



Massachusetts Reading Association
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Research-based Practices in Vocabulary Instruction:

An Analysis of What Works in Grades PreK-12

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of the Massachusetts Reading Association

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Introduction

The first decade of the twenty-first century is already behind us, and it has been characterized by increased attention to student achievement due to the No Child Left Behind legislation and a persistent achievement gap for children of color, those from families with low socioeconomic status (SES), and for English Language Learners (ELLs). During this time there has been widespread acknowledgement that literacy development continues beyond elementary school, resulting in more attention to adolescents' reading comprehension and the literacy demands in the content areas. Two of the most important contributors to students' reading comprehension and academic success are the volume of their vocabulary upon entering school and their ability to learn new vocabulary, with that learning enduring over time. A paucity of vocabulary knowledge in their first language (L1) and their second language (L2) is particularly problematic for ELLs.

The members of the Massachusetts Reading Association Studies and Research Committee set out to determine what research from 2000 to 2010 says about vocabulary instruction. Our review revealed several categories of best practices for teaching all students, and specific considerations for working with special populations including at-risk learners, ELLs, and students with learning disabilities, as well as recommendations for content-area vocabulary instruction. The review also prompts a suggestion of what not to do, specifically, avoid drill and practice! The commonly held understanding that wide reading and independent reading help build students' vocabulary knowledge still holds, but it is now understood that struggling readers and students with poor vocabulary skills do not read enough and do not have enough of a vocabulary foundation to independently learn enough vocabulary on their own to catch up to their peers. This means that vocabulary instruction must be deliberate, include direct instruction, and in some instances involve small group interventional instruction in order to adequately support and accelerate these students' vocabulary development.

In general, schools should be language-rich environments where teachers and students attend to and celebrate language in all forms and contexts including orally, in writing, while reading, and in specific content

areas. (For more information see Blachowicz, Ogle & Watts-Taffe, 2006; Vitale & Romance, 2008; Wood, Harmon & Hedrick, 2004).

The following sections provide a synthesis of the research findings, specific suggestions teachers can use in their classrooms, recommendations for supporting the vocabulary development of Special Needs students and English Language Learners, content area vocabulary instruction, and school-level considerations. A brief explanation for each category is provided and interested readers can use the Reference section to locate original research articles for more details.

Vocabulary Instruction

Effective vocabulary instruction is multidimensional and intentional. It is most effective when addressed on a school-wide basis and then implemented with consistent intensity across grades or subjects and within grade level classrooms. A school-wide, or district-wide commitment to research-based vocabulary instruction can ensure that there are consistent practices in all classrooms and that there is a cumulative effect on the development of students' vocabulary across subjects and over the years. By creating language-rich learning environments where interesting, unusual, useful, emotional, controversial, and difficult words are noticed and celebrated, students become more attuned to language and accustomed to using sophisticated and academic language. A well-conceived plan for effective vocabulary instruction should include teacher input and will require training for all teachers. Professional development that informs teachers about research-based alternatives to the traditional 20-word vocabulary test will help ensure that all teachers are equipped with the knowledge to make word-learning meaningful (Baumann, Ware, & Edwards, 2007; Graves, 2009; VanDeWeghe, 2007). The two biggest considerations when planning effective vocabulary instruction are the selection of words to teach and the instructional practices used to help students learn. A synthesis of the research for each of these considerations follows.

A. Word Selection

- The formal study of words has moved away from the practice of creating a large list of disconnected and de-contextualized words that is presented to students on Monday and tested on Friday, to practices that stress conceptual knowledge of words and how words are related. Research recommends that students learn fewer words but that they know how words and the English language work so that they can infer the meanings of new words. Effective vocabulary instruction is characterized by deliberate selection of words to be taught and frequent opportunities for students to interact with the words in meaningful contexts. Interacting with words in multiple ways and in varied contexts results in durable word learning.
- Both teachers and students should be involved in the selection of words for study. Including students in the selection process helps to make the purpose for learning personal and therefore meaningful, it elevates their metacognition while reading and increases their awareness of words and the way language works. (Ruddell & Shearer, 2002).
- With so many words in the English language, it seems daunting to know which words to choose for instruction. Teachers' subject area knowledge, ability to identify important terms and concepts in texts, and knowledge of their students are all factors that impact the selection of words to be studied. A good place to start is to determine which common academic words, including content area words, students will encounter most, or that will be most crucial to their learning in a given period of time (e.g. academic quarter, unit of study, academic year), and build from there. Choose words that apply across content areas and that represent important concepts. The following six-step process can help determine which words to teach:
 1. Read text selection(s) in advance to determine instructional purpose
 2. Identify words or concepts students need to know
 3. Identify connections and relationships between words or concepts chosen for instruction
 4. Choose words students must know prior to reading

5. Decide which words students only need to know incidentally and therefore do not require direct teaching
6. Determine what you want the children to learn

Following these steps helps sharpen the instructional focus on the most important words that students must learn and it provides teachers with opportunities to form important conceptual links between units of study or subject areas. (For more information see Carreker, Thornhill & Joshi, 2007; Flanigan & Greenwood, 2007; Gardner, 2007; Graves, 2009; Kindle et. al, 2009; Ruddell & Shearer, 2002; Santoro, Chard, Howard & Baker, 2008; Townsend, 2009; VanDeWeghe, 2007; Vitale & Romance, 2008; Wood et al., 2004).

B. Instructional Practices

Just like with reading instruction, vocabulary instruction should involve cognitive skills instruction. We want students to draw on their background knowledge, be metacognitive as they encounter new words, notice things about words, predict and infer meanings, question the use of specific words, analyze words and parts of words, make judgments about the selection and use of certain words, and evaluate theirs' and others' use of words. Instruction should include opportunities for students to work with words in multiple ways, including identifying synonyms and antonyms, looking for roots and using cognates, and connecting new words to known words. (For more information see Boulware-Gooden et al., 2007; Harmon, Wood & Kiser, 2009; Kindle et. al, 2009; Ruddell & Shearer, 2002; Santoro et al., 2008; VanDeWeghe, 2007; Vitale & Romance, 2008; Wood et al., 2004).

- Vocabulary instruction should support students as independent learners by helping them develop strategies for learning words that can be applied in any context and as they move through their educational careers. Instruction should include the following aspects of words and language usage:
 1. Word families
 2. Affixes (prefixes, suffixes), derivational affixes (affix changes part of speech e.g. joy-joyful), inflectional affixes (-s noun plural, -'s noun possessive, -s verb present tense third person singular, -ing verb present participle/gerund, -ed verb simple past tense, -en verb past perfect participle, -er adjective comparative, -est adjective superlative)
 3. Synonyms and antonyms
 4. Cognates (words that have similar origins) including Greek and Latin roots
 5. Multiple meanings
 6. Idioms and figurative speech

- Rote memorization does not help students retain vocabulary knowledge over time, but activities that provide them with opportunities to work frequently with words and concepts and connect them to other words and concepts do result in more sustained learning. Teachers should create both direct and incidental word learning opportunities by using and discussing words in casual interactions as well as providing explicit vocabulary instruction. Word learning can be fun, engaging and interesting when it involves games and hands-on strategies. Active learning strategies to support students' vocabulary growth include the following activities:
 7. Reading
 8. Writing
 9. Listening
 10. Discussing words and language
 11. Acting out words
 12. Visual imagery (visually representing a word and it's meaning)
 13. Classifying words by parts of speech, meaning, pronunciation, endings, root, emotion, etc.

14. Semantic word mapping (connecting words or concepts using a graphic organizer) (Boulware-Gooden et al., 2007). See a description at <http://www.learningpt.org/literacy/adolescent/strategies/semantic.php>
 15. Semantic feature analysis (an examination of related concepts). See an example at <http://www.readingquest.org/strat/sfa.html>
 16. Morphemic analysis (finding small units of meaning in a word). See a sample lesson at <http://www.readwritethink.org/classroom-resources/lesson-plans/rooting-meaning-morpheme-match-880.html>
- Word Walls are now common fixtures in elementary classrooms as they provide a visual reminder of sight words, spelling words, concepts, and content-area words. Word Walls are also appropriate for use in middle and high school in English/Language Arts and content area classes because they reinforce the increasingly complex language students encounter in those subjects. Word Walls should be created with students and should change as new content is learned or once students no longer need the visual reinforcement. By including co-created definitions in the students' own words along with visual representations of word meanings, Word Walls in the intermediate and secondary grades support the language development of all students, especially ELLs and struggling readers. The following steps (Pierce & Fontaine, 2009) illustrate the Word Wall process in the intermediate and secondary grades:
 1. Select a few critical words to teach
 2. Introduce words through instructional context (a teacher-written paragraph that uses each word followed by a discussion with students to co-construct the word meaning)
 3. Students each write one word and definition on a card to add to the Word Wall. When creating the card, they choose a color to be used to write the word and select a symbol to represent the word meaning. They connect the word to other known words and include a connection to a context on the card.
 4. Students engage in word study activities such as completing prompts or writing word associations.
 5. Students share the word meanings and their work with the class.
 - Most word learning is achieved incidentally and through context, particularly through oral language and listening to texts read aloud. There are far too many words to teach all of them individually, so teachers need to use methods that promote both incidental learning and direct instruction. Read Alouds are an effective way to achieve both of these goals. Read Alouds are most often found in the primary grades, but they can be effective with any age group depending on how the teacher structures the word-learning component of the Read Aloud. Read Alouds are appropriate for all ages because the language used in books is more formal and contains more sophisticated syntax and word choices than every day conversation. The key is for teachers to carefully identify which words to attend to during the Read Aloud. The chosen vocabulary words should be central to understanding the text and infused into instruction and practice in the classroom before, during, and after the book has been read to students. Teachers can explain words in child-friendly terms and augment these definitions with comprehension questions throughout the reading process. Read Alouds are an opportune time to encourage students' active engagement in discussing the meanings of the new words. Reinforce the vocabulary learned during Read Alouds during other times of the day and allow students to further explore connections to the new words. (For more information see Kindle et al., 2009; Santoro et al., 2008; Vitale & Romance, 2008; Walsh, 2009).

Supporting Students with Extra Educational Needs

Classrooms across the state, and indeed across the country are a wonderful microcosm of our increasingly diverse society. This diversity not only includes students from different racial and ethnic groups, but children with different learning needs and challenges. The concept of differentiated instruction that addresses the needs of all students works hand-in-hand with the Response to Intervention (RtI) model that

identifies three tiers of instruction: Tier 1 represents instruction that focuses on the core curriculum and is used with all students; Tier 2 which provides supplemental small group interventions for a short period of time for struggling or at-risk students; and Tier 3 which provides more intensive, long-term support for struggling students (Massachusetts Department of Elementary and Secondary Education, 2009). Our review of the research suggests the following characteristics for vocabulary instruction with certain identified groups of students.

A. **At-Risk or Struggling Readers**

The research is clear that early identification of at-risk students is imperative, as is research-based small group instruction that supplements the whole class instruction. The goal is to get these at-risk learners caught up to their peers, which means their learning has to be accelerated. Failure to identify these students at an early age and to provide targeted, robust instruction may result in the students getting further and further behind as the years progress - this is known as the Matthew Effect.

- Using the format and terminology of the RtI model, researchers have determined that whole group/class (Tier 1) instruction alone is not enough to help at-risk students develop and accelerate their vocabulary development. Primary grade students need robust Tier 1 general class instruction along with Tier 2 small group intervention instruction over a sustained period of time in order to see gains in vocabulary learning that is maintained over time. The Tier 2 instruction must be carefully planned and executed for a long enough period (more than 4-6 weeks) in order to achieve positive achievement results for at-risk students. Vocabulary instruction that includes these four components has been shown to be effective with all students, but can help accelerate vocabulary growth for students who are below-average in vocabulary knowledge on pre-tests:
 - a. Provide rich, varied language experiences
 - b. Teach individual words
 - c. Teach word-learning strategies
 - d. Foster word consciousness
- (For more information see Loftus, Coyne, McCoach, Zipoli & Pullen, 2010; Pullen, Tuckwiller, Konold, Maynard & Coyne, 2010).
- The Vocabulary Self-Collection Strategy (VSS) has been shown to improve at-risk middle school students' vocabulary knowledge (Ruddell & Shearer, 2002). The procedure involves the following steps:
 1. Students choose a word to study for the week. The word may come from their life or any school subject
 2. Students nominate the word for study and explain to the class where they encountered the word and why it should be included in list for the week
 3. Each student identifies what s/he thinks the word means and then the class refines the definition through discussion (dictionaries are consulted as a last resort)
 4. During the week the students work with the words by completing activities such as semantic maps and semantic feature analysis, and adding them to their vocabulary journals
 5. A weekly test assesses students' ability to spell, define, and use the word in a meaningful sentence
 6. Every three weeks the students are given a test on a random selection of words from previous weeks.

B. **English Language Learners**

- According to the most recent information available from the Massachusetts Department of Elementary and Secondary Education (2011) 16% of students in the state speak another language other than English as their first language. A look at district data reveals this number reaches as high as 84% in an individual school (http://profiles.doe.mass.edu/state_report/selectedpopulations.aspx). This suggests educators need

to consider the implications for instruction and seek out proven methods to support ELLs' acquisition of English.

- Students with good first language skills are more successful learning a second language (L2), therefore teachers need to determine L2 learner's first language skills in order to develop effective instruction in the second language. Young children who have an average-to-above average receptive vocabulary in their first language (L1) are more likely to have a higher rate of cross language transfer (CLT) to a second language. Schools can work to create relationships with students' parents through parent workshops and outreach programs that encourage parents to speak and read to their children in their first language in order to set the foundation upon which their second language skills will be built.
- Some research has found that L2 students' ability to articulate English sounds has a strong influence on Kindergarten and first grade students' phonemic awareness and beginning word-reading abilities. Recommended practices include a focus on English articulation for young L2 learners, such as making associations between known words and new words and the corresponding articulation. Bridging activities where bi-lingual teachers supplement the English-speaking teacher's instruction in English with vocabulary connections to the students' first language (i.e. Spanish) can produce positive results with PreK-First grade children. Language development happens gradually and L2 children need to be exposed to oral language that features rich and expansive vocabulary use in order to make connections between words.

The Commonwealth of Massachusetts has mandated the implementation of Sheltered English immersion as the appropriate instructional strategy for teaching English language learners. In this model all students are taught in English with the support of an English as a Second language teacher (ESL) collaborating with the classroom/content area teachers. (Massachusetts Department of Education, 2008) The basic tenets of Sheltered English Immersion are to develop students' English language skills in all subjects by providing comprehensible input. This comprehensible input is based on English vocabulary development using instructional strategies, such as oral interaction between the students and the teacher and among students, grouping configurations of students, wait time, and opportunities for students to clarify key concepts (Vogt et al., 2009, p. 7).

Learning the vocabulary of a language is essential to language learning. Therefore, the principles of effective vocabulary instruction cited above are essential for ELLs. In addition, these learners need opportunities to build their oral vocabulary and background knowledge both of which can be enhanced by experiential learning, realia, group projects, and opportunities to talk in English in an instructional environment where it is safe to make mistakes.

- When planning vocabulary instruction that is responsive to the needs of ELLs, consider the input and output demands of vocabulary acquisition for these students. For vocabulary input, present new words frequently and repeatedly. Connect new words to known words and word meanings to aid students' comprehension. Output refers to what teachers ask students to do or produce. In this instance, teachers should limit forced output and semantic elaboration during the early stages of learning new words. The vocabulary instruction should progress from frequent and active teacher support and less demanding student tasks to less teacher involvement and activities with higher demands on student output.
- ELL children *can* learn at the same rate as their English-Only peers when provided with instruction that has breadth and depth, includes direct instruction and uses a multimodal approach, including songs, games and visual supports, to provide many avenues for student success. Many of the elements of vocabulary instruction that are recommended for all students are particularly important to include when teaching ELLs, especially frequently used words and cognates. Read Alouds of both fiction and

nonfiction help support ELL's vocabulary acquisition since receptive language develops prior to expressive language.

- Effective vocabulary instruction for ELL students includes the following characteristics: (Silverman)
 1. Introduction of words through the rich context of authentic children's literature
 2. Clear, child-friendly definitions and explanations of target words
 3. Questions and prompts to help children think critically about the meaning of words
 4. Examples of how words are used in other contexts
 5. Opportunities for children to act out the meaning of words when applicable
 6. Visual aids illustrating the meaning of words in authentic contexts other than the book in which the word was introduced
 7. Encouragement for children to pronounce words
 8. Guidance for children to notice the spelling of target words
 9. Opportunities for children to compare and contrast words
 10. Repetition and reinforcement of the target word

- (For more information see Atwill, Blanchard, Gorin & Burstein, 2007; Barcroft, 2004; Blachowicz et al., 2006, Lugo-Neris, Jackson & Goldstein, 2010; Roberts, 2005; Silverman, 2007; Townsend, 2009; Wallace, 2007).

A. Students with Identified Learning Disabilities

- Our review turned up a small number of research studies that focused on students with learning disabilities. While few in number, there were some common elements mentioned in other areas of this report and some useful recommendations for educators.

- Whole class instruction is often not an effective way to meet the need of learning disabled (LD) students, nor is independent word study (think of the list of 20 words to be memorized during the week). Small group or individualized instruction that targets the particular learning needs of these students through the use of computer assisted instruction (CAI), fluency building, concept enhancement using semantic feature analysis and semantic maps, and mnemonic devices with visual aides have all been effective in increasing the vocabulary achievement of LD students. As is the case with typically developing students, interactive instruction that makes connections between words is preferable to rote memorization. Some LD students may need more exposure to unusual spelling/phonetic patterns in order to help them make adequate progress.

- (For more information see Bryant, Goodwin, Bryant & Higgins 2003; Munson, Kurtz & Windsor, 2005).

Content Area Vocabulary Instruction

Beginning in the intermediate grades (4-5) and continuing into middle and high school, students are exposed to more domain-specific language in their content area subjects. As has been recommended elsewhere in this research summary, content area teachers should carefully and deliberately select words for instruction and provide students with multiple exposures to words in different contexts. In any given text or unit of study there will be words that are essential to understanding the topic, and others that are incidental. When choosing vocabulary words that students must know, it is recommended that content-area teachers focus on key conceptual words and provide instruction and learning opportunities that connect these words to meaningful contexts.

It is helpful for content area teachers to be aware of the different stages of knowing words so that they can plan their instruction and assessments with consideration of these stages (Dale, 1965):

- e. Don't know word – never saw it before
- f. Have heard of the word but don't know the meaning
- g. Can define the word in general terms
- h. Know the word well and can use it appropriately

B. Content Area Instructional Practices

Students should work with the vocabulary in meaningful ways, such as using semantic maps, making associations, and creating Word Walls. A pre-reading strategy called “Possible Sentences” requires student pairs to define a word they will encounter in a text and write a sentence that they think they might find within the text using the target word (see an explanation at <http://www.adlit.org/strategies/19782>). This provides them with some background knowledge prior to reading and sets a purpose as they look for the word once they begin reading. (For more information see Baumann, Ware & Edwards, 2007; Flanigan & Greenwood, 2007, Harmon et al., 2007; Pierce & Fontaine, 2009; Ruddell & Shearer, (2002; Spencer & Guillaume, 2006; Stahl & Bravo, 2010; Wood et al., 2004).

- As has been previously recommended, assessment of vocabulary knowledge, even in the content areas should be tied to instruction and should be multidimensional, consisting of more than just a word list and definitions. Semantic maps, as one example, can be used to assess students' vocabulary development in the content-areas.
- We located one article that specifically focused on math vocabulary and one on science vocabulary. The recommendations are summarized here:
 - i. Math (Pierce & Fontaine, 2009)
 - Along with the increasing cognitive demands of more abstract math concepts and complex algorithms, math word problems get more difficult as students get older and their comprehension of these problems is highly dependent on their vocabulary knowledge. The best way to work through domain-specific vocabulary is to begin by providing student-friendly definitions of key words using every day language. Students can, and should, be involved in this process. Teachers should identify words that are math specific and those that are somewhat ambiguous or have multiple meanings and therefore need to be defined in a math sense. A Word Wall of the different categories of math terms – math-specific and ambiguous/multiple meaning words will help provide a visual reminder of the meanings for students as they deepen their topical knowledge.
 - j. Science (Spencer & Guillaume, 2006)
 - This study identified elements of the learning cycle to help students develop science vocabulary. The recommendations below share characteristics of good vocabulary instruction as mentioned in previous sections of this report:
 1. Engage with words (e.g. predict meanings, develop lists, activate background knowledge)
 2. Explore word meanings
 3. Develop new knowledge (e.g. revisit, refine meanings; make analogies, act out meanings)
 4. Apply new word knowledge in novel and meaningful ways.

Web-based Resources

Many of the ideas mentioned for effective vocabulary instruction can be found online. A selection of model lessons and other instructional ideas are listed in Table 1.

Table 1:
Vocabulary Resources

Topic	Grade/Group	Title	URL
Oral Language	PreK-1	Learning to Talk and Listen	http://lincs.ed.gov/publications/publications.html
Vocabulary	PreK-2	Vocabulary Instruction	http://www.readingrecovery.org/reading_recovery/federal/Essential/vocabulary.asp
Read Aloud	PreK-8	Recommended Titles for Read Aloud	http://www.carolhurst.com/profsubjects/reading/readingaloud.html
Cognates	3-12	Latin Cognates	http://www.qualityquinn.com/Documents/latin_cognates.html
Concept Maps	3-12	Basics of mind/concept mapping	http://www.studygs.net/mapping/
Synonyms	4-8	Using Word Webs to Teach Synonyms for Commonly Used Words	http://www.readwritethink.org/classroom-resources/lesson-plans/using-word-webs-teach-282.html
Vocabulary	6-12	What Content Area Teachers Should Know About Adolescent Literacy	http://lincs.ed.gov/publications/publications.html
Vocabulary	All ELL	A Focus on Vocabulary	http://www.prel.org/products/re_ES0419.htm
Vocabulary	All LD	The Clarifying Routine: Elaborating Vocabulary Instruction	http://www.ldonline.org/article/5759
Vocabulary	All	Multiple resources	http://www.literacy.uconn.edu/compre.htm
Vocabulary	All	Multisensory Vocabulary Instruction	http://www.readingrockets.org/article/286/
Vocabulary	All	Vocabulary Instruction	http://www.nichd.nih.gov/publications/pubs/PRF-teachers-k-3-vocab.cfm

Conclusion

The research articles examined for this review explored vocabulary instruction with different groups of students, different grade levels and content areas, and were conducted by experts from different specialties in the field of education. Yet similarities in the recommendations were found across these studies. The recommended practices focus on deliberate word selection by teachers and active student engagement with words and the way language works. The recommended practices for different grades and groups are summarized in Table 2.

Table 2:
Recommended Vocabulary Practices

	Grade				Subject	Special Groups		
	PreK-2	3-5	6-8	9-12	Content Areas	At-Risk/ Struggling Readers	ELL	LD
Act Out Words	X	X	X	X	X	X	X	X
Affixes	X	X	X	X	X	X	X	X
Analogies		X	X	X	X	X	X	X
Cognates & Roots		X	X	X	X	X	X	X
Computer Assisted Instruction								X
Idioms & Figurative Language	X	X	X	X	X	X	X	X
Kid-friendly definitions	X	X	X	X	X	X	X	X
Mnemonic Devices								X
Morphemic Analysis	X	X	X	X	X	X	X	X
Multiple Meanings								
Oral Language Exposure & Practice	X	X	X	X	X	X	X	X
Read Alouds	X	X	X	X	X	X	X	X
Semantic Feature Analysis		X	X	X	X	X	X	X
Semantic Maps		X	X	X	X	X	X	X
Small Group Intervention Instruction						X	X	X
Synonyms & Antonyms	X	X	X	X	X	X	X	X
Visual Representations	X	X	X	X	X	X	X	X
Whole Class Language Instruction	X	X	X	X	X	X	X	X
Word Families	X	X				X	X	X
Word Walls	X	X	X	X	X	X	X	X

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