marzano+6+Step+Process>

What are some effective techniques to include in vocabulary instruction for students with learning disabilities? What are some evidence-based strategies that I can use to effectively follow Marzano's six-step process of teaching vocabulary to students?



Looking up words in dictionaries is not useful for teaching vocabulary!

Provide a student friendly description, explanation, or example of the new term.

- Provide a context for the term.
- Introduce direct experiences that provide examples of the term.
- Tell a story that integrates the term.
- Describe your own mental picture of the term.
- Find or create pictures that explain the term.

Ask students to restate the description, explanation, or example in their own words.

- Monitor and correct misunderstandings.
- Must be student's original ideas, not parroting the teacher.

Ask students to construct a picture, symbol, or graphic representing the word.

- Model, model, model.
- Provide examples of students' drawings (and your own) that are rough but represent the ideas.
- Draw an example of the term.
- Let them find a picture on the internet, if necessary.

Engage students periodically in activities that help them add to their knowledge of the terms.

- Identify synonyms and antonyms for the term.
- List related words.
- Sort or classify words.
- Compare similarities and differences.
- Find connections between words.
- Connect new words to existing knowledge and previously learned words.
- Give repeated exposure and practice in multiple oral and written contexts.
- Review words necessary for the understanding of content-specific text.

Periodically ask students to discuss the terms with one another.

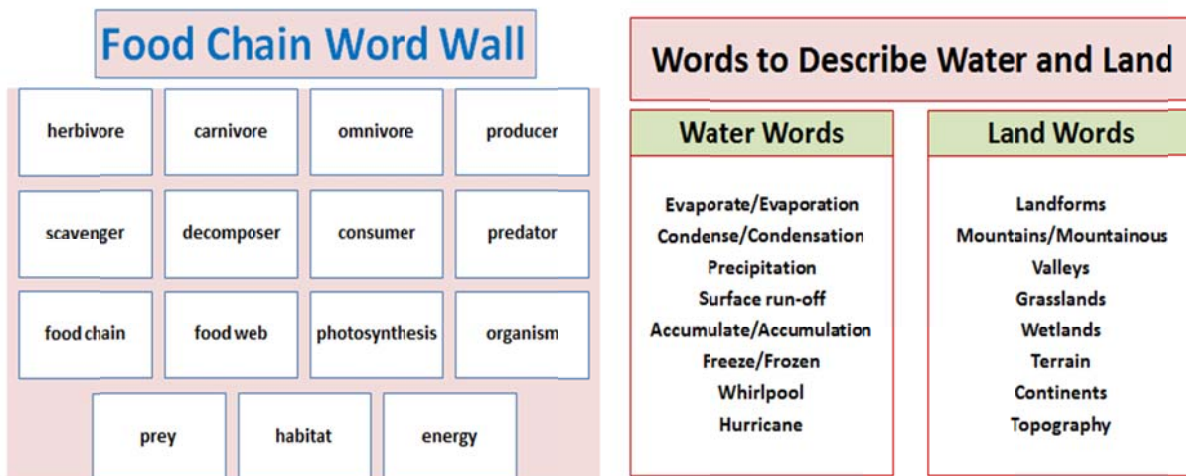
- Think-Pair-Share.
- Compare their descriptions of the term.
- Describe their pictures to one another.
- Explain to each other any new information they have learned ("aha's").

Example:

Courteous and drenched are connected because a courteous person will share his umbrella so someone doesn't get drenched.

What are Word Walls and why are they an important tool for teaching vocabulary to students with learning disabilities?

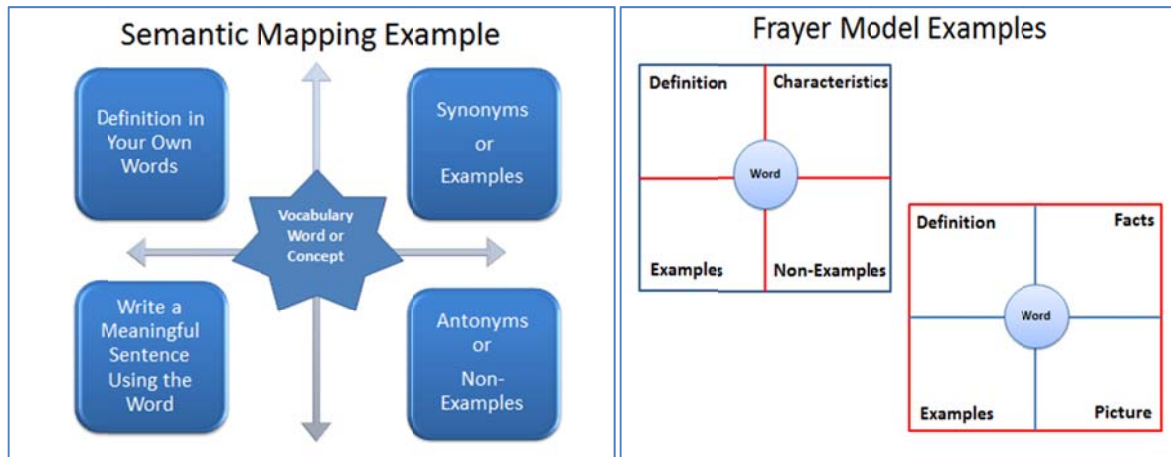
Word walls displaying previously taught vocabulary words provide a variety of benefits for students with learning disabilities. For example, having these words in a student's working environment can provide more exposures to important vocabulary and can allow for better retention. Additionally, students may use the words more often during discussion if they can see them, as well as use these terms in their writing without having to worry about the words' spelling. Word walls can be used in all content areas. Students could also make their own 'word walls' to keep out on their desk or in a notebook. Here are some examples of word walls; note that you would be putting words up on separate days after you teach them in class:



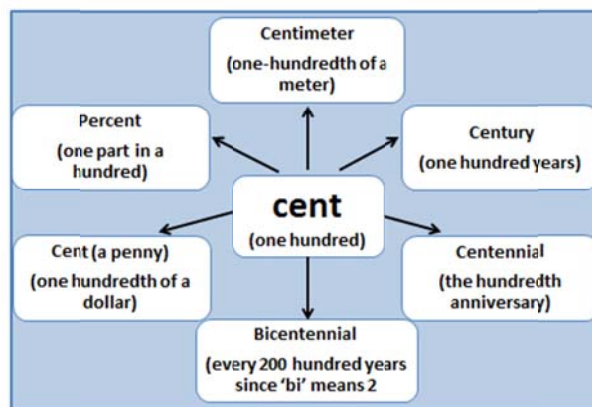
What are some effective vocabulary instruction strategies that can be used before, during, and after reading?

Before Reading Vocabulary Strategies

- Use explicit instruction to preteach unfamiliar important words from the text that will help build background knowledge, and those words that are critical for students' understanding of what they are reading.
- Help students relate new vocabulary to their prior knowledge and experiences, as well as to previously read text.
- In longer, multisyllabic words, teach meanings of root words, prefixes, and suffixes so that students can recognize these morphographs in unknown words to help them determine their meanings. Review these morphographs in new words that may be unfamiliar to students as needed.
- Have students use mapping techniques, such as Semantic Mapping, the Frayer Model, and other graphic organizers to help them think about other words that share the same meanings or that have the same roots. For example, teaching the root 'tele' which means from afar, can be used to teach *telescope*, *telephone*, *telepathic*, *television*, and *telegraph*. Repetition of using the root and its meaning is helpful for students for retention. Examples of these can be found below. These are easy for the students to draw on their own on paper or in their notebooks. Additionally, different directions can go in the boxes or boxes can be added or subtracted depending on the new word(s) or root(s) you are teaching or reviewing.



An Example of an Organizer with the Root 'cent'



During Reading Vocabulary Strategies

- Teach students to use prefixes, suffixes, and familiar word parts to decode new words and determine their meanings.
- Teach students how to use the structure of both narrative and expository text to figure out word meanings. Although this strategy does not always help with determining an unknown word's meaning, it is one that students should try to use while reading, especially on assignments done independently.
- Expand on word meanings that were defined in the textbook in context to ensure students' understanding of these new words.
- Have students add new words and concepts to their semantic maps and graphic organizers they began prior to reading.
- Use content-area word walls as a resource for students to use when they need help remembering a word's meaning (see section on Word Walls).

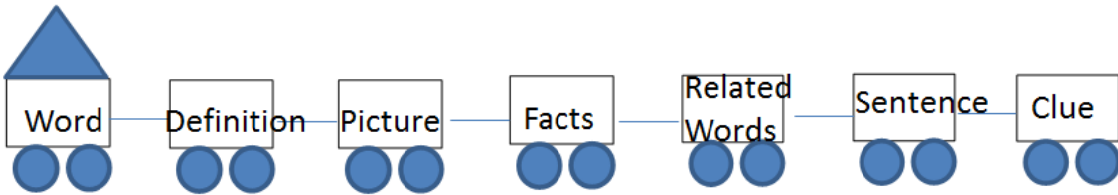
After Reading Vocabulary Strategies

- Have students use their own words to explain the meaning of new words in the way it was used in the text, as well as using it in other contexts.
- Play vocabulary games (e.g., using synonyms, antonyms, roots, concepts) to provide enrichment of new word meanings.
- Have students copy their word wall vocabulary (previously described) on a WORDO Sheet in any order that they wish. Play WORDO like Bingo, but instead of just calling out the word, say a short definition and then the students will cover the vocabulary word that matches the definition. Students can look for 'O' words in both columns. A WORDO sheet looks like this:

W	O	R	D	O
		Free Space		

- Provide numerous opportunities through activities, other readings, and writing to extend word knowledge and to develop a deeper understanding of new word meanings. For example, building 'Word Trains' can review meanings of specific important vocabulary or concepts across content areas. For this activity, students can draw seven boxes in a row, use index cards, use construction or notebook paper, use a vocabulary notebook, or they can use white boards.
 - Car #1 The student writes the new term or concept.
 - Car #2 The student writes a simple definition.
 - Car #3 The student draws a picture of the word.
 - Car #4 The student provides information about the word (examples: number of syllables, origin of the word, root words, etc.).
 - Car #5 The student will write some related words.
 - Car #6 The student writes a sentence using the word.
 - Car #7 The student thinks of a way to remember the word.

Students can do these in pairs, independently, or in a center. Here is an example of a Word Train:



More After Reading Activities

- Have students include two or more new words in one sentence to determine if they can compare/contrast similar or different meanings of words.
- Use the new vocabulary in discussion questions and in assignments for students to have more exposures to learn, write, and retain new words.
- Have students fill out a Semantic Feature Analysis Grid to review vocabulary and important terminology. An example classifying dinosaurs and another example of using critical vocabulary in a science class studying the differences between plant and animal cells follow.

A Sematic Feature Analysis Grid on Dinosaurs

	Herbivore – Plant Eater	Carnivore – Meat Eater	Omnivore – Ate Both	Had Scales	Weighed More than 500 pounds
Apatosaurus					
Ankylosaurus					
Stegosaurus					
Triceratops					
Tyrannosaurus Rex					

A Sematic Feature Analysis Grid Comparing and Contrasting Plant and Animal Cells

	Quick Definition	Plant Cells	Animal Cells	Both Plant and Animal Cells
Ribosomes	Protein Production	X	X	X
Chloroplast				
Nucleus				
Vacuole				
Cell Wall				
Cytoplasm				
Chloroplasts				
Cell Membrane				

What are some tips for selecting vocabulary to preteach using explicit instruction as well as strategies for retention of important vocabulary words?

- Focus on the words that are the most critical for understanding the text. Make sure to provide clear explanations of the words as they will appear in the text, but also give examples of the meaning in various other contexts.
- Select words that students will most likely come across in future readings or other courses.
- Allow students many opportunities to discuss, analyze, use, and compare words to encourage retention.
- Provide multiple exposures through reading, writing, listening, and talking for new words to become part of students' vocabularies.
- Use previously taught words as review to teach new words with similar or dissimilar meanings (e.g., synonyms and antonyms) or relationships (e.g., things found at a beach, science lab words, mathematical operations, non-living things, medical terms).
- Have students paraphrase definitions to evaluate their understanding of a word's meaning. Allowing students to use their own words increases connection making and retention.
- Supply pictures or short videos for unknown or more difficult words, especially with English Language Learners and students requiring visuals, to aid in both vocabulary and background knowledge.
- Provide cognates that have the same meanings for English Language Learners (e.g., doctor/doctor or music/música), but also point out the false cognates as well (e.g., pan is a cooking device in English, but means bread in Spanish).
- If possible, provide the word's meaning in a student's native language for English Language Learners already proficient in their first language.

What are some other effective research-based strategies for teaching vocabulary to students with learning disabilities?

Teaching students to analyze longer multisyllabic words by their meaningful word parts (i.e., morphemes) has been shown to be an effective way for students to determine the meanings of unknown words (see Nagy, Berninger, & Abbott, 2006; Reed, 2008). Morphemes refer to the smallest units of meaning that can be found in prefixes, suffixes, Greek and Latin root words, and base words. It is important to teach students strategies for determining meanings of unknown words (e.g., separating the prefixes and suffixes to help with defining the word; trying to find familiar word parts or roots to aid in deciding the meaning). See below for more details.

- Teaching and reviewing the most used prefixes and suffixes aids in vocabulary acquisitions. For example, the prefixes un-, in-/im-/il-/ir-, re-, dis-, and super- account for 97% of all printed words in English. Additionally, the suffixes -ed, -ing, -ly, and -s/-es make up 97% of all suffixed words in English. These should be taught and reviewed often. Ways to practice these can be with word walls, semantic mapping, and other graphic organizers previously discussed. Teach students to circle these prefixes and suffixes of unknown words to help them decipher their meaning.
- Teaching content specific Latin and Greek roots aids vocabulary development. For example, teaching the root 'bio', meaning life, makes words like *biography*, *biology*, and *biogeographer* easier to understand when reading. Going further and teaching the root

'graph' (to write) and the root 'ology' (the study of) makes interpreting the meanings of *biography*, *biology*, and *biogeography* even more comprehensible. A list of the most common Latin and Greek roots can be found at <http://www.readingrockets.org/article/40406/>

Where can other information, strategies, and instructional strategies be found to use with students with learning disabilities?

Consult the following recommended websites, publications, and books as additional resources for teaching vocabulary development.

Recommended Websites

<http://www.meadowcenter.org/search/results/search&keywords=vocabulary/> (A multitude of sources on vocabulary development instruction from this website provided by the Meadow Center and the University of Texas at Austin.)

<http://www.googlesyndicatedsearch.com/u/fcrr?q=vocabulary&sa.x=7&sa.y=7&sa=Google+Search&domains=www.fcrr.org&site=search=www.fcrr.org> (Over 670 links [by grade level and subject] to resources for teachers to use with vocabulary instruction from the Florida Center of Reading Research.)

http://www.readwritethink.org/search/?sort_order=relevance&q=vocabulary&srchgo.x=9&srchgo.y=7&old_q= (100s of Teacher Resources and Downloadable Lessons for Vocabulary Instruction from ReadWriteThink.org.)

Recommended Publications

The majority of these publications are available free of charge. Current links (as of August 2013) are listed for your convenience. ***If the link is no longer working, put the name of the publication in your browser to search for it.***

August, D., Carlo, M., Dressler, C., & Snow, C. (2005). The critical role of vocabulary development for English language learners. *Learning Disabilities Research & Practice*, 20(1), 50-57. Retrievable from <http://www.pebc.org/wp-content/uploads/2010/01/August-Critical-Role-Vocab-for-ELL-2005.pdf>

Bintz, W. P. (2011). Teaching vocabulary across the curriculum. *Middle School Journal*, 44-53. Retrievable from <http://littoolkit.pbworks.com/f/Middle%20School%20Vocabulary%20Strategies.pdf>

Boardman, A. G., Roberts, G., Vaughn, S., Wexler, J., Murray, C. S., & Kosanovich, M. (2008). *Effective instruction for adolescent struggling readers: A practice brief*. Portsmouth, NH: RMC Research Corporation, Center on Instruction. Available from <http://www.centeroninstruction.org/files/Adol%20Struggling%20Readers%20Practice%20Brief.pdf>

Denton, C., Bryan, D., Wexler, J., Reed, D., & Vaughn, S. (2007). *Effective instruction for middle school students with reading disabilities: The reading teacher's sourcebook*. Austin, TX: University of Texas System/Texas Education Agency. Retrievable from <http://buildingrti.utexas.org/PDF/RTS.pdf>

Farstrup, A. E., & Samuels, S. (2008). Essential strategies for teaching vocabulary. In A. E. Farstrup & S. Samuels (Eds.), *What research has to say about vocabulary instruction* (pp. 83-112). Newark, DE: International Reading Association. Retrievable from http://www.sagepub.com/upm-data/40627_4.pdf

Foil, C. R., & Alber, S. R. (2002). Fun and effective ways to build your students' vocabulary. *Intervention in School and Clinic*, 37(3), 131-139. (Free for CLD members.)

- Jitendra, A. K., Edwards, L. L., Sacks, G., & Jacobson, L. A. (2004). What research says about vocabulary instruction for students with learning disabilities. *Exceptional Children*, 70(3), 299-322. Retrieval from <http://te408-special-education-modules.wikispaces.com/file/view/What+research+says+about+vocabulary+instruction+for+students+with+learning+disabilities.pdf>
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- Kamil, M. L., Borman, G. D., Dole, J., Kral, C. C., Salinger, T., & Torgesen, J. (2008). *Improving adolescent literacy: Effective classroom and intervention practices: A Practice Guide* (NCEE #2008-4027). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Retrieval from http://ies.ed.gov/ncee/wwc/pdf/practice_guides/adlit_pg_082608.pdf
- Kosanovich, M. L., Reed, D. K., & Miller, D. H. (2010). *Bringing literacy strategies into content instruction: Professional learning for secondary-level teachers*. Portsmouth, NH: RMC Research Corporation, Center on Instruction. Retrieval from <http://www.centeroninstruction.org/files/Bringing%20Literacy%20Strategies%20into%20Content%20Instruction.pdf>
- Marzano, R.J. (2004). A six-step process for teaching vocabulary. In R. J. Marzano (Ed.), *Building background knowledge for academic achievement*. Alexandria, VA: Association for Supervision and Curriculum Development. A copy of this process can be retrieved from http://rigby.hmhco.com/NR/rdonlyres/DDFF43E8-C6E1-419B-9943-AD71926E3D8B/0/marzano_mong.pdf
- National Institute for Literacy. (2007). *What content area teachers should know about adolescent literacy*. Jessup, MD: EdPubs. Retrieval from http://lincs.ed.gov/publications/pdf/adolescent_literacy07.pdf (Chapters on Vocabulary and Morphology.)
- Padak, N., Newton, E., Rasinski, T., & Newton, R. M. (2008). Getting to the Root of Word Study: Teaching Latin and Greek Word Roots in Elementary and Middle Grades. In A. E. Farstrup & S. Samuels (Eds.), *What research has to say about vocabulary instruction* (pp. 6-31). Newark, DE: International Reading Association.
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Recommended Books:

- Bear, D., Invernizzi, M., Templeton, S., & Johnston, F. (2012). *Words their way: Word study for phonics, vocabulary, and spelling instruction* (5th ed.). Upper Saddle River, NJ: Allyn & Bacon/Merrill – Pearson.
- Beck, I. L., McKeown, M. G., & Kucan, L. (2013). *Bringing words to life, second edition: Robust vocabulary instruction*. New York, NY: Guilford Press.
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- Honig, B., Diamond, L., & Gutlohn, L. (2008). *CORE: Teaching Reading Sourcebook: For all educators working to improve reading achievement*. Novato, CA: Arena Press.
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Note. The first edition of this InfoSheet was prepared by Diane Pedrotty Bryant, Judy Englehard, and Linda Reetz.

Other InfoSheets are available on our website (<http://www.cldinternational.org>)