

Vocabulary

Acquiring Vocabulary

Words are not just words. They are the nexus—the interface—between communication and thought. When we read, it is through words that we build, refine, and modify our knowledge. What makes vocabulary valuable and important is not the words themselves so much as the understandings they afford.

Marilyn Jager Adams (2009, p. 180)

The importance of students acquiring a rich and varied vocabulary cannot be overstated. Vocabulary has been empirically connected to reading comprehension since at least 1925 (Whipple, 1925) and had its importance to comprehension confirmed in recent years (National Institute of Child Health and Human Development, 2000). It is widely accepted among researchers that the difference in students' vocabulary levels is a key factor in disparities in academic achievement (Baumann & Kameenui, 1991; Becker, 1977; Stanovich, 1986) but that vocabulary instruction has been neither frequent nor systematic in most schools (Biemiller, 2001; Durkin, 1978; Lesaux, Kieffer, Faller, & Kelley, 2010; Scott & Nagy, 1997).

Research suggests that if students are going to grasp and retain words and comprehend text, they need incremental, repeated exposure in a variety of contexts to the words they are trying to learn. When students make multiple connections between a new word and their own experiences, they develop a nuanced and flexible understanding of the word they are learning. In this way, students learn not only what a word means but also how to use that word in a variety of contexts, and they can apply appropriate senses of the word's meaning in order to understand the word in different contexts (Landauer & Dumais, 1997; Landauer, McNamara, Dennis, & Kintsch, 2007; Nagy, Herman, & Anderson, 1985).

Initially, children readily learn words from oral conversation because such conversations are context rich in ways that aid in vocabulary acquisition: in discussions, a small set of words (accompanied by gesture and intonation) is used with great frequency to talk about a narrow range of situations children are exposed to on a day-to-day basis. Yet as children reach school age, new words are introduced less frequently in conversation, and consequently vocabulary acquisition eventually stagnates by grade 4 or 5 unless students acquire additional words from written context (Hayes & Ahrens, 1988).

Written language contains literally thousands of words more than are typically used in conversational language. Yet writing lacks the interactivity and nonverbal context that make acquiring vocabulary through oral conversation relatively easy, which means that purposeful and ongoing concentration on vocabulary is needed (Hayes & Ahrens, 1988). In fact, at most between 5 and 15 percent of new words encountered upon first reading are retained, and the weaker a student's vocabulary is the smaller the gain (Daneman & Green, 1986; Hayes & Ahrens, 1988; Herman, Anderson, Pearson, & Nagy, 1987; Sternberg & Powell, 1983). Yet research shows that if students are truly to understand what they read, they must grasp upward of 95 percent of the words (Betts, 1946; Carver, 1994; Hu & Nation, 2000; Laufer, 1988).

The challenge in reaching what we might call "lexical dexterity" is that, in any given instance, it is not the entire spectrum of a word's history, meanings, usages, and features that matters but only those aspects that are relevant at that moment. Therefore, for a reader to grasp the meaning of a word, two things must happen: first, the reader's internal representation of the word must be sufficiently complete and well articulated to allow the intended meaning to be known to him or her; second, the reader must understand the context well enough to select the intended meaning from the realm of the word's possible meanings (which in turn depends on understanding the surrounding words of the text).

Key to students' vocabulary development is building rich and flexible word knowledge. Students need plentiful opportunities to use and respond to the words they learn through playful informal talk, discussion, reading or being read to, and responding to what is read. Students benefit from instruction about the connections and patterns in language. Developing in students an analytical attitude toward the logic and sentence structure of their texts, alongside an awareness of word parts, word origins, and word relationships, provides students with a sense of how language works such that syntax, morphology, and etymology can become useful cues in building meaning as students encounter new words and concepts (Beck, McKeown, & Kucan, 2008). Although direct study of language is essential to student progress, most word learning occurs indirectly and unconsciously through normal reading, writing, listening, and speaking (Miller, 1999; Nagy, Anderson, & Herman, 1987).

As students are exposed to and interact with language throughout their school careers, they are able to acquire understandings of word meanings, build awareness of the workings of language, and apply their knowledge to comprehend and produce language.

Three Tiers of Words

Isabel L. Beck, Margaret G. McKeown, and Linda Kucan (2002, 2008) have outlined a useful model for conceptualizing categories of words readers encounter in texts and for understanding the instructional and learning challenges that words in each category present. They describe three levels, or *tiers*, of words in terms of the words' commonality (more to less frequently occurring) and applicability (broader to narrower).

While the term *tier* may connote a hierarchy, a ranking of words from least to most important, the reality is that all three tiers of words are vital to comprehension and vocabulary development, although learning tier two and three words typically requires more deliberate effort (at least for students whose first language is English) than does learning tier one words.

- **Tier One words** are the words of everyday speech usually learned in the early grades, albeit not at the same rate by all children. They are not considered a challenge to the average native speaker, though English language learners of any age will have to attend carefully to them. While Tier One words are important, they are not the focus of this discussion.
- **Tier Two words** (what the Standards refer to as *general academic* words) are far more likely to appear in written texts than in speech. They appear in all sorts of texts: informational texts (words such as *relative, vary, formulate, specificity, and accumulate*), technical texts (*calibrate, itemize, periphery*), and literary texts (*misfortune, dignified, faltered, unabashedly*). Tier Two words often represent subtle or precise ways to say relatively simple things—*saunter* instead of *walk*, for example. Because Tier Two words are found across many types of texts, they are highly generalizable.
- **Tier Three words** (what the Standards refer to as *domain-specific* words) are specific to a domain or field of study (*lava, carburetor, legislature, circumference, aorta*) and key to understanding a new concept within a text. Because of their specificity and close ties to content knowledge, Tier Three words are far more common in informational texts than in literature. Recognized as new and “hard” words for most readers (particularly student readers), they are often explicitly defined by the author of a text, repeatedly used, and otherwise heavily scaffolded (e.g., made a part of a glossary).

Tier Two Words and Access to Complex Texts

Because Tier Three words are obviously unfamiliar to most students, contain the ideas necessary to a new topic, and are recognized as both important and specific to the subject area in which they are instructing students, teachers often define Tier Three words prior to students encountering them in a text and then reinforce their acquisition throughout a lesson. Unfortunately, this is not typically the case with Tier Two words, which by definition are not unique to a particular discipline and as a result are not the clear responsibility of a particular content area teacher. What is more, many Tier Two words are far less well defined by contextual clues in the texts in which they appear and are far less likely to be defined explicitly within a text than are Tier Three words. Yet Tier Two words are frequently encountered in complex written texts and are particularly powerful because of their wide applicability to many sorts of reading. Teachers thus need to be alert to the presence of Tier Two words and determine which ones need careful attention.

Tier Three Words and Content Learning

This normal process of word acquisition occurs up to four times faster for Tier Three words when students have become familiar with the domain of the discourse and encounter the word in different contexts (Landauer & Dumais, 1997). Hence, vocabulary development for these words occurs most effectively through a coherent course of study in which subject matters are integrated and coordinated across the curriculum and domains become familiar to the student over several days or weeks.

Examples of Tier Two and Tier Three Words in Context

The following annotated samples call attention to **Tier Two** and **Tier Three** words in particular texts and, by singling them out, foreground the importance of these words to the meaning of the texts in which they appear. Both samples appear without annotations in Appendix B.

Example 1: *Volcanoes* (Grades 4–5 Text Complexity Band)

Excerpt

In **early times**, no one knew how **volcanoes formed** or why they **spouted red-hot molten** rock. In **modern times**, scientists began to study **volcanoes**. They still don't know all the answers, but they know much about how a **volcano** works.

Our planet made up of many **layers** of rock. The top **layers** of **solid** rock are called the **crust**. Deep beneath the **crust** is the **mantle**, where it is so hot that some rock melts. The melted, or **molten**, rock is called **magma**.

Volcanoes are **formed** when **magma** pushes its way up through the crack in Earth's **crust**. This is called a **volcanic eruption**. When **magma pours forth** on the **surface**, it is called **lava**.

Simon, Seymour. *Volcanoes*. New York: HarperCollins, 2006. (2006)

Of the Tier Two words, among the most important to the overall meaning of the excerpt is **layers**. An understanding of the word **layers** is necessary both to visualize the structure of the crust (“the top **layers** of **solid** rock are called the **crust**”) and to grasp the notion of the planet being composed of **layers**, of which the **crust** and the **mantle** are uppermost. Perhaps equally important are the word **spouted** and the phrase **pours forth**; an understanding of each of these is needed to visualize the action of a volcano. The same could be said of the word **surface**. Both **layers** and **surface** are likely to reappear in middle and high school academic texts in both literal and figurative contexts (“this would seem plausible on the surface”; “this story has layers of meaning”), which would justify more intensive instruction in them in grades 4–5.

Tier Three words often repeat; in this excerpt, all of the Tier Three words except **mantle** and **lava** appear at least twice. **Volcano(es)** appears four times—five if **volcanic** is counted. As is also typical with Tier Three words, the text provides the reader with generous support in determining meaning, including explicit definitions (e.g., “the melted, or **molten**, rock is called **magma**”) and repetition and overlapping sentences (e.g., . . . called the **crust**. Deep beneath the **crust** . . .).

Example 2: *Freedom Walkers* (Grades 6–8 Text Complexity Band)

Excerpt

From the Introduction: “Why They Walked”

Not so long ago in Montgomery, Alabama, the color of your skin **determined** where you could sit on a public bus. If you happened to be an African American, you had to sit in the back of the bus, even if there were empty seats up front.

Back then, **racial segregation** was the rule throughout the American South. Strict laws—called “**Jim Crow**” laws—enforced a system of **white supremacy** that **discriminated** against blacks and kept them in their place as **second-class** citizens.

People were separated by race from the moment they were born in **segregated** hospitals until the day they were buried in **segregated** cemeteries. Blacks and whites did not attend the same schools, **worship** in the same churches, eat in the same restaurants, sleep in the same hotels, drink from the same water fountains, or sit together in the same movie theaters.

In Montgomery, it was against the law for a white person and a Negro to play checkers on public property or ride together in a taxi.

Most southern blacks were denied their right to vote. The biggest **obstacle** was the **poll tax**, a special tax that was required of all voters but was too costly for many blacks and for poor whites as well. Voters also had to pass a **literacy** test to prove that they could read, write, and understand the U.S. Constitution. These tests were often **rigged to disqualify** even highly educated blacks. Those who overcame the **obstacles** and insisted on **registering** as voters faced threats, **harassment** and even physical violence. As a result, African Americans in the South could not express their **grievances** in the voting booth, which for the most part, was closed to them. But there were other ways to protest, and one day a half century ago, the black citizens in Montgomery rose up in protest and united to demand their rights—by walking peacefully.

It all started on a bus.

Freedman, Russell. *Freedom Walkers: The Story of the Montgomery Bus Boycott*. New York: Holiday House, 2006. (2006)

The first Tier Two word encountered in the excerpt, **determined**, is essential to understanding the overall meaning of the text. The power of **determined** here lies in the notion that skin color in Montgomery, Alabama, at that time was the causal agent for all that follows. The centrality of **determined** to the topic merits the word intensive attention. Its study is further merited by the fact that it has multiple meanings, is likely to appear in future literary and informational texts, and is part of a family of related words (*determine, determination, determined, terminate, terminal*).

Understanding the excerpt's Tier Three words is also necessary to comprehend the text fully. As was the case in example 1, these words are often repeated and defined in context. **Segregation**, for example, is introduced in the second paragraph, and while determining its meaning from the sentence in which it appears might be difficult, several closely related concepts (**white supremacy**, **discriminated**, **second-class**) appears in the next sentence to provide more context.