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## Research-Based Vocabulary Instruction: A Focus on Print-Based Instruction

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## Overview

Isabel Beck, Margaret McKeown, and Linda Kucan, leaders in the field of vocabulary instruction and authors of Bringing Words to Life: Robust Vocabulary Instruction, reflected on the importance of vocabulary in people's lives in the second edition of their landmark text:

A rich vocabulary supports learning about the world, encountering new ideas, enjoying the beauty of language. A rich vocabulary enhances an interview, allows one to see the humor in wordplay, shores up what an individual wants to say, and, especially, wants to write. It is clear that a large and rich vocabulary is the hallmark of an educated individual. Indeed, a large vocabulary repertoire facilitates becoming an educated person to the extent that vocabulary knowledge is strongly related to reading proficiency in particular and school achievement in general. (2013, p. 1)

Unfortunately, a profound difference in vocabulary knowledge exists among students with diverse learning needs and socioeconomic backgrounds (e.g., Beck et al., 2013; Hart \& Risley, 1995, 2003; Kuder, 2017; Nelson, Dole, Hosp, \& Hosp, 2015; Spies \& Dema, 2014). Given the importance of vocabulary development for all students and the gaps in vocabulary knowledge evidenced by many, it is now widely accepted that vocabulary development become an essential ingredient of academic and vocational planning efforts. With careful planning and curricular support, teachers can provide the kinds of robust vocabulary instruction needed to improve the vocabulary and corresponding comprehension skills of all our students across the primary, intermediate, and high school grades.

Wordly Wise $3000^{\circ}$ 4th edition is one such vocabulary program designed to meet the needs of students through print-based, sequential, and systematic vocabulary instruction. This K-12 program provides teachers with the effective research-based and grade-appropriate lessons for direct instruction in vocabulary necessary for balanced classroom and school-wide vocabulary development. Rather than plan and develop lessons with seamless supporting activities within and across grades, teachers can support and help differentiate student learning through published and field-tested materials, now in their fourth edition.

Figure 1 shows important features of the research-based program Wordly Wise 3000 4th edition. These features are discussed in this research brief.

Figure 1 Important features of Wordly Wise i3000 4th edition


## Importance of Reading

The value of learning to read cannot be underestimated (Flaum-Horvath, Marchand-Martella, Martella, \& Kauppi, 2017); in fact, it is the most important skill students can learn in school, serving as the cornerstone of all other academic subject areas (Marchand-Martella, Martella, Modderman, Petersen, \& Pan, 2013). In April 2000, the National Reading Panel issued a report stemming from a Congressional mandate aimed to help educators identify key skills and methods needed to bolster reading achievement for students in Grades K-3 (Armbruster, Lehr, \& Osborn, 2006; National Institute of Child Health and Human Development [NICHD], 2000). Five areas of reading instruction surfaced as critical in teaching these students: (1) phonemic awareness, (2) phonics, (3) fluency, (4) vocabulary, and (5) text comprehension. Two areas in particular-vocabulary and text comprehension-were considered key aspects of reading to gather information ("reading to learn"). All readers, whether they are beginners or advanced learners, "must understand that the ultimate goal of reading is comprehension" (Armbruster et al., 2006, p. 46). The National Reading Panel reported implications for reading instruction, including the need for direct instruction of vocabulary words, repetition and multiple exposures of these words, learning in rich contexts, and active learning opportunities, among others. Key features of robust vocabulary instruction are discussed further starting on page 6 .

## Relationship Between Vocabulary and Comprehension

A reciprocal relationship is evident between vocabulary skills and reading comprehension: Children who have learned more vocabulary words are more likely to demonstrate stronger comprehension skills and know the meaning of more words they read in the text (Ford-

Connors \& Paratore, 2015; van Steensel, Oostdam, van Gelderen, \& van Schooten, 2016; Wright, 2013). Students with higher levels of reading comprehension and vocabulary development tend to read more and learn more words from text; they also perform better on standardized achievement tests as compared to their peers with lower levels of reading comprehension and vocabulary development (Stahl \& Fairbanks, 1986 as cited by FordConnors \& Paratore, 2015). Concurrent correlations between vocabulary and reading comprehension are high—usually over 80 (Biemiller \& Boote, 2006). Educators can make a difference in the lives of their students by "drawing on the strong correlation (the ability to predict performance of one measure based on another) between vocabulary and reading comprehension" (Palumbo, Kramer-Vida, \& Hunt, 2015, p. 109).

Vocabulary development is a central thread across specified literacy areas in the latest rubric for K-5 reading and language arts instructional materials (Foorman, Smith, \& Kosanovich, 2017). This rubric keeps reading for understanding at the forefront of literacy activities and includes ratings from 1 (criterion not met) to 5 (criterion completely met) for building skills in the areas of foundational reading, reading comprehension, writing development, speaking and listening, and language development.

## Focus on Academic Vocabulary

Vocabulary development is deepened by a focus on academic vocabulary. Academic vocabulary instruction includes teaching words that occur frequently in texts but infrequently in oral conversations (Lesaux, Kieffer, Kelley, \& Harris, 2014). Word choice is critical when it comes to enhancing vocabulary development using academic vocabulary. Criteria for identifying these words typically include their importance and utility, ability to offer conceptual understanding, and instructional potential (see Beck et al., 2013 for details on how to choose words to teach). Not all words are equally important to teach, however (Beck, McKeown, \& Kucan, 2008). Guidance in choosing words based on research recommendations or guidelines may be helpful for educators when it comes to systematic academic vocabulary development across grades.

Wordly Wise 3000 4th edition includes a focus on high-utility and academic vocabulary, comprising instruction on 3,000 words (hence the program's title) across Books 2-12, with additional words taught in Books K and 1. A majority of these words overlap with words that appear frequently in school-based text sources. For example, Wordly Wise 3000 draws attention to words from Averil Coxhead's well-respected Academic Word List (AWL) (see www.uefap.com/vocab/select/awl.htm). The AWL was cited as an important word list to utilize by Biemiller (2012). The underlined AWL words in Wordly Wise 3000 allow teachers who wish to spend more instructional time on these words to easily do so.

For young students who enter school with on-level or below-level vocabularies, Wordly Wise $3000^{\circ}$ Books K and 1 ensure exposure to a core of high-utility vocabulary words used frequently across domains. For children with larger vocabularies, more challenging words
are taught through a supplementary Extend and Challenge activity. In all cases, children learn words that are both developmentally appropriate and important for content-area reading comprehension in later grades.

Additionally, words for Books K and 1 were chosen in consultation with two major references: The Living Word Vocabulary (Dale \& O'Rourke, 1981) and The Reading Teacher's Book of Lists (Fry, Kress, \& Fountoukidis, 2000). The Living Word Vocabulary provides information about the grade levels at which a given word is known by most children. Following current research guidelines for vocabulary instruction of kindergarteners and first-grade students (Biemiller \& Boote, 2006), words were selected that are known by most children in fourth grade and that correspond to the conceptual level of development of children in kindergarten and first grade. The Reading Teacher's Book of Lists provides words that appear in upper elementary science and social studies texts as well as frequently used descriptive adjectives and adverbs. Most words in Books K and 1 appear on one of these lists and meet The Living Word Vocabulary criteria.

Many of the words chosen are more sophisticated words for known concepts, such as release (let go), leap (jump), and delighted (happy). Other words, such as nation, decay, and reflect, name important new concepts. In addition, Books $K$ and 1 introduce children to the notion of multiple meanings. Thus, multiple meanings of familiar words such as row, ring, patch, trunk, and store are systematically taught.

Words for Books 2-12 were chosen based on the early work of Harris and Jacobson (1982) related to word frequency in school readers and the grade level of a word's first appearance. For example, consider the words enormous and gigantic: Enormous occurred two hundred times and first appeared in most third- or fourth-grade readers. Gigantic occurred fifty times, and in the majority of readers did not appear until fifth or sixth grade. Enormous is in Book 2 of Wordly Wise 3000, and gigantic appears several books later in Book 5. Other factors that inform word choice include usefulness (thereby favoring arduous while eliminating aardvark), number of meanings (including mammoth, as both noun and adjective, while rejecting mermaid), and correlations with the SAT and various high-stakes assessments.

## Three-Tier Framework

To select the most productive words to teach, Beck et al. (2013) devised a three-tier framework. Tier One words are those that occur most frequently in everyday life-they are considered easier words because students are likely to hear and learn them in daily conversation. Words such as cat, run, strong, big, party, etc., are considered Tier One words. Tier Two words are high-utility words that are often found in written text but are used infrequently in daily conversation; given their infrequent use in conversation, they are less likely to be learned as compared to Tier One words. Words such as obtrusive, vanquish, exorbitant, enormous, depreciate, raucous, etc., are considered Tier Two words (these words appear in Wordly Wise 3000). Tier Two words are those targeted for instruction given their powerful impact on verbal
functioning (see Beck et al., 2013) and comprise words lists previously mentioned (e.g., AWL). Finally, Tier Three words are low-frequency words that are often limited to specific domains. These words are best taught within specific subjects (e.g., science, social studies, and math) when the need arises for knowledge of these words. Words such as filibuster, epidermis, isotope, photosynthesis, etc., are considered Tier Three words.

The majority of the words used in Wordly Wise 3000 are Tier Two general academic words. The program focuses on high-utility words that have a powerful impact on verbal functioning, appear frequently in text but infrequently in daily conversation, and are cited as important to learn based on their appearance in well-respected word lists (e.g., AWL). Thus, this vocabulary program follows best practices when it comes to differential attention to word selection in choosing important words for instruction.

## Vocabulary Assessment

Vocabulary knowledge is essential for success on today's high-stakes tests. Even if teachers do not emphasize word study for its own sake, they are held accountable for their students' performance on state and national assessments.

In 2009, the National Assessment of Educational Progress (NAEP) integrated the vocabulary measure of understanding word meaning with a measure of passage comprehension (National Center for Education Statistics [NCES], 2012). Students were asked to demonstrate word knowledge based on word meaning in context. A sample NAEP question follows:

On page 2, the author says that her mother 'thought she could replicate' the great-grandfather's mint syrup. This means the author's mother thought she could
(a) buy back the mint syrup recipe
(b) make mint syrup that tasted like his
(c) remember how the mint syrup tasted
(d) make a better mint syrup than his
(NCES, 2012, p. 15)
To answer this question correctly as (b), students had to use their understanding of the word to interpret a part of the passage. The Partnership for Assessment of Readiness for College and Careers (PARCC) (see https://parcc.pearson.com/practice-tests/english/ for sample test questions) and Smarter Balanced Assessments in English Language Arts (see http://sampleitems.smarterbalanced.org) now assess vocabulary knowledge in similar ways as the NCES (2012).

Interestingly, average scores in NAEP vocabulary at Grades 4, 8, and 12 in 2009 and 2011 showed that those students who scored the highest in reading comprehension also had the highest vocabulary scores (NCES, 2012). Those who exhibited the lowest average vocabulary scores performed in the lowest percentile in reading comprehension. According to NCES (2012), "understanding word meaning has always been essential to reading comprehension. Whether reading the printed page or a computer screen, a strong sense of word meaning provides a basis for greater comprehension in an increasingly fast-paced world" (p. 1).

The standards movement across the United States (including the Common Core State Standards [CCSS] and newly revised state standards in those states not utilizing the CCSS) has raised the bar for all students, making vocabulary instruction aligned to today's standards and corresponding assessments absolutely essential. Expectations are now higher, assessments are more contextually based, and the curriculum is becoming more challenging to promote college and career readiness (see Shanahan, Fisher, \& Frey, 2012 for their discussion on the "challenge of challenging text"). The need is greater than ever for an emphasis on robust vocabulary instruction beginning as early as kindergarten for all students, particularly those who struggle to pass the high-stakes tests that are aligned with more challenging standards to better prepare students for college and careers.

Wordly Wise 3000 4th edition was designed to include a large percentage of words drawn from a variety of standardized tests to help students succeed. Further, lessons in Books 2-12 include reading passages with subsequent comprehension and context-specific questions based on the passage. Thus, the program includes contextually based vocabulary activities much like those found in high-stakes and standardized assessments.

Program Example 1: Vocabulary words are used in a variety of contexts throughout a lesson to mirror the challenges of high-stakes and standardized assessments.


## Need for Vocabulary Instruction

The well-documented research of Hart and Risley $(1995,2003)$ points to a significant vocabulary gap among various groups of children by the age of three. This gap reflects how often and with what vocabulary parents talk to their children: (a) children from professional families had a working vocabulary of more than 1,000 words; (b) children from working-class families had a working vocabulary of just under 800 words; and (c) children from families who were on welfare had a working vocabulary of fewer than 600 words. According to Nelson et al. (2015), students from lower-income backgrounds acquire far fewer than the 3,000 words (on average) learned per year. In fact, these authors note, "this vocabulary gap is one of the most persistent and vexing issues in reading instruction today" (p. 145). Explanations for this gap relate to family background along with a lack of instruction and extended reading opportunities in school. A focus should be placed on closing this gap to ensure all students are college and career ready; all evidence points to the necessity of focused instruction in vocabulary development.

Researchers debate over the number of words that should be taught per week. For example, Beck et al. (2013) and Diamond and Gutlohn (2006) recommend targeting 8 to 10 words per week for instruction. Biemiller (2012) notes 20 to 25 words should be included in instruction, noting also that students will actually learn only about 10 of those words.

Wordly Wise 3000 targets 3,000 words across Books 2-12, with an additional 270 words taught in Books K and 1. The progression through the levels of the Wordly Wise 3000 series is dependent upon the grade level of the student. Book K features 120 words taught over 12 lessons ( 10 words taught per 2-week lesson, with 5 words introduced each week), and Books 1-3 each feature 150 words taught over 15 lessons. Book 1 follows a 2-week lesson plan, while Books 2 and 3 suggest that all 10 words per lesson be taught within a week. Books 4-12 each teach a total of 300 words over 15 lessons. Stahl (1999) found that 300 words was a realistically achievable amount to be learned in the middle grades. Thus, Wordly Wise 3000 incorporates evidence-based practices by introducing 5 words per week in kindergarten and first grade, 10 words per week in second and third grades, and 15 words per week in fourth grade and above. Given the importance of vocabulary development and the difficulties many students exhibit in this area, "there is good reason to teach vocabulary more aggressively" (Pearson, Hiebert, \& Kamil, 2012, p. 231), particularly as students progress through school.

Program Example 2: Wordly Wise 3000 4th edition targets 3,000 words across Books 2-12, with an additional 270 words taught in Books K-1.

## Sample Word Lists

|  |  |
| :--- | :---: |
| BOOK K | LESSON |
| able | 4 |
| bashful | 8 |
| divide | 13 |
| giggle | 6 |
| globe | 1 |
| involved | 15 |
| property | 5 |
| ripe | 7 |
| stormy | 5 |
| vlew | 12 |


| BOOK 1 | LESSON |
| :--- | :---: |
| action | 8 |
| compass | 2 |
| eager | 11 |
| grow | 15 |
| length | 13 |
| property | 5 |
| reverse | 6 |
| sprinkle | 4 |
| tearful | 12 |
| uneven | 4 |


| BOOK 2 | LESSON |
| :--- | :---: |
| absorb | 5 |
| boulder | 3 |
| calf | 1 |
| enormous | 2 |
| flame | 4 |
| instrument | 15 |
| motor | 3 |
| settle | 13 |
| tread | 7 |
| zero | 1 |


| BOOK 3 | LESSON |
| :--- | :---: |
| ambition | 3 |
| cocoon | 4 |
| enable | 6 |
| gradual | 9 |
| league | 5 |
| mystify | 7 |
| responsible | 14 |
| steer | 2 |
| tentacle | 1 |
| vigorous | 11 |


| BOOK 4 | LESSON |
| :--- | :---: |
| active | 4 |
| blossom | 16 |
| dreary | 13 |
| essential | 19 |
| glimpse | 5 |
| observe | 3 |
| permit | 2 |
| quiver | 20 |
| represent | 1 |
| utter | 1 |


| BOOK 5 | LESSON |
| :--- | :---: |
| accurate | 4 |
| boisterous | 14 |
| cumbersome | 20 |
| harbor | 6 |
| investigate | 15 |
| mimic | 9 |
| obstacle | 1 |
| purchase | 2 |
| tempest | 12 |
| vertical | 5 |


| BOOK 9 | LESSON |
| :--- | :---: |
| accentuate | 15 |
| beneficiary | 10 |
| concede | 6 |
| empathize | 12 |
| gregarious | 14 |
| memorabilia | 20 |
| obtrusive | 14 |
| reciplent | 17 |
| sedentary | 4 |
| ubiquitous | 2 |


| BOOK 6 | LESSON |
| :--- | :---: |
| abbreviate | 11 |
| beneficial | 8 |
| diminish | 9 |
| exhilaration | 18 |
| hectic | 3 |
| integrate | 2 |
| monotonous | 7 |
| ravenous | 7 |
| scour | 17 |
| tranquil | 5 |


| BOOK 10 | LESSON |
| :--- | :---: |
| accolade | 4 |
| bemuse | 16 |
| culpable | 12 |
| differentiate | 10 |
| largesse | 7 |
| omnivorous | 7 |
| pandemonium | 9 |
| rambunctious | 1 |
| somnolent | 13 |
| vanguard | 8 |


| BOOK 7 | LESSON |
| :--- | :---: |
| acknowledge | 1 |
| benefactor | 3 |
| complement | 15 |
| grueling | 19 |
| irate | 8 |
| maintain | 4 |
| recede | 9 |
| solitude | 2 |
| ultimate | 11 |
| whim | 7 |


| BOOK 11 | LESSON |
| :--- | :---: |
| abeyance | 14 |
| blasphemy | 8 |
| commensurate | 14 |
| extrapolate | 20 |
| imperturbable | 1 |
| multifarious | 11 |
| perspicacious | 6 |
| repugnant | 15 |
| subversive | 16 |
| vicissitudes | 11 |


| BOOK 8 | LESSON |
| :--- | :---: |
| ascertain | 15 |
| capacious | 8 |
| decipher | 14 |
| feasible | 19 |
| Imperative | 3 |
| languish | 10 |
| memoir | 18 |
| pervade | 1 |
| renown | 11 |
| tremulous | 4 |


| BOOK 12 | LESSON |
| :--- | :---: |
| adumbrate | 2 |
| beneficent | 3 |
| concatenation | 16 |
| dichotomy | 7 |
| fulminate | 11 |
| lassitude | 18 |
| nugatory | 11 |
| ostensible | 4 |
| propinquity | 20 |
| replete | 8 |

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## Multi-Tier Instructional Support

Vocabulary knowledge plays a central role in reading achievement across the grades. Thus, efforts should be made to target vocabulary instruction as early as possible, starting in kindergarten and continuing instruction through high school. Multi-tier instructional supportwhere the focus is placed on Tier 1, general-education-based instruction to prevent difficulties in closing the vocabulary gap-is warranted (Loftus \& Coyne, 2013). "A multi-tiered system of support (MTSS) provides a promising framework for meeting the needs of the full continuum of students, particularly those students who are at risk for experiencing learning difficulties" (Cuticelli, Coyne, Ware, Oldham, \& Loftus Rattan, 2015, p. 150). In a multi-tier instructional approach, teachers provide consistent, whole-class, Tier 1 instruction using quality researchbased tools and methods (Cuticelli et al., 2015). Teachers benefit from published instructional materials that offer a seamless implementation within and across the grades. Students who struggle, including students who are at risk for school failure (e.g., students with disabilities and those from culturally and linguistically diverse backgrounds), benefit from structured instruction at the Tier 1 level. If they need structured vocabulary instruction beyond what is offered at the Tier 1 level, small group instruction can be delivered at the Tier 2 level (Loftus \& Coyne, 2013; Vadasy, Nelson, \& Sanders, 2011). Typically, an additional 30 minutes of daily focused instruction is provided at each additional level of instruction. More strategic and intensive instruction is given in smaller groups (or one-on-one) at Tiers 2 and 3. Published instructional materials that are consistent, sequenced, and that offer robust instruction are needed for successful MTSS implementations.

Wordly Wise 3000 provides print-based, sequential, and systematic vocabulary instruction for students in Grades K-12. In Tier 1, general education teachers utilize research-based lessons offering a myriad of student activities that promote consistent direct instruction to build higher levels of vocabulary. These same lessons can offer students who need more focused instructional support the opportunity to build important vocabulary skills at Tier 2. In this way, Wordly Wise 3000 can be an important part of providing multi-tier instructional support.

Program Example 3: Wordly Wise 3000 4th edition offers sequential and systematic vocabulary instruction for students in Grades K-12.


## Specific Needs of Learners

Primary- and intermediate-level students identified as having learning disabilities (LD) along with those from culturally and linguistically diverse backgrounds (English learners [ELs]) are often characterized as having language needs that warrant vocabulary development (Beck et al., 2013; Kame'enui \& Baumann, 2012; Spies \& Dema, 2014). Manyak (2012) calls for more powerful vocabulary instruction for ELs as early as possible in their academic careers. This instruction can be delivered in a multi-tier instructional approach. Additionally, Kuder (2017) notes that vocabulary difficulties are often seen in students in later grades; frequently, secondary students with LD and other disabilities are less prepared for college and careers given these challenges. However, it is key to remember that good instruction and curriculum in general does hold true for ELs (see Goldenberg, 2008 for details) and students with learning disabilities (Archer \& Hughes, 2011). Good instruction is good instruction. ELs and those with LD benefit from instruction (just as at-risk and on-level students do) that is explicit and systematic in nature; offers opportunities to practice, apply, and transfer learning over time; includes frequent assessment to gauge progress; is differentiated when needed; and has opportunities for students to interact with their classmates in motivating and meaningful ways.

One key feature of Wordly Wise 3000 4th edition that is helpful for ELs and students who are at risk for school failure is the use of a secondary reading passage, written at a lower grade level than the on-grade-level passage, which can be administered by teachers when contextbased vocabulary practice is required within the program. The secondary passage is written so that all students, regardless of which passage they read, are expected to complete the same comprehension questions. The secondary passage is written with lower text complexity to ensure that students who need reading support can still apply their knowledge of vocabulary in context. Teachers also have the option to give students in need of support fill-in-the-blank lesson review exercises, which require less writing than the open-ended comprehension questions. Both the secondary passage and the lesson review exercises are located in the Teacher's Resource Book for each level.

Program Example 4: Primary and secondary passages support classroom differentiation. Students answer the same comprehension questions whether they read the on-level or below-level passage.

Primary passage
Student Book


Folktales are legends of past events that are passed on from adults to children without ever being written down. Every country has its folktales, and this one from Japan comes to mind. It tells of the adventures of a young pearl diver named Tokoyo who lived in Japan.


Secondary passage
Teacher's Resource Book


Tokoyo and the Sea Monster
Foltules see suelis pased free shats wo dilitres. They wer mor
 ulle the serey of a meng peal diver named Thloge.
People in Tolowvh vilige mude their livelihood by diving fer peark. They nerbed fer cet eyver is + thonsend with s predien peal Takopo
 opwes thas apook. The wa was a neved hoec no ber She wous evily Hin

Folktales are stories passed from adults to children. They are not written down. Every country has its folktales. This one comes from Japan. It tells the story of a young pearl diver named Tokoyo.


## Robust Vocabulary Instruction

"We do know that if attention is given to vocabulary development it can make a difference" (Beck et al., 2008, p. 3). We also know that the answer to the question, "'How should vocabulary differ as you go up the grade levels?' is 'not that much'-that is, all the basic principles for effective, engaging instruction hold from kindergarten to high school" (Beck et al., 2008, p. 39). Unfortunately, as Gallagher and Anderson (2016) noted, there appears to be a lack of robust vocabulary instruction in United States classrooms. Additionally, Wanzek (2014) noted that $8 \%$ of core classroom reading instruction was devoted to teaching vocabulary and that minimal amounts of direct vocabulary instruction were evident in supplemental, intervention-based programs. In fact, vocabulary instruction in supplemental reading interventions was typically incidental in nature and consisted of "mere seconds of instruction" (p. 160). Thus, it appears critical that programs include robust vocabulary instruction in Grades K-12. But what makes vocabulary instruction robust?
"The operative principle for vocabulary instruction is that it be robust: vigorous, strong, and powerful in effect. A robust approach to vocabulary involves directly explaining the meanings of words along with thought-provoking, playful, and interactive follow-up" (Beck et al., 2013, p. 3). Robust vocabulary instruction should include (a) self-assessment, (b) read-alouds with illustrations, (c) active learning opportunities or routines, (d) student-friendly definitions, (e) multiple and varied exposures and review, (f) context-based practice, and (g) motivational activities.

## Self-Assessment

The progression of students' knowledge of word meanings has been described in four levels: "(1) have never seen or heard the word before, (2) have seen or heard the word before, (3) vaguely know the meaning of the word; can associate it with a concept or context, and (4) know the word well; can explain it and use it" (Diamond \& Gutlohn, 2006, p. 5). Self-assessment is an essential component of instruction and shows students that "word
knowledge is indeed multifaceted" (Beck et al., 2013, p. 18). Having students think about what they know about a word before instruction occurs is an important part of a robust approach to vocabulary instruction. Students become an integral part of the assessment process when selfassessment is used.

In Wordly Wise 3000 4th edition, students engage with self-assessment in an activity that asks them to rate their level of word knowledge. This allows students to judge their own knowledge of word meanings before instruction begins.

Program Example 5: The Wordly Wise 3000 4th edition Rate Your Word Knowledge activity encourages selfassessment of word knowledge, part of a robust approach to vocabulary instruction.


## Read-Alouds with Illustrations

Robust vocabulary instruction for younger students typically centers on the use of storybook reading and teacher-led discussion of word meaning along with age- or grade-appropriate activities that help solidify word meaning (see "text talk" as described by Beck et al., 2013 along with recommendations by Biemiller \& Boote, 2006 and Coyne, Capozzoli-Oldham, \& Simmons, 2012 on how to conduct effective storybook reading activities to build vocabulary). "Read-alouds are particularly salient for vocabulary instruction because at this grade level, children are unlikely to encounter new meaning vocabulary in the readers they read independently" (Wright, 2013, p. 361). According to the National Reading Panel Report (NICHD, 2000), vocabulary can be learned incidentally in the context of listening to others read stories. Multiple readings are encouraged with differing purposes for student engagement (Gillam, Olszewski, Fargo, \& Gillam, 2014). Notably, kindergarteners exhibited higher rates of word learning when they were exposed to targeted vocabulary words four times as compared to two times during story reading (see Robbins \& Ehri, 1994 study cited in Loftus-Rattan, Mitchell, \& Coyne, 2016). Biemiller and Boote (2006) recommend multiple readings of a story coupled with revisiting illustrations and aspects of the story that showcase key vocabulary words along with teacher explanations as the most effective strategy to increase the vocabulary skills of students in the early primary grades.

In Wordly Wise 3000 Books K and 1, lessons begin with an oral and visual presentation of the words, followed by a teacher read-aloud. The read-alouds describe the adventures of three children as they enter kindergarten and progress through first grade together. Each story in Books K and 1 is read aloud on three different occasions. Each reading engages students in a different manner. During the first reading, students point to illustrations in their student books that correspond to the story being read; during subsequent readings, they listen for specific words and put a finger on their nose to indicate when they hear them.

Program Example 6: Each lesson in Wordly Wise 3000 4th edition Book K begins with an oral and visual presentation of the words. Students view illustrations while teachers read a story aloud.


## Read Aloud

Help children find pages 2-3 in their books. Invite them to listen and to look at the pictures as you read.

## Dandelion Wishes

SAY: Put your finger on picture number 1 .
: It was their first morning in the new house. David and Caroline ran out : : to the backyard. Mom followed behind, walking carefully. It had been a
: really rainy spring, and the backyard was muddy.
"Just look at this garden!" said Mom, smiling, "There are rows of : daffodils and tulips coming up. And the peonies are gorgeous! Even the
: dandelions look pretty." The garden was the reason Mom had wanted to
: buy this house. The dew glistened on the leaves and flowers. The soil was :
: rich and brown and good for growing plants.
: "But Mom, look at all these holes in the ground. Is that good for the
: soil?" asked Caroline. Caroline liked helping her mother in the garden, so
: she knew about things like soil.
"Those holes were made by ants and worms," said Mom. "They help : water and air get to the roots of the plants-even weeds. Did you know * dandelions are weeds?"
"But they look like flowers," said David.
"They do," said Mom. "When the yellow part is gone, I love to blow : away the fluffy white part and make a wish!"
"I wish the yellow part was gone now, so I could make a wish," said : Caroline.

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## Active Learning Opportunities or Routines

Active learning is a key element of vocabulary instruction. Active learning involves student participation in the learning process that requires them to make associations and engage in opportunities to practice, apply, and discuss word knowledge (Taylor, Mraz, Nichols, Rickelman, \& Wood, 2009). Students are not passive recipients of learning; instead, they engage in thoughtful and planned activities that align with the goals of a lesson. These planned activities can be even more effective when taught using specified routines (Manyak et al., 2014); routines increase instructional comfort in that students can predict how instruction will occur from one lesson to the next.

When students are naïve learners, they should receive more direct instruction (also known as explicit instruction; see Archer \& Hughes, 2011 for details on this important instructional delivery model) from the teacher; scripted instructional routines prove helpful in this regard. Direct vocabulary instruction includes intentional teacher participation, usually with teachers providing modeling, explanations, and think-alouds as they work with students (Wanzek, 2014). Teachers may read stories, lead discussion about key vocabulary words, and actively guide students through activities with prompting and questioning. Scaffolded support is a key element of direct instruction (Rosenshine, 2009). Teaching explicitly has been shown to be effective across a wide range of learners (Nelson et al., 2015) including on-level children and those who are at risk for school failure (e.g., students with disabilities, ELs, and students from low-socioeconomic areas).

Marzano (2009) recommends six best practices when direct or explicit vocabulary instruction is used: (1) providing descriptions, explanations, and examples of words and using them in context; (2) asking students to restate descriptions, explanations, and examples in their own words; (3) asking students to create pictures or symbolic representations of words; (4) recording words in vocabulary logs or portfolios; (5) engaging students in discussing vocabulary words with one another; and (6) involving students periodically in games that enable them to play with words.

Wordly Wise 3000 Books K and 1 include direct vocabulary instruction wherein teachers read stories and prompt discussion and guide students through instructional activities. Instructional routines are evident across Books K-12; with these routines, students gain confidence based on the predictability of how instruction will be provided from one lesson to the next and from one level to the next. Wordly Wise 3000 follows the six best practices of direct and explicit vocabulary instruction advocated by Marzano (2009).

Program Example 7: Routines and predictability build student confidence. Wordly Wise 3000 Book K offers daily and weekly formats for delivery of instruction, repeated in every lesson. (Book K, Unit 1, Lesson 2)


Program Example 8: Routines and predictability build student confidence. Wordly Wise 3000 4th edition Books 2-12 offer highly structured sequences of activities, repeated in every lesson. (Book 5, Lesson 2)


Program Example 9: Routine and predictability build student confidence. Wordly Wise 3000 4th edition Books 2-12 offer highly structured sequences of activities, repeated in every lesson. (Book 5, Lesson 20)


Program Example 10: Routine and predictability build student confidence. Wordly Wise 3000 4th edition Books 2-12 offer highly structured sequences of activities, repeated in every lesson and across every grade level. (Book 11, Lesson 10)


## Student-Friendly Definitions

When vocabulary words are defined, everyday language that is clear and accessible to students should be used (Diamond \& Gutlohn, 2006). These "student-friendly" definitions should (a) capture the essence of the word and how it is typically used and (b) explain its meaning using everyday language (see Beck et al., 2008, 2013 for details). Providing context for a word by using it in a sentence helps students see how the word can be incorporated into text and provides context clues that help ensure understanding of word meaning.

Wordly Wise 3000 defines vocabulary words using student-friendly meanings as often as possible. These targeted words are also used in sentences to enhance meaning. For example, the vocabulary word diligent from Book 6, Lesson 5 is defined as "working with great care and effort" and is used in the following sentence: "Diligent students succeed in reaching their goals." The accompanying contextual sentence supports the student-friendly definition of the word. In Book 9, Lesson 12, the vocabulary word impair is defined as "to damage, weaken, or lessen" and is accompanied by the following contextual sentence: "Fewer than six hours of sleep can impair a person's ability to drive."

Program Example 11: Wordly Wise 3000 4th edition uses student-friendly definitions and contextual sentences to introduce vocabulary.
diligent adj. Working with great care and effort.
dil' ajant Diligent students succeed in reaching their goals.
2 Tell your partner about a family member or a friend who is a diligent worker.

$$
\begin{array}{ll}
\text { impair } & \text { v. To damage, weaken, or lessen. } \\
\text { im pár } \\
& \text { Fewer than six hours of sleep can impair a person's ability to drive. } \\
& \text { impairment } n . \\
& \text { Her hearing impairment developed during an illness. }
\end{array}
$$

WORDLY WISE 3000
4th Edition

## Multiple and Varied Exposures and Review

The National Reading Panel Report (NICHD, 2000) noted that repeated exposure to vocabulary words was a critical part of providing robust vocabulary instruction. Further, the largest gains were made in those studies that extended vocabulary instruction beyond a single class and included multiple exposures of words in varied contexts. As Wanzek (2014) noted, "it is clear that shallow, single-exposure vocabulary instruction may not be enough for students to enhance reading comprehension" (p. 142). Beck et al. (2007) found that kindergarten and firstgrade students who received four times as many exposures to vocabulary words produced double the amount of learning (as cited in Beck et al., 2008). Experiencing many encounters with a word helps ensure students know its meaning when they come across the word in a new context. These encounters can be brief but should allow students to process word meanings and relationships (Beck et al., 2008). Multiple and varied exposures lead to deeper processing of word meaning (Loftus-Rattan et al., 2016).

Activities that can be used to increase the number of encounters with vocabulary words include (a) instructional cloze sentences (Palumbo et al., 2015); (b) multiple-choice, true/false, context interpretation, and example/nonexample questions (Beck et al., 2013); and (c) making choices, matching, creating examples, determining synonyms and antonyms, completing sentences, answering open-ended questions, and finding relationships (Beck et al., 2013). McGlynn and Kozlowski (2017) have said that Quizlet is a "fabulous online study tool" for students to increase exposure to and review of vocabulary words (p. 91). Dang (2015) noted the benefits of using a web-based, flashcard-practice program such as Quizlet to increase the size of one's vocabulary, track student performance, provide a motivational and multimedia (gamelike) approach to learning, and allow students to study any time, so long as they have access to the Internet.

In Wordly Wise 3000 Books K and 1, students complete activities that correspond to the teacher-read story; these activities invite children to engage with the story's vocabulary words by circling, connecting, cutting and pasting, coloring, drawing, and discussing. This lesson structure ensures that students interact with each word in a variety of ways across multiple contexts that highlight different dimensions of a word's meaning.

For example, the word compass, which first appears in the Book 1, Lesson 2 story "Camping at the Lake," is introduced as follows:

- The teacher introduces the word compass using the Picture Card and provides a brief definition and explanation.

Program Example 12: Picture Card compass from Wordly Wise 3000 Book 1, Lesson 2


- The teacher then reads the story "Camping at the Lake" aloud as students follow along by looking at illustrations in their student book. The word compass appears in the following sentence: "To make Jordan feel better, Chris showed him how to use the compass his dad gave him." The accompanying illustration portrays Chris showing Jordan his compass.
- The teacher asks questions to clarify understanding. The students respond to a question about the word compass, and circle the compass illustrated in their student book.

- When the story is reread, students are asked to touch their nose when they hear the word compass.
- Students cut and paste (Book K) or number (Book
 1) the story's illustrations to put them in the correct sequence. Then, using the illustrations as cues, students retell the story using the vocabulary words.
- Students then complete a series of activities in their student books where they color, match pictures, or choose pictures from a group to identify words such as compass. Many vocabulary words also reappear in review activities and in subsequent stories.


Like Books K and 1, Books 2-12 follow a similar plan for interacting with a word in several contexts. Throughout these levels, the first exercise in each lesson focuses on word meanings, while the last exercise requires students to respond to open-ended questions about a passage in which the words appear in context. The activities give students practice demonstrating multiple meanings of each word. Students form a network of associations and connections with a word when they identify its synonyms and antonyms, determine whether it fits certain contexts, encounter it in a passage, and answer questions that depend on student word knowledge for comprehension.

Program Example 13: Wordly Wise 3000 4th edition Word Study activities offer a variety of practice including identifying synonyms and antonyms, determining contexts, and learning about affixes and word roots.


Books 4-12 feature more intensive work with synonyms, antonyms, analogies, and images. Instructional cloze is also utilized. For example, the word represent is used across a series of exercises in Book 4, Lesson 1. Students first see the dictionary definitions of the word. Then they meet the word in a variety of exercises and contexts.

Students experience multiple exposures to each word in Wordly Wise 3000. They meet the word repeatedly during the lesson (and through spiraled review in subsequent lessons) in a variety of listening, reading, and writing situations. The Teacher's Resource Book includes lesson review exercises, which are reproducible. These cloze-sentence exercises (one set per lesson) can be used to solidify and reinforce learning or assigned as an assessment. The lesson review exercises can also be used as an alternative to the open-ended passage questions; they offer suitable support for students who are challenged by open-ended writing.

Program Example 14: Lesson Review Exercises and Vocabulary Extension activity offer students extra practice in determining contexts, deepening knowledge, and using words in sentences.


Additionally, Wordly Wise 3000 4th edition has partnered with Quizlet so students may take advantage of motivating, web-based activities pre-loaded with official Wordly Wise 3000 study sets. Quizlet's games and study activities provide additional reinforcement for Wordly Wise 3000.

Program Example 15: Official Wordly Wise 3000 Quizlet flashcard for the vocabulary word examine, taught in Book 3, Lesson 20.


## Context-Based Practice

The ultimate goal of vocabulary instruction is for students to determine word meaning in authentic context. Beck et al. (2013) called for vocabulary instruction to include practice using vocabulary words in this manner. When conducted, vocabulary assessment should be based on how words are used in context (Beck et al., 2013; Pearson et al., 2012). However, sometimes a word's context is not all that helpful in determining meaning. According to Diamond and

Gutlohn (2006), "for this reason, it is useful to intentionally create and develop instructional contexts that provide strong clues to a word's meaning. Instructional contexts are usually created by teachers, but can sometimes be found in commercial reading programs" (p. 25).

Wordly Wise 3000 Books 2-12 includes vocabulary-in-context passage activities in which students read a passage and answer a series of comprehension questions related to the knowledge of vocabulary words they have learned throughout the lesson. Instructional contexts are created to provide helpful clues to word meaning throughout the passages.

Program Example 16: Instructional contexts provide clues to word meaning in every Wordly Wise 3000 4th edition passage.


> Answer each of the following questions with a sentence. If a question does not contain a vocabulary word from the lesson's word list, use one in your answer. Use each word only once.

1. What is the meaning gesture sit is used in the passage?
$\qquad$
$\qquad$

## Motivational Activities

Vocabulary instruction should include word play that increases motivation. Word play involves engaging games and activities that help reinforce word meaning. "When children are having fun-when they see a purpose or direction to their learning-learning takes on a more authentic, more welcoming quality" (Johnson, Johnson, \& Schlichting, 2012, p. 210). Teachers should incorporate word-play activities such as games as much as possible (Gallagher \& Anderson, 2016). Blachowicz and Fisher (2012) noted that word play keeps the "fun" in the fundamentals of vocabulary development as students develop "word consciousness."

All lessons in Wordly Wise 3000 Books 2-12 offer entertaining and informative commentary on word history, homophones, derivations, shades of meaning, roots and affixes, word relationships, and extended meanings, in a section called Fun \& Fascinating Facts (Fun Fact in Books 2 and 3).

Program Example 17: The Fun \& Fascinating Facts box in all lessons of Wordly Wise 3000 4th edition Books 2-12 offer students additional exposure to and context for vocabulary words.

## Fun \& Fascinating FACTS

- Continuous means "going on without stopping." Continual means "happening over and over again." When a telephone rings continuously, it does so without stopping, perhaps because no one answers and the person calling does not hang up. When a telephone rings continually, it starts to ring again as soon as one call ends, and this goes on repeatedly for some time.
. . . . .
- To sheathe something is to cover it for protection. A sheath is a case that fits over something, such as the blade of a knife. Note that sheathe rhymes with breathe and sheath rhymes with teeth.
- The adjective minute is pronounced mi noot'. A minute amount is one that is very small. The noun minute is pronounced $\mathrm{min}^{\prime}$ it. (There are sixty minutes in an hour.)

Additional practice and review come in the form of hidden message and crossword puzzles.

Program Example 18: Entertaining practice provides review and increased exposure to the vocabulary words before the lesson tests.

Book 3

"Motivation is a key factor in comprehension" (McLaughlin, 2012, p. 432). Other motivational activities involve peer interactions, wherein students engage with one another in their use of vocabulary words. Kuder (2017) noted improvements in academic performance through these types of peer-based approaches. Another strategy shown to be effective in motivating students to participate at higher levels is think-pair-share. This cooperative-learning discussion strategy involves having students "think" about a question posed by the teacher, "pair" with a student to discuss the question for a length of time, and "share" what they found with the class when called upon by the teacher (Kaddoura, 2013). Shih and Reynolds (2015) found positive results in the use of this approach and noted students are generally receptive to working with one another.

Wordly Wise 3000 includes a derivation of the think-pair-share strategy called "turn and talk." The brief turn-and-talk activities encourage student engagement with peers and authentic interaction with word meanings. Students begin using vocabulary in conversation with their peers as soon as they are introduced to the words.

Program Example 19: Wordly Wise 3000 4th edition turn-and-talk activities are a derivation of the think-pair share strategy that encourages student engagement.
authority
ə thôr' ə tē
n. 1. The right to give orders, make decisions, or take action.

Only the Congress of the United States has the authority to declare war.
2. An expert source of information.

The researcher Jane Goodall is a world authority on chimpanzees.
authorities $n$. A group of people who have the right to enforce laws. The authorities closed the restaurant because it did not meet the proper standards for cleanliness.


Tell your partner about a hobby or topic you are an authority on.

## Summary

Given the importance of reading in general and vocabulary development specifically, coupled with the gaps in vocabulary knowledge evidenced by many, it is now widely accepted that vocabulary development become an essential ingredient of academic and vocational planning efforts in the area of literacy. With careful planning and curricular support, teachers can provide the kinds of robust vocabulary instruction needed to improve the vocabulary and corresponding comprehension skills of all students across the primary, intermediate, and high school grades.

Wordly Wise 3000 4th edition provides print-based, sequential, and systematic vocabulary instruction in a 13 -book series across Grades K-12. Teachers can support and help differentiate
student learning through published and field-tested materials, now in their fourth edition. Given the relationship between vocabulary and comprehension, it is critical to focus on vocabulary instruction across the grades. Wordly Wise 3000 utilizes best practices in vocabulary instruction including (a) a focus on Tier Two general academic vocabulary; (b) assessment practice similar to what is found on standardized tests; (c) instruction on 3,000 words (throughout Books 2-12); (d) inclusion of multi-tier instructional support shown to be effective with a wide range of learners; and (e) robust vocabulary instruction.

Wordly Wise 3000 4th edition includes several important features of robust vocabulary instruction. First, self-assessment is used to bring students into the assessment process from the start. Second, students receive instruction through read-alouds with illustrations in the early grades. Third, students participate in rich active learning opportunities that provide them with clear instructional routines. Fourth, student-friendly definitions are used to ensure word meaning is clear and enhance learning. Fifth, multiple and varied exposures and review opportunities engage students in ways that promote deep learning. Sixth, students learn important words with a focus on context-based practice. Finally, motivational activities abound that hook students and keep them on task and learning at high levels.

## References

Archer, A. L., \& Hughes, C. A. (2011). Explicit instruction: Effective and efficient teaching. New York, NY: Guilford.

Armbruster, B. B., Lehr, F., \& Osborn, J. (2006). The research building blocks for teaching children to read: Put reading first: Kindergarten through grade 3. Jessup, MD: National Institute for Literacy.

Beck, I. L., McKeown, M. G., \& Kucan, L. (2008). Creating robust vocabulary: Frequently asked questions \& extended examples. New York, NY: Guilford.

Beck, I. L., McKeown, M. G., \& Kucan, L. (2013). Bringing words to life: Robust vocabulary instruction (2nd ed.). New York, NY: Guilford.

Biemiller, A. (2012). Teaching vocabulary in the primary grades: Vocabulary instruction needed. In E. J. Kame'enui \& J. F. Baumann (Eds.), Vocabulary instruction: Research to practice (2nd ed.) (pp. 34-50). New York, NY: Guilford.

Biemiller, A., \& Boote, C. (2006). An effective method for building meaning vocabulary in primary grades. Journal of Educational Psychology, 98(1), 44-62. doi: 10.1037/00220663.98.1.44

Blachowicz, C. L. Z., \& Fisher, P. (2012). Keep the "fun" in fundamental: Encouraging word consciousness and incidental word learning in the classroom through word play. In E. J. Kame'enui \& J. F. Baumann (Eds.), Vocabulary instruction: Research to practice (2nd ed.) (pp. 189-209). New York, NY: Guilford.

Coyne, M. D., Capozzoli-Oldham, A., \& Simmons, D. C. (2012). Vocabulary instruction for young children at risk of reading difficulties: Teaching word meanings during shared storybook readings. In E. J. Kame'enui \& J. F. Baumann (Eds.), Vocabulary instruction: Research to practice (2nd ed.) (pp. 51-71). New York, NY: Guilford.

Cuticelli, M., Coyne, M. D., Ware, S. M., Oldham, A., \& Loftus Rattan, S. (2015). Improving vocabulary skills of kindergarten students through a multi-tier instructional approach. Intervention in School and Clinic, 50(3), 150-156. doi: 10.1177/1053451214542041

Dale, E., \& O'Rourke, J. (1981). Living word vocabulary. Chicago, IL: World Book/Childcraft International.

Dang, T. H. (2015). Web-based vocabulary learning with Quizlet. Teaching English as a Second or Foreign Language, 19(2), 1-8.

Diamond, L., \& Gutlohn, L. (2006). Vocabulary handbook: For all educators working to improve reading achievement. Berkeley, CA: CORE.

Flaum-Horvath, S., Marchand-Martella, N. E., Martella, R. C., \& Kauppi, C. (2017). Examining the effects of SRA FLEX Literacy ${ }^{\circ}$ on measures of Lexile ${ }^{\circ}$ and oral reading fluency with at-risk middle school readers. The Journal of At-Risk Issues, 20(1), 1-9.

Foorman, B. R., Smith, K. G., \& Kosanovich, M. L. (2017). Rubric for evaluating reading/ language arts instructional materials for kindergarten to grade 5 (REL 2017-219). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Southeast. Retrieved from https://ies.ed.gov/ncee/edlabs.

Ford-Connors, E., \& Paratore, J. R. (2015). Vocabulary instruction in fifth grade and beyond: Sources of word learning and productive contexts for development. Review of Educational Research, 85(1), 50-91.

Fry, E. B., Kress, J. E., \& Fountoukidis, D. K. (2000). The reading teacher's book of lists (4th ed.). San Francisco, CA: Jossey-Bass.

Gallagher, M. A., \& Anderson, B. E. (2016). Get all "jazzed up" for vocabulary instruction: Strategies that engage. The Reading Teacher, 70(3), 273-282. doi: 10.1002/trtr. 1498

Gillam, S. L., Olszewski, A., Fargo, J., \& Gillam, R. B. (2014). Classroom-based narrative and vocabulary instruction: Results of an early-stage, nonrandomized comparison study. Language, Speech, and Hearing Services in Schools, 45, 204-219.

Goldenberg, C. (2008). Teaching English language learners: What the research does-and does not-say. American Educator, 32(2), 8-44.

Harris, A. J., \& Jacobson, M. D. (1982). Basic reading vocabularies. New York, NY: Macmillan.
Hart, B., \& Risley, T. R. (2003). The early catastrophe: The 30 million word gap by age 3. American Educator, 27(1), 4 - 9.

Hart, B., \& Risley, T. R. (1995). Meaningful differences in the everyday experiences of young American children. Baltimore, MD: Brookes.

Johnson, D. D., Johnson, B., \& Schlichting, K. (2012). Language play: Essential for literacy. In E. J. Kame'enui \& J. F. Baumann (Eds.), Vocabulary instruction: Research to practice (2nd ed.) (pp. 210-228). New York, NY: Guilford.

Kaddoura, M. (2013). Think pair share: A teaching learning strategy to enhance students' critical thinking. Educational Research Quarterly, 36(4), 3-24.

Kame'enui, E. J., \& Baumann, J. F. (Eds.). (2012). Vocabulary instruction: Research to practice. New York, NY: Guilford.

Kuder, S. J. (2017). Vocabulary instruction for secondary students with reading disabilities: An updated research review. Learning Disability Quarterly, 78, 1-10. doi: 10.1177/0731948717690113

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.doi: 10.3102/0002831214532165

Loftus, S. M., \& Coyne, M. D. (2013). Vocabulary instruction within a multi-tier approach. Reading \& Writing Quarterly, 29, 4-19. doi: 10.1080/10573569.2013.741942

Loftus-Rattan, S. M., Mitchell, A. M., \& Coyne, M. D. (2016). Direct vocabulary instruction in preschool: A comparison of extended instruction, embedded instruction, and incidental exposure. The Elementary School Journal, 116(3), 391-410. doi: 10.1080/02702711.2013.839485

Manyak, P. C. (2012). Powerful vocabulary instruction for English learners. In E. J. Kame'enui \& J. F. Baumann (Eds.), Vocabulary instruction: Research to practice (2nd ed.) (pp. 280-302). New York, NY: Guilford.

Manyak, P. C., Von Gunten, H., Autenrieth, D., Gillis, C., Mastre-O'Farrell, J., IrvineMcDermott, ... Blachowicz, C. L. Z. (2014). Four practical principles for enhancing vocabulary instruction. The Reading Teacher, 68(1), 13-23. doi: 10.1002/trtr. 1299

Marchand-Martella, N. E., Martella, R. C., Modderman, S. L., Petersen, H., \& Pan, S. (2013). Key areas of effective adolescent literacy programs. Education and Treatment of Children, 36(1), 161-184.

Marzano, R. J. (2009). The art and science of teaching six steps to better vocabulary instruction. Educational Leadership, 67(11), 83-84.

McGlynn, K., \& Kozlowski, J. (2017, March). Helping students succeed by preteaching content-area vocabulary. Science Scope, 88-91.

McLaughlin, M. (2012). Reading comprehension: What every teacher needs to know. The Reading Teacher, 65(7), 432-440. doi: 10.1002/TRTR. 01064

National Center for Education Statistics. (2012). The nation's report card: Vocabulary results from the 2009 and 2011 NAEP reading assessments (NCES 2013 452). Institute of Education Sciences, U.S. Department of Education, Washington, D.C.

National Institute of Child Health and Human Development (NICHD). (2000). Report of the National Reading Panel. Teaching children to read. An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction. (NIH Publication No. 00-4769). Washington, DC: US Government Printing Office.

Nelson, K. L., Dole, J. A., Hosp, J. L., \& M. K. Hosp, (2015). Vocabulary instruction in K-3 lowincome classrooms during a reading reform project. Reading Psychology, 36, 145172. doi: 10.1080/02702711.2013.839485

Palumbo, A., Kramer-Vida, L., \& Hunt, C. V. (2015). Teaching vocabulary and morphology in intermediate grades. Preventing School Failure, 59(2), 109-115. doi: 10.1080/1045988×.2013.850649

Pearson, P. D., Hiebert, E. H., \& Kamil, M. K. (2012). Vocabulary assessment: Making do with what we have while we create the tools we need. In E. J. Kame'enui \& J. F. Baumann (Eds.), Vocabulary instruction: Research to practice (2nd ed.) (pp. 231-255). New York, NY: Guilford.

Rosenshine, B. (2009). The empirical support for direct instruction. In S. Tobias \& T. M. Duffy (Eds.), Constructivist instruction: Success or failure? (pp. 201-220). New York, NY: Routledge.

Shanahan, T., Fisher, D., \& Frey, N. (2012). The challenge of challenging text. Educational Leadership, 69(6), 58-62.

Shih, Y-C., \& Reynolds, B. L. (2015). Teaching adolescents EFL by integrating think-pairshare and reading strategy instruction: A quasi-experimental study. RELC Journal, 46(3), 221-235. doi: 10.1177/0033688215589886

Spies, T. G., \& Dema, A. A. (2014). Beyond word meaning: Vocabulary instruction for students with exceptional language needs. Intervention in School and Clinic, 49(5), 271-280. doi: 10.1177/1053451213513798

Stahl, S. (1999). Vocabulary development. Cambridge, MA: Brookline.
Taylor, D. B., Mraz, M., Nichols, W. D., Rickelman, R. J., \& Wood, K. D. (2009). Using explicit instruction to promote vocabulary learning for struggling readers. Reading \& Writing Quarterly, 25, 205-220. doi: 10.1080/10573560802683663

Vadasy, P. F., Nelson, J. R., \& Sanders, E. A. (2011). Longer term effects of a tier 2 kindergarten vocabulary intervention for English learners. Remedial and Special Education 34(2), 91-101. doi: 10.1177/0741932511420739
van Steensel, R., Oostdam, R., van Gelderen, A., \& van Schooten, E. (2016). The role of word decoding, vocabulary knowledge and meta-cognitive knowledge in monolingual and bilingual low-achieving adolescents' reading comprehension. Journal of Research in Reading, 39(3), 312-329. doi: 10.1111/1467-9817.12042

Wanzek, J. (2014). Building word knowledge: Opportunities for direct vocabulary instruction in general education for students with reading difficulties. Reading \& Writing Quarterly, 30(2), 139-164. doi: 10.1080/10573569.2013.789786

Wright, T. S. (2013). From potential to reality: Content-rich vocabulary and informational text. The Reading Teacher, 67(5), 359-367. doi: 10.1002/TRTR. 1222

