Vocabulary Learning to Enhance Reading for Understanding

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Introduction

The relationship between vocabulary and reading is not always an obvious one, especially when we think about how important it is that our learners be able to read the words on the page—with accuracy and efficiency. It's true that we absolutely need to support students to develop strong word-reading skills, but for many students, thinking of these skills as the "gateway" to deep comprehension is where the logic breaks down. Why? Well, while reading words are necessary for even getting to comprehension, the real comprehension processes are about connecting the words we read to the concepts and ideas that those words represent.

In this brief, we focus on the vocabulary side of "reading"—how our learners' understanding of the vocabulary that fills the printed page or screen is ultimately a linchpin for their reading comprehension. First, we describe what vocabulary is and its role in deep comprehension—why and how it matters greatly for all students. Next, we highlight the research on vocabulary instruction for struggling readers. We then provide classroom-specific examples of vocabulary instruction.

What It Is

Vocabulary knowledge is a key part of language development—it involves understanding the meanings of words and phrases heard or read (receptive vocabulary) and also using those words and phrases to communicate effectively in speech or writing (expressive vocabulary).

What Does It Mean to Know a Word?

Degrees of word knowledge. As illustrated in Figure 1, knowledge of a word is not all or nothing—vocabulary knowledge exists in degrees, such that any learner has a particular "level" of knowledge of any given word (Beck, McKeown, & Kucan 2013). When a learner has shallow knowledge of a word, she might only understand it when another speaker uses it as part of a story or set of directions—with knowledge of the words around it and some knowledge of the word, she is okay.

However, she is not likely to use this word in her own speech or writing. When a learner has deep knowledge of a word, she has a rich understanding of what it means, how it relates to other words, and how it is useful in multiple contexts. She is very likely to use it in her own speech and writing.

Figure 1. Five Levels of Word Knowledge

No knowledge

General sense

Narrow, context-bound knowledge

Enough knowledge to understand but not enough to recall and use appropriately

Rich, decontextualized knowledge of a word's meaning, its relationship to other words, metaphorical use

(Adapted from Beck, McKeown, & Kucan, 2013)

Types of words. In addition to the concept of degrees of vocabulary knowledge, it's important to know that there are also types of words to be learned. One way to think about word types is to categorize them on a continuum, from everyday words to academic words. *Everyday words* are those that we commonly use in social conversation, from pronouns (e.g., *I*, *she*) to high-frequency nouns (e.g., *home, movie, dinner*) to the action words we use to describe parts of daily life (e.g., *cooking, watching, playing*).

On the other end of the continuum are *academic words*. These words are used primarily in school, civic, and professional settings. They include general academic vocabulary words that are used across many content areas (e.g., *research*, *exhibit*, *investigate*) as well as content-specific academic vocabulary words that are unique to a particular subject (e.g., *fraction* in math and *chemical* in science). When it comes to comprehending school texts, deep knowledge of the academic words that fill these texts is a must.

How It Relates to Reading

We cannot separate complex ideas and relationships from the vocabulary words we use to describe them (Figure 2). Language and knowledge go hand in hand—it is through words and sentences that ideas take shape and knowledge is communicated. Acquiring and building knowledge through reading means having a deep enough understanding of the vocabulary on the page such that the author's intended message is clear; it means having such a thorough understanding of the concepts represented by these words that integrating these concepts with prior knowledge is possible.

Figure 2. Complex Ideas Reside in Complex Language

Complex Language

Complex Ideas
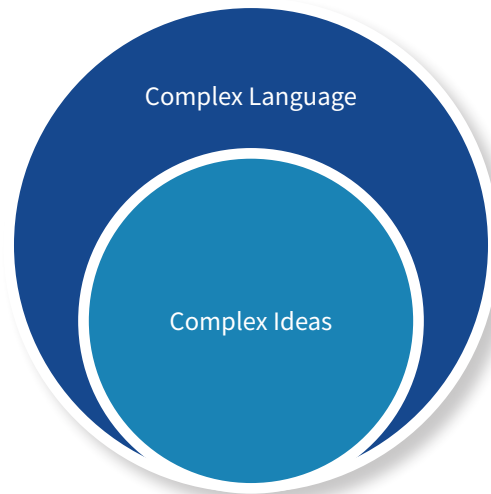
What happens when the reader doesn't bring enough relevant vocabulary knowledge to a given reading experience? Then deep comprehension remains out of reach. Let's take up an example to shed light on this idea. Imagine clicking on the Global section of the newspaper and reading about a financial crisis in a foreign country without a firm base of knowledge in the region's economic and government systems, let alone facility with the financial terms used to describe the crisis. Likewise, consider the difference between the level of understanding you might gain when reading a textbook in a subject you have studied (e.g., instructional theories or child development) compared to slogging through a textbook in an unfamiliar field (e.g., engineering or classical studies). Reading a newspaper article or novel textbook, we might get something out of the experience, but certainly not the deep understanding that a reader well versed in the subject matter would achieve, let alone what might be expected in a classroom. So, for all students, simply knowing how to read individual words is not enough to comprehend text. They need knowledge of the vast majority of those words, especially academic ones that are abstract and complex (e.g., *exhibit, investigate, chemical*), if they are to construct meaning effectively. Otherwise, "reading" the printed page will not result in comprehension or learning. Deeper knowledge of academic words leads to deeper comprehension of academic texts.

Bringing it all together: Vocabulary and struggling readers. When it comes to the academic words and concepts that are most critical for long-term reading success, many struggling readers demonstrate shallow and narrow knowledge (e.g., in Fig. 1, levels 2-4). That is, they have some knowledge of many words and concepts—and that is often enough to engage in day-to-day conversations or get the gist of a story. However, they need an even deeper understanding of many academic words and concepts for independent reading comprehension and to engage in academic dialogue. By having deep vocabulary instruction become part of daily classroom work for academically vulnerable students, we can transform academic words from the gatekeeper between word reading and comprehension to the gateway for deep understanding.

What It Looks Like

Effective vocabulary instruction—instruction that builds deep knowledge of words and concepts—looks quite different from the traditional approaches many of us experienced as students.

Figure 3. Shifting How We Think About Vocabulary Instruction

From...		To...
Approaching vocabulary instruction as a stand-alone strategy	→	Organizing vocabulary instruction within content-based units of study that involve reading, writing, and dialogue
Starting with long lists of words	→	Selecting a small set of useful and complex words for study, and complementing this instruction with a focus on word-learning strategies
Teaching words through a series of memorization and spelling activities and independent worksheets	→	Studying words and concepts using multiple methods and formats, including lots of collaboration
Relying on wide reading to build word knowledge	→	Reading a small set of thematically related texts deeply to build knowledge of words and concepts

Benefits

- For many struggling readers, underdeveloped academic vocabulary knowledge is a persistent source of difficulty (Lesaux & Kieffer, 2010)

- Deep vocabulary knowledge supports deep comprehension (Leider et al. 2013; Proctor et al., 2012)

- Vocabulary knowledge and reading comprehension have a reciprocal relationship: as greater vocabulary leads to greater comprehension, better comprehension also leads to learning more vocabulary words (Verhoeven, van Leeuwe, J., & Vermeer, 2011)

- Deeply learning vocabulary is motivating! As students perceive evidence of their growth, they experience a sense of academic confidence and success (Lesaux, Harris, & Sloane, 2012).

- The deep study of complex words and concepts presents opportunities for higher-order thinking and classroom dialogue—key components of quality instruction (Hamre & Pianta, 2005)

What the Research Says

Principles of Effective Vocabulary Instruction

1. Start with **content-based, thematic units of study** that include rich texts (Beck & McKeown 2007; Hickman, Pollard-Durodola, & Vaughn 2004; Moss, 2005; Silverman & Hines, 2009; Shanahan et al. 2010).

   Instruction is organized into units that each focus on a multifaceted, academic topic with significant potential for student engagement. A variety of conceptually complex, accessible, and engaging texts that feature different aspects of the unit topic (and academic vocabulary) act as a springboard for learning and discussion throughout the unit.

2. Choose a **small set of academic vocabulary** words to teach (Baker et al., 2014; Carlo et al., 2004; Lesaux et al., 2014).

A small set of useful and complex academic words that appear in the unit's texts are chosen for deep study. By focusing on fewer words and devoting more time to studying them, students have the opportunity to learn concepts and nuances associated with a given word and a chance to practice using words through writing, speaking, and listening activities in the classroom.

3. **Use multiple modalities, formats, and methods** (Lesaux et al., 2014; Silverman & Hines, 2009; Vaughn et al., 2009).

    Developing deep vocabulary knowledge requires a combination of explicit instruction and opportunities for authentic practice. It also demands varied opportunities to encounter and use the words and concepts—from familiar to novel contexts and across literacy domains (reading, writing, and speaking).

4. Unlock language by developing **word-learning strategies** (Baumann et al. 2003; Bowers, Kirby, & Deacon 2010; Kieffer & Lesaux 2007; Klingner, Vaughn, Arguelles, Hughes, & Leftwich, 2004).

    It is not possible to provide direct instruction in all of the words that students will need to know as they move up through the grades, but we can help them to become strong word learners who have the tools and skills to unlock the meaning of unfamiliar words. As students practice the cognitive steps and develop the morphological knowledge it takes to unlock language, their vocabulary and reading skills likewise benefit.

5. **Organize thematic units** within an instructional cycle (Carlo et al., 2004; Hickman, Pollard-Durodola, & Vaughn, 2004; Lesaux, et al., 2014; Silverman & Hines, 2009).

    For vocabulary knowledge to deepen and accumulate, learning opportunities should be organized within a consistent instructional cycle—a lesson sequence made up of varied core learning tasks (Principle 2) that build from one to the next, enabling the study of content-based themes (Principle 1), academic words (Principle 3) and word-learning strategies (Principle 4).

Examples

The examples described are adapted with permission from Lesaux, N. K., & Harris, J. R. (2015). *Cultivating knowledge, building language: Literacy instruction for English learners in elementary school*. Portsmouth, NH: Heinemann.

Principle 1: Start with content-based, thematic units of study that include rich texts

Ms. Fromer and her third graders are currently working their way through a unit of study focused on how animals survive in their environments. She chose this theme because it is the following:

- **Content-based**: This topic is rooted in the life sciences and corresponds with the next-generation science standards focused on interdependent relationships in ecosystems.
- **Multifaceted**: The inextricable connection between animals and their environments presents multiple avenues for questioning, wondering, and discovering.
- **Engaging**: Studying this theme provides students with opportunities to learn about areas of the world they've never visited and why animals they've encountered or seen in the media look and behave the way that they do. It even encourages them to begin to look critically at how the choices individuals and communities make influence both the environment and its animal inhabitants.

Ms. Fromer grounds the unit in a small set of thoughtfully chosen texts that act as springboards for learning and discussion. These texts include: Mike Unwin's *Why Do Tigers Have Stripes?*, Nic Bishop's *Butterflies and Moths*, and a *Time for Kids* article about how elephants survive in their environment and the role that they play in their overall habitat. What criteria did Ms. Fromer use when choosing this set of texts? These texts are the following:

- Relevant to the cycle's big idea
- Relatively brief
- On grade level for listening comprehension
- Include complex, accurate, and discussion-worthy ideas and information
- Feature academic vocabulary (the focus of Principle #2!)

Principle 2: Choose a small set of academic vocabulary words to teach

Ms. Fromer draws the unit's vocabulary words from the core set of a few texts that she and her third graders will read and revisit throughout this unit focused on how animals survive in their environments. She is sure to limit the number of words for study to a set of 5-10 terms. She chooses words that are sufficiently useful and complex.

What makes a word useful? Ms. Fromer chooses words that are useful for the following:

- Understanding the text in which they are featured
- Learning and talking about the unit's theme
- Comprehending and communicating across content areas

What makes a word sufficiently complex? These words are the following:

- Conceptually abstract
- Polysemous (i.e., have multiple meanings or uses)
- Morphologically challenging (i.e., they can be transformed by adding or taking away prefixes or suffixes)

Ms. Fromer knows that each and every vocabulary word chosen for this unit of study cannot meet each and every criteria, but when finalizing her list, she prioritizes individual words that meet multiple criteria and thinks about how the collection of words will hang together as a set. Which words did she land on? She picked: *pattern, reflect, disguise, survive/survivor, recognize, attract/attractive, environment, adapt/adaptation.*

Principle 3: Develop academic vocabulary knowledge using multiple modalities, formats, and methods

In Ms. Fromer's third grade classroom, opportunities to learn, experiment with, and apply vocabulary knowledge take a variety of forms. Her vocabulary instruction does the following:

- **Balances direct instruction with opportunities for inquiry and authentic practice.** Ms. Fromer explicitly provides student friendly definitions, examples, non-examples, and concrete representations of the target words. At the same time, she provides lots of engaging opportunities to put new word knowledge to use. For instance, each unit culminates in a project that requires students to craft an extended oral or written product. For this unit, students are creating pamphlets for their state's Audubon Society that are focused on how to coexist with local wildlife.
- **Incorporates multiple student groupings, including many opportunities to collaborate in pairs and small groups.** For example, during learning centers, one activity provides photographs of "mystery" animal body parts (e.g., mouths, feet, and tails); students use target words when talking together about how this body part might help an animal survive and then write their ideas in the form of captions.
- **Links learning opportunities across the different literacy domains.** Each unit involves reading texts that include the target vocabulary words; engaging in discussions using the words; and writing texts that apply word knowledge. For the culminating project described above, students are reading about local wildlife,

talking about what they find out, writing their ideas in their pamphlets, and orally presenting their finished products.

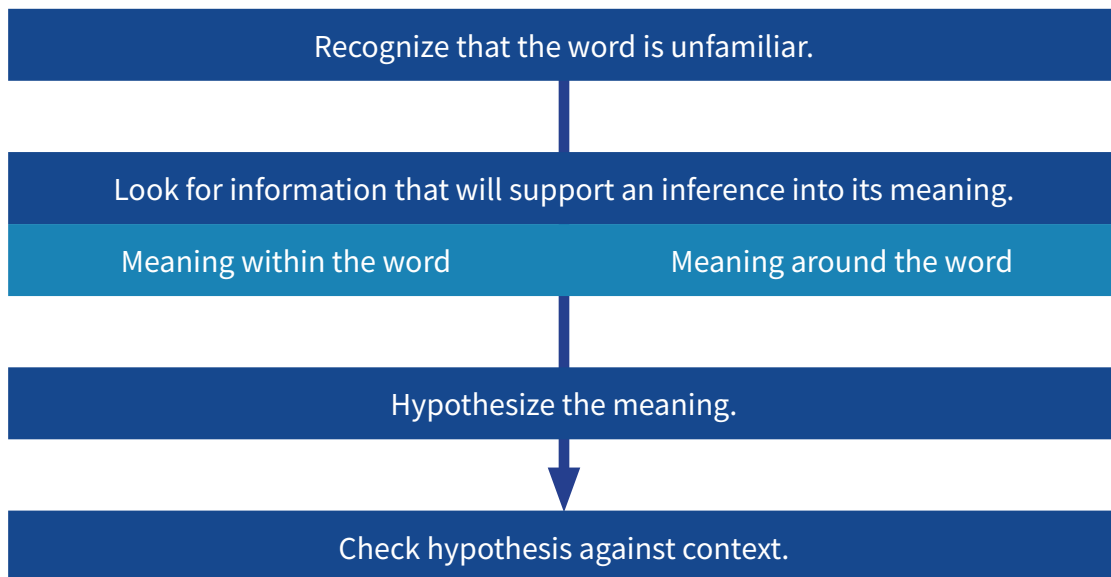### Principle 4: Unlock language by developing word-learning strategies

To complement instruction that focuses on specific words and concepts, Ms. Fromer helps her third graders to become strong word learners by teaching the following word-learning strategies:

- Breaking words into meaningful parts (roots, suffixes, and prefixes)
- Using clues present in surrounding text (i.e., context clues)
- Consciously attending to words (e.g., encouraging them to share interesting word encounters)

In this unit, focused on how animals survive in their environments, Ms. Fromer's students are practicing transforming words using the suffix "-able." This suffix can be combined with several of the unit's target words (*adaptable, disguisable, recognizable*) and is a good match for her students' stage in the developmental sequence of language learning.

Students not only learn this word part and how to transform target words using this word part, but also practice inferring word meanings that include the suffix "–able" in context. Ms. Fromer has demonstrated explicit cognitive steps that can help readers to unlock word meanings. Her students practice these steps to support their comprehension as they read texts related to the unit's theme. These cognitive steps are featured in Figure 4.

Figure 4. Cognitive Steps for Unlocking Language

| Recognize that the word is unfamiliar. |
| Look for information that will support an inference into its meaning. |
| Meaning within the word — Meaning around the word |
| Hypothesize the meaning. |
| Check hypothesis against context. |

Principle 5: Organize thematic units within an instructional cycle

Each thematic unit of study, though focused on different content and vocabulary words, follows a similar lesson sequence that organizes teaching and learning. This repeated lesson sequence provides learners with the consistency and predictability needed to master the expectations and procedures, in order to focus on the content at hand. Each cycle includes instructional activities that lend themselves to studying academic words and concepts using multiple methods and formats.

For example, in each cycle, Ms. Fromer and her students use a consistent set of procedures and routines to structure student collaboration. These include quick conversation routines like think-pair-share; a writing feedback routine called praise-question-suggest; and routines for extended group work, including an interviewing activity and a collaborative brainstorming activity. As students gain facility with these routines, their conversations become more elaborate and their work more productive.

Ms. Fromer sequences these core-learning tasks developmentally so that her students engage in the incremental process of developing knowledge and vocabulary. Figure 5 presents a high-level view of Ms. Fromer's developmental sequence for her instructional cycle.

Figure 5. Sample Developmental Sequence

Introduce Content and Engage Students Around It

What does this look like? Students participate in a shared experience and reading that involves the unit's concepts and target words; students are introduced to the target words' definitions.

Integrate What's Known with What's New

What does this look like? Students engage in a collaborative brainstorm activity, sharing their background knowledge about each word; Ms. Fromer clarifies misconceptions and connects knowledge to student-friendly definitions.

Analyze Word Forms, Meanings, and Uses

What does this look like? Students learn about and practice word-learning strategies (Principle 4), analyzing meanings across contexts (including texts), and experimenting with language and how to transform the meaning of a word.

Expanding Contexts and Applying Learning

What does this look like? Students read new, thematically related texts that feature the unit's vocabulary words and concepts; they apply their learning through interactive tasks such as a peer interview activity.

Extending What's Known to Produce a Message

What does this look like? Students put accumulated knowledge to use in the context of a compelling project that involves crafting an extended oral or written product.

Implications for Practice

Use the following table to consider the ways in which your instruction already accomplishes the principles of effective vocabulary instruction and to begin to brainstorm the ways in which you might further accomplish these principles.

Principles of Vocabulary Instruction	What strategies and activities do I already use that accomplish this principle?	Which other strategies or activities might I incorporate into my instruction to further accomplish this principle?
Start with content-based, thematic units of study that include rich texts		
Choose a small set of academic vocabulary words to teach		
Develop academic vocabulary knowledge using multiple modalities, formats, and methods		
Unlock language by developing word-learning strategies		
Organize thematic units within an instructional cycle		

Conclusion

For many struggling readers, underdeveloped academic vocabulary knowledge is a persistent source of difficulty and barrier to deep comprehension; it is therefore crucial that instruction builds students' deep knowledge of words and concepts. When teaching reflects the principles of effective vocabulary instruction, learning environments are filled with dialogue, critical thinking, and engaging interactions; they bring the world to students through content-rich texts and engage them in their perspectives on this world. Equipped with more knowledge of and about words, students will be set up for successful reading experiences now, and in years to come.

Sources

Baker, S., Lesaux, N., Jayanthi, M., Dimino, J., Proctor, C. P., Morris, J., & Newman-Gonchar, R. (2014). *Teaching academic content and literacy to English learners in elementary and middle school* (NCEE 2014-4012). Washington, DC: National Center for Education Evaluation and Regional Assistance. Retrieved from **http://ies. ed.gov/ncee/wwc/publications_reviews.aspx**

Baumann, J. F., Edwards, E. C., Boland, E. M., Olejnik, S., & Kame'enui, E. J. (2003). Vocabulary tricks: Effects of instruction in morphology and context on fifth-grade students' ability to derive and infer word meanings. *American Educational Research Journal*, *40*(2), 447–494.

Beck, I. L., & McKeown, M. G. (2007). Increasing young low-income children's oral vocabulary repertoires through rich and focused instruction. *The Elementary School Journal*, *107*(3), 251–271.

Beck, I. L., McKeown, M. G., & Kucan, L. (2013). *Bringing words to life: Robust vocabulary instruction*. New York, NY: Guilford Press.

Bowers, P. N., Kirby, J. R., & Deacon, S. H. (2010). The effects of morphological instruction on literacy skills: A systematic review of the literature. *Review of Educational Research*, *80*(2), 144–179.

Carlo, M. S., August, D., McLaughlin, B., Snow, C. E., Dressler, C., Lippman, D. N., … White, C. E. (2004). Closing the gap: Addressing the vocabulary needs of English-language learners in bilingual and mainstream classrooms. *Reading Research Quarterly*, *39*(2), 188–215.

Hamre, B. K., & Pianta, R. C. (2005). Can instructional and emotional support in the first-grade classroom make a difference for children at risk of school failure? *Child Development*, *76*(5), 949–967.

Hickman, P., Pollard-Durodola, S., & Vaughn, S. (2004). Storybook reading: Improving vocabulary and comprehension for English-language learners. *The Reading Teacher*, *57*(8), 720–730.

Kieffer, M. J., & Lesaux, N. K. (2007). Breaking down words to build meaning: Morphology, vocabulary, and reading comprehension in the urban classroom. *The Reading Teacher, 61*(2), 134–144.

Klingner, J. K., Vaughn, S., Arguelles, M. E., Hughes, M. T., & Leftwich, S. A. (2004). Collaborative strategic reading: "Real-world" lessons from classroom teachers. *Remedial and Special Education, 25*(5), 291–302.

Leider, C. M., Proctor, C. P., Silverman, R. D., & Harring, J. R. (2013). Examining the role of vocabulary depth, cross-linguistic transfer, and types of reading measures on the reading comprehension of Latino bilinguals in elementary school. *Reading and Writing*, *26*(9), 1459–1485.

Lesaux, N. K., & Harris, J. R. (2015). *Cultivating knowledge, building language: Literacy instruction for English learners in elementary school*. Portsmouth, NH: Heinemann.

Lesaux, N. K., Harris, J. R., & Sloane, P. (2012). Adolescents' motivation in the context of an academic vocabulary intervention in urban middle school classrooms. *Journal of Adolescent & Adult Literacy*, *56*(3), 231–240.

Lesaux, N. K., & Kieffer, M. J. (2010). Exploring sources of reading comprehension difficulties among language minority learners and their classmates in early adolescence. *American Educational Research Journal*, *47*(3), 596–632.

Lesaux, N. K., Kieffer, M. J., Faller, S. E., & Kelley, J. G. (2010). The effectiveness and ease of implementation of an academic vocabulary intervention for linguistically diverse students in urban middle schools. *Reading Research Quarterly*, *45*(2), 196–228.

Lesaux, N. K., Kieffer, M. J., Kelley, J. G., & Harris, J. R. (2014). Effects of academic vocabulary instruction for linguistically diverse adolescents: Evidence from a randomized field trial. *American Educational Research Journal*, *51*(6), 1159–1194.

Proctor, C. P., Silverman, R. D., Harring, J. R., & Montecillo, C. (2012). The role of vocabulary depth in predicting reading comprehension among English monolingual and Spanish–English bilingual children in elementary school. *Reading and Writing*, *25*(7), 1635–1664.

Moss, B. (2005). Making a case and a place for effective content area literacy instruction in the elementary grades. *The Reading Teacher,* 59(1), 46–55.

Shanahan, T., Callison, K., Carriere, C., Duke, N. K., Pearson, P. D., Schatschneider, C., & Torgesen, J. (2010*). Improving reading comprehension in kindergarten through 3rd grade: A practice guide* (NCEE 2010-4038). Washington, DC: National Center for Education Evaluation and Regional Assistance.

Silverman, R., & Hines, S. (2009). The effects of multimedia-enhanced instruction on the vocabulary of English-language learners and non-English-language learners in pre-kindergarten through second grade. *Journal of Educational Psychology*, *101*(2), 305–314.

Verhoeven, L., van Leeuwe, J., & Vermeer, A. (2011). Vocabulary growth and reading development across the elementary school years. *Scientific Studies of Reading*, *15*(1), 8–25.