



Effective Vocabulary Instruction: Building Academic Vocabulary Knowledge with Greek and Latin Roots

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Abstract: Knowledge of academic words and their meanings is increasingly recognized as an important focus of effective vocabulary instruction. Given that over seventy-six percent of academic words share common morphological roots and that more than ninety percent of discipline specific words are of Greek or Latin origin, it is important for educators to build student knowledge of roots. This article presents research-based information about this important component of vocabulary instruction, key terms, guidelines, and instructional tasks that build students' knowledge of Greek and Latin roots.

Keywords: vocabulary instruction, Greek and Latin roots, academic vocabulary knowledge

1. INTRODUCTION

Vocabulary is the foundation of literacy. Whether speaking, listening, reading, or writing, the basic building block is a *word*. Words are the “tools of thought” through which people do most of their thinking and grasp the thoughts of others (Wilson, 2021). Hence, vocabulary is viewed as word knowledge and even world knowledge. A larger body of vocabulary or word knowledge promotes greater comprehension when listening to others or reading texts and enhances expression when speaking or writing, a fact emphasized by Mark Twain, “The difference between the almost right word and the right word is really a large matter. ‘tis the difference between the lightning bug and the lightning” (Loeb, 1996).

Development of vocabulary knowledge is a life-long endeavor as it is an unconstrained knowledge set, meaning our knowledge of words (or lexicon) is ever growing and deepening. In part, this is due to the sheer number of words and that vocabulary changes over time. For example, consider that Merriam-Webster's 2023 English dictionary has over 476,000 entries, including 690 newly added words such as “simp” (excessive devotion) and “zhuzh” (small improvement). Furthermore, increasing our knowledge of words and our usage is a life-long endeavor due to the nature of vocabulary knowledge itself. An often-cited definition of vocabulary was presented in the seminal work of Snow, Burns, and Griffin (1998): “stored information about the meanings and pronunciation of words” (p. 46). Marzano (2004) explained that words are labels for our knowledge packets; the more words we have, the more packets of knowledge, the more background knowledge. Thus, the more experiences a person has with a word, the greater the understanding of the word. This is why knowledge of a word should be viewed as incremental based on familiarity and usability. The more familiar a student is with a word through listening and reading (receptive vocabulary), the more likely a student is to use the word in speaking or writing (expressive vocabulary). Hence, it is essential for educators to recognize the importance of vocabulary development and to strategically plan instruction and practice experiences that promote development of this foundational skill of literacy.

2. HOW DOES VOCABULARY KNOWLEDGE INFLUENCE STUDENT LEARNING?

There is an extensive history of research clearly demonstrating the importance of vocabulary knowledge to student learning and active participation and performance in school. Studies have demonstrated that early vocabulary development (prekindergarten) has persisting effects on oral language, decoding, spelling, comprehension (e.g., Zucker, Cabell, & Pico, 2021, Dickinson & Tabors, 2001; Foorman et al., 2016; Scarborough & Dobrich, 1990; Wright & Cervetti, 2017).

Additionally, it has been noted that the academic achievement gap is due to a vocabulary gap (Carlo, et al., 2004; Preston, et al., 2010; Romeo, et al., 2018). Students with less well-developed vocabulary knowledge tend to read less and use a more limited number of words when speaking; thus, the differences in receptive and expressive vocabulary become more pronounced over time (e.g., Cunningham & Stanovich, 1998). Vocabulary knowledge has also been shown to impact student learning across various disciplines including science, social studies, and mathematics (e.g., Martiniello, 2008; Snow, 2010; Townsend, Filippini, Collins, & Biancarosa, 2012).

3. HOW CAN WE PROMOTE STUDENTS' VOCABULARY DEVELOPMENT?

Direct instruction is necessary component of vocabulary instruction. However, since it is estimated that students need to learn approximately 3,000 to 4,000 words per year (Anderson & Nagy, 1993; Snow & Kim, 2007), vocabulary development also requires indirect methods of instruction and learning. Multiple exposures and repeated use of new or less familiar words through receptive and expressive means is necessary. Developing student knowledge of a word should also consider the depth of knowledge (how much is known about the word) and the breadth of knowledge (how the word is connected to other words).

Research on vocabulary instruction is increasingly highlighting the importance of academic vocabulary for students to facilitate discipline-specific and general learning and achievement (e.g., Goldstein, et al., 2017; Mancilla-Martinez, Hwang, Oh, & Pokowitz, 2020; Squires, Bird, & Cahill, 2020). Academic vocabulary, often referred to as the language of education, is viewed as more demanding and complex than casual, everyday language (Snow, 2010). Nagy and Townsend (2012) provide this concise definition: "Academic language is the specialized language, both oral and written, of academic settings that facilitates communication and thinking about disciplinary content" (p. 92). Academic vocabulary is further categorized (Hiebert & Lubliner, 2008) as general or cross-discipline academic words (complex or precise terms used in a variety of disciplines, such as *analyze*) or discipline specific/domain-specific words (pertaining to a specific discipline or words that "shift meaning within discipline use, such as *representation* in math and scientific contexts" (Wood, Schatschneider, & VelDink, 2021, p. 274). Schuth, Kohne, & Weinert (2017) reported students' academic vocabulary knowledge uniquely predicts performance in reading, writing, mathematics, and social studies; they called for greater awareness of academic vocabulary and increased instruction to promote student learning.

Unfortunately, recent research notes that students may be receiving inadequate exposure, instruction, learning supports, and meaningful interactions with academic vocabulary words (Wood, et al., 2021). However, the body of research about student development of academic vocabulary notes the importance of instruction that uses morphological analysis of words and integration of words with connected meanings as part of a larger network (Dalton, et al., 2011; McKeown et al., 2018). Interestingly, academic vocabulary is frequently derived from Greek and Latin (Nagy & Townsend, 2012), with morphologically similar groups of words that can be used for instruction that builds on connected meanings as well as the word structure. In fact, about sixty percent of words in English text are of Greek or Latin origin (Henry, 1997) and more than ninety percent of discipline specific words are of Greek or Latin origin (Templeton et al., 2015).

Instruction that builds knowledge of roots helps students to develop, retain, and use academic and disciplinary vocabulary. Thus, this article presents key terms, guidelines, and instructional tasks that build students' knowledge of Greek and Latin roots

4. A FEW KEY TERMS FOR EDUCATORS

Knowledge of a few key terms that will assist educators in providing vocabulary instruction using morphological tasks.

- Morphology: the study of the smallest unit of meaning in a word and its pattern in English spelling.
- Morpheme: a morpheme is the smallest unit meaning in a word. Every word has a least one morpheme, but a word can have more than one morpheme. A morpheme can be a single syllable, multiple syllables, or even a single sound (the letter "s" to indicate plurality). Hint: a morpheme cannot be divided into smaller parts without losing its meaning.

- Root: roots in English are “rooted” in the Greek or Latin language. Most Greek roots are used in combination with each other; most Latin roots are used in combination with affixes.
- Hint: Although the term, “root word” and “base word” are often used interchangeably, there is a distinction between these two terms. Oftentimes, a root is only part of a word and cannot stand alone as a word, such as: aud, ject, mal. However, there are roots that do stand alone as an English word, such as: act, form, meter.
- Base word: a word that can stand alone.
- Hint: Sometimes, a base word in English is the same as a Greek or Latin root (as noted above: act, form, meter). Since roots are sometimes also base words and vice versa, it is easy to understand the difficulty with the labels root or base word.
- Free morpheme: a morpheme that can stand alone as a word.
- Bound morpheme: a morpheme that cannot stand alone as a word.
- Affixes: bound morphemes.
 - Prefix: an affix added to the beginning of a root or base word.
 - Suffix: an affix added to the end of a root or base word.

5. GUIDELINES FOR INSTRUCTIONAL TASKS THAT BUILD STUDENT KNOWLEDGE OF ROOTS

These three guidelines grounded in research-based principles for effective vocabulary instruction will assist teachers in design instructional tasks to build student knowledge of Greek and Latin roots.

5.1. Explicitly Teach and Practice Greek and Latin Roots of High Utility to Your Students

Almost seventy-six percent of common academic words share morphological roots (Coxhead, 2000). When selecting roots to explicitly teach, begin with roots of high utility for your students and their grade level. Words can be identified in relation to instructional topics (e.g., life cycles, astronomy) and books students are reading. This website lists twenty-five of the most common Greek and Latin roots: <https://www.thoughtco.com/common-word-roots-in-english-1692793>. For a more extensive lists, see: https://en.wikipedia.org/wiki/List_of_Greek_and_Latin_roots_in_English/A%E2%80%93 or <https://www.learnthat.org/pages/view/roots.html>

5.2. Emphasize the Connectivity of Words and Build on Derivations

Knowledge of the meaning of a root helps students to understand semantic and conceptual relationships among words. This offers particular benefits to students experiencing difficulty with reading and multilingual students whose first language is based on Latin or Greek (Rasinski, Padak, & Newton, 2017). By demonstrating that one root can be used to generate many related words, a teacher can emphasize the connectivity of words and build on word derivations. For example, using the root “aud” meaning to hear or listen, a teacher can introduce, explain, and promote usage of relatively common words containing this root such as: audience, audio, audit, audition, auditorium, inaudible. This would support students as they next learn less common words containing this root, such as: audiology, audiophile, laudability, plaudits. This type of instruction assists students in understanding meaning of the word and spelling associated with a morpheme.

5.3. Engage Students in Tasks that Require Usage of the Root in Reading and Writing

Academic vocabulary knowledge is most readily acquired when students have multiple exposures to the words taught and use the words in reading and writing. Instruction that builds on a common root affords the opportunity to read disciplinary texts associated with the root. After a teacher introduces and explains the root “meter,” students can engage in tasks such as reading about the metric system and then writing a summary paper or creating a chart explaining the units of measure.

6. EXAMPLES OF INSTRUCTIONAL TASKS THAT BUILD STUDENT KNOWLEDGE OF ROOTS

These instructional tasks build on the guidelines of explicit instruction and practice, emphasis of the connectivity of words and derivations, and engagement of students in usage of the root in reading and writing tasks.

6.1. Root Word Tree Graphic Organizer

Teachers can use this graphic organizer as the introductory task to explicitly teach the meaning of a root [Figure 1]. Words derived from the root are written in the boxes on the tree, along with word meanings, sentences, and other aids to understanding the root and words using the root.

6.2. Word Etymology

Teach students the origins of roots and words. The interesting story of a word's etymology increases understanding and retention of the word and its meaning. For example, the root *vor* is from the Latin verb, *vorare*, meaning to eat. Words using this root include: carnivore, herbivore, omnivore, and voracious. The website, Online Etymology, <https://www.etymonline.com/>, can be used as a teacher resource.

6.3. A Root Word Wall

A Root Word Wall is one method to engage students in identifying high utility roots for explicit instruction and for expanding usage of roots previously taught. This task also serves to increase word consciousness. As students skim or read classroom texts, they can identify words with roots and place the word under its corresponding root. The Root Word Wall provides an aid for writing tasks using the roots.

6.4. Word Sorts

Words can be sorted based on meaning of a root. A teacher might have a closed sort with the topics of "Time" and "Power." Students would sort roots such as "chronic, chronicle, and synchronize" under Time, and words such as "dynasty, dynamic, and dynamite" under "Power." An alternative sort by placement of the root within a word could have roots at the beginning of a word, middle of a word, or end of a word, such the root "log" (thought) in: logic, apologize, analogy.

6.5. Word Divide

The teacher creates a list of words that contain roots. Write lines next to each word to indicate the number of roots in the word (transcribe _____). Students analyze the words and write each root on a line next to the word. Students then discuss the meaning of the word. This task promotes morphological awareness for dividing words into chunks to enable decoding and usage of root meanings. Teachers and students can also discuss how the spelling of such words is modified (such as dropping one of the "s" letters when combining the root "trans" with the root "scribe.")

6.6. Word Building

Students can be provided roots and asked to combine the roots to create a real or imaginary word. This can be done as manipulative task by combining word parts written on small index cards. Alternatively, students could use a two or three column chart provided by the teacher to combine word parts. For each word created, the student would then provide on a graphic organizer (such as the Frayer Model) an easy to use definition, an illustration, and a sentence using the word. Students' graphic organizers could then be combined in a classroom book and distributed for reading practice with the words. Who knows—maybe someday the imaginary word will be a new word added to the Merriam Webster dictionary!

7. CONCLUSION

Given the multi-faceted contribution of Greek and Latin roots to the English language, it is essential for effective vocabulary instruction to include dedicated time to explicit instruction and guide students in recognizing and using roots to assist structural analysis, comprehension, and spelling of academic

and disciplinary vocabulary. It is hoped the research-based information, key terms, guidelines, and example instructional tasks will assist educators as they incorporate this important component of vocabulary instruction: building knowledge of Greek and Latin roots.

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