

Making Words Stick

Teachers can make vocabulary meaningful and memorable for younger students by anchoring new words in multiple contexts.

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A wonderful phonics lesson just took place. In the last seconds of the activity, students in an urban 1st grade classroom used the letter cards on their desks to sound out and spell the word “hog.” When they finished, the teacher queried, almost as an afterthought, “Would you like to have a hog for a pet?”

“No,” one student responded adamantly.

“Why not?” asked the teacher.

“‘Cause it might fly out the window!” the student replied.

“Wait a second, what is a hog?” the teacher asked as she began to realize that there was a problem.

Many students looked uncertain. One little boy gestured with his hands as he explained, “It’s like a tree branch.”

Although these 1st graders were able to proficiently use letter cards to spell the word “hog,” many of them were unsure of the word’s meaning. “Hog” meant “hawk” to some and “log” to others; some students couldn’t connect the word to any meaning at all.

Why are the students having this trouble, and what can teachers do about it?

Word Poverty

Such confusions between similar-sounding words can become an



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obstacle as students learn new vocabulary and often limit the success of phonics instruction in meeting its ultimate goal—comprehension. In a recent study we conducted on vocabulary development and instruction, we found

that misidentifications between words and their meanings are common. When asked, for instance, “What is a troop?” a 1st grader, confusing the word with “truth,” said, “Don’t tell lies.” When asked, “What is a thorn?” another

student, confusing "thorn" with "torn," replied, "Like if you rip somebody's paper."

Louisa Cook Moats labeled confusion over word meanings and general gaps in vocabulary knowledge as a state of "word poverty." She suggests that word poverty seems most prevalent in populations largely made up of students from minority, English language learning, or low socioeconomic backgrounds. Moats estimates that upon matriculation into 1st grade, "linguistically advantaged" students know approximately 20,000 words, whereas "linguistically disadvantaged" students know only about 5,000. Further, she suggests that linguistically disadvantaged students suffer from partial knowledge of word meanings, confusion over similar-sounding words, and limited knowledge of how and when to use words (Moats, 2001).

The vocabulary gap between linguistically advantaged and disadvantaged students is particularly troubling to literacy educators. Research suggests that the vocabulary of entering 1st graders predicts not only their word reading ability at the end of 1st grade (Senechal & Cornell, 1993) but also their 11th grade reading comprehension (Cunningham & Stanovich, 1997).

Rich Contexts

Developing a comprehensive understanding of a word comes through repeated exposure to the word in a variety of rich contexts (Biemiller, 2001b). Only in this way do students fully acquire the word as part of their vocabulary. Knowledge of a word includes knowing how it sounds, how it is written, and how it is used as a part of speech; it also means familiarity with its *polysemy* (multiple meanings) and its *morphology* (derivation) (Nagy & Scott, 2000; Nation, 1990).

Each of these dimensions is important for word learning. For example, "thorn" and "torn" sound different when spoken. Connecting the spoken word to its written form, or orthographic representation, is helpful

because knowing that the words are spelled differently actually helps students attend to and pronounce the different letter-sounds (Ehri, 2000).

The process of comparing and contrasting words on the basis of different features—such as their spellings, their pronunciations, and their meanings—helps students categorize words for efficient storage in and retrieval from memory. Each of these features provides an additional memory hook by which students can access the word's meaning and form. Instruction that focuses on the multiple dimensions of a word will provide students with more secure knowledge than will instructional approaches that focus on only one of the word's dimensions.

the word, she encouraged them to connect the sounds to the spelling. She linked meaning, spelling, and sound.

Despite the benefits, teachers rarely practice either anchored word instruction or rich work with oral vocabulary. According to research, teachers of young children spend relatively little time thoroughly analyzing word meanings in texts (Biemiller, 2001a). Teachers address unknown words mainly through *context-based mentioning*, with which they parenthetically provide context-specific definitions and elicit students' experiences in similar contexts. For example, a teacher might mention that ponds have water or allude to a nearby pond as she reads a story about ponds but focus

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A form of instruction that we call *anchored word instruction* can provide students with this rich understanding. In an earlier article (Juel, Biancarosa, Coker, & Deffes, 2003), we discussed how a teacher introduced students to a new word, such as "pond." The teacher read aloud a book in which the word appeared, discussed the word's meaning, and pointed out pictures that illustrated the word. She had the students point to the word in the book or point to the letters on a word card. She had them "grab the last sound" in the air as they pronounced the word and point to the appropriate letter on the word card. Then she had them sound out the word.

By discussing the word in the context of the story, the teacher helped the students with word meaning. By asking the students to point to the word in the text and on a word card, she led them to focus on spelling. By having the students vocally elongate the sounds in

little attention on the meaning of the word (Blachowicz & Fisher, 2000; Dickinson, McCabe, & Anastopoulos, 2002). She does not follow up with more in-depth analysis, such as comparing ponds to lakes or oceans. Teachers highlight words in books when their definitions are necessary for comprehension, but they do not extend instruction of the words beyond the context of the story. It is unlikely that such moments will enable students with poor oral language skills to generate deep knowledge about the meanings of new words or the contexts in which the words typically appear.

A number of reading researchers (Beck, McKeown, & Kucan, 2002; Biemiller, 2001b; Nagy, 1988) believe that vocabulary instruction must be more analytic and substantial for words to really stick. These researchers suggest that such instruction, which we refer to as *analytic vocabulary instruction*, should

- Focus on words contextualized in literature, on words that are important to the text and useful to know in many situations, and on words that are uncommon in everyday language but recurrent in books.

- Provide clear explanations and examples of word meanings in various contexts and provide opportunities for students to discuss, analyze, use, and compare the words in these contexts.

- Furnish repeated occasions for students to hear words in varied contexts and to relate them to their own experiences and new knowledge.

- Encourage students to use words in new contexts and discover other interesting words.

This direct vocabulary instruction may be particularly important for students with weak oral language skills who lack the proper foundation for easily linking and acquiring new words.

Which Instruction Is Best?

To further understand the effects of anchored word instruction and analytic vocabulary instruction compared with the effects of the context-based vocabulary instruction more commonly seen in the early grades, we designed a six-week study comparing these three forms of vocabulary instruction. We conducted the study in six kindergarten classrooms and had a sample size of 92 students.

In the contextual condition, teachers related word meanings to students' background knowledge. In the analytic condition, teachers related words to students' background knowledge *and* engaged students in analyzing word meanings. In the anchored condition, which augments structured vocabulary instruction with phonics instruction,



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teachers related words to students' background knowledge, engaged students in active analysis of words, *and* called students' attention to words' component letters and sounds.

Teachers delivered instruction according to these conditions using a scripted curriculum. (We used a scripted curriculum solely for the purposes of the experimental study; we do not advocate the use of scripts in teaching!) We randomly assigned two teachers, one from each of two schools, to each condition; they delivered the scripted curriculums three days each week for six weeks. The students read a different book each week; the six books were read in the same order in each condition. Each day, teachers followed the specific scripted curriculum for the book during their 30-minute read-aloud time. They all chose the same five target words in each book, but word introduction and reinforcement

differed by condition.

The following examples from the curriculum for a book entitled *It's Mine* by Leo Lionni (1986) demonstrate the three conditions in action. An excerpt from the text follows.

In the middle of Rainbow Pond, there was a small island. Smooth pebbles lined its beaches, and it was covered with ferns and leafy weeds. On the island lived three quarrelsome frogs named Milton, Rupert, and Lydia. They *quarreled* and *quibbled* from dawn to dusk. "Stay out of the pond!" yelled Milton. "The water is mine." "Get off the island!" shouted Rupert. "The earth is mine." "The air is mine!" screamed Lydia as she leaped to catch a butterfly. And so it went.

Contextual Condition

Teacher: In the beginning, the book says the frogs quarreled all the time. Tell me about how the frogs quarreled in the book.

The book also says they quibbled. What are the frogs quibbling over in the book? How did the frogs change by the end of the book?

[Students respond]

Teacher: Have you ever disagreed with someone in the sense that you didn't want to listen to them or you didn't want to share with them? Tell me about your experiences quibbling with someone. How did you make up with your friend so you were not quarreling with him or her anymore?

Analytic Condition

Teacher: In the beginning, the book said the frogs were quarreling and quibbling. What did they do? Were they friends or enemies at the beginning? If you quarreled with a friend, what would that feel like? What would quarreling sound like? Show me a quarrel.

[Students respond]

Teacher: What are some things

people quarrel about? Use the word "quarrel" in a sentence by saying "People quarrel over ____." If you were quibbling with a friend, would you let them use your crayons or not? If you quibbled with a friend over whether you thought a game was fun, would you think the same as your friend or differently? Are quarrel and quibble peaceful and friendly or not? If someone quarreled and quibbled in our classroom, what would it look like? What can we do to make up to a friend when we quibble? Use the word "quibble" by saying "When you quibble with a friend you can ____."

Anchored Condition

Teacher: In the beginning, the book said the frogs were quarreling and quibbling. What did they do? Were they friends or enemies at the beginning? If you quarreled with a friend, what would that feel like? What would quibbling sound like? Show me.

[Students respond]

Teacher: Find the cards for "quarrel" and "quibble." [Students have their own sets of word cards.] This word is "quarrel" and this word is "quibble." [The teacher uses the word cards in a pocket chart to model.] They look a lot alike, and they mean similar things. What sound is at the beginning of "quarrel"? Two letters make that one sound. Point to those two letters. What letters are they? What sound is at the beginning of "quibble"? Two letters make that one sound. Point to those two letters. Are those the same letters as in "quarrel"? Is that the same sound, *qu* like "quarrel" and *qu* like "quibble"?

[Students respond]

Teacher: Let's look at "quarrel." Show me your cards. What sound is in the middle of *quarrrrrrre*? What letter is that? Point to that letter. What sound do you hear at the end of *quarrrrrrr*? What letter is that? Point to that letter.

[Students respond]

Teacher: Now let's look at "quibble." Show me your cards. What sound is in

the middle of *quibbbbbb*? What letter is that? Point to that letter. What sound do you hear at the end of *quibbblllll*? What letter is that? There is a silent *E* that doesn't make any sound after that letter. Point to the letter that says */I*. How are "quarrel" and "quibble" alike? How are they different?

Our Findings

Although the curriculum for the anchored condition seems longer in text, the instruction on letters and sounds goes very quickly. To address letters and sounds, we removed some of the focus on personal experiences, context, and meaning analysis to avoid adding to the instructional time of the condition.

Students who came to the study behind their peers in letter-naming fluency seemed to learn more vocabulary if they participated in the anchored condition.

To study the effectiveness of the conditions at fostering student learning, we pre-tested and post-tested students on targeted words using a researcher-designed vocabulary test. To determine whether students responded differently to the conditions depending on their overall level of vocabulary knowledge, we administered the Test of Language Development (Newcomer & Hammill, 1997). To see whether the conditions produced differential effects for students with different skills in letter-naming fluency, we administered the Dynamic Indicators of Early Literacy Skills (Good & Kaminski, 2002). To determine the relative effectiveness of each of the three conditions, we compared the pre-test and the post-test scores on the researcher-designed vocabulary test, taking into account the students' pre-test scores, their overall vocabulary knowledge, their overall

letter-naming fluency, and such characteristics as free or reduced-price lunch status, language background, gender, age, and race.

We found that the analytic and anchored conditions enabled students to learn the words in the curriculum more effectively than did the contextual condition, regardless of the students' general vocabulary knowledge, letter-naming fluency, or background characteristics. On average, students in the analytic and anchored conditions significantly outperformed students in the contextual condition on the post-test.

We adjusted the scores on the post-test in each of the conditions to account for any differences in the pre-test scores due to general vocabulary knowledge,

letter-naming fluency, or demographic characteristics. The differences between the analytic and contextual conditions in terms of the adjusted means—46.33 compared with 36.87—and between the anchored and contextual conditions—47.53 compared with 36.87—are statistically significant, whereas the difference between the analytic and anchored conditions—46.33 and 47.53 respectively—is not.

The findings of this study lend support to the call of such researchers as Beck and colleagues (2001, 2002) and Biemiller (2001a, 2001b) for more direct, active, and analytic vocabulary instruction in the early elementary grades. Our results confirm previous research suggesting that instruction that engages students in active analysis of word meanings is more effective in promoting learning than instruction that only has students relate words to their

background knowledge and personal experiences (Beck & McKeown, 2001).

There was no significant difference between the analytic and anchored conditions despite the fact that teachers divided instructional time in the anchored condition between word meaning analysis activities and attention to words' component letters and sounds. The two conditions had equal effects on students' learning of the new words. Although incoming characteristics did not appear to differentiate the effects of the analytic and anchored conditions, students who came to the study a standard deviation or more behind their peers in letter-naming fluency seemed to learn more vocabulary if they participated in the anchored condition. This may suggest that a focus on the letters and sounds of words during vocabulary instruction could benefit students with limited literacy skills. Students who are learning their letters and sounds may capitalize on the orthographic representation of a word to further anchor it in their memories.

Because of the limited scope of this study, we were unable to detect a statistically significant impact of this additional attention to letters and sounds in vocabulary instruction. We certainly expect, however, that the effectiveness of vocabulary instruction may depend on other factors: students' early literacy skills, such as their vocabulary knowledge and phonological awareness; print exposure upon school entry (Ewers & Brownson, 1999; Storkel & Morisette, 2002); and various demographic characteristics (Gathercole, Willis, Emslie, & Baddeley, 1992; Senechal, Thomas, & Monker, 1995).

The difficult news is that teachers in the early elementary grades need to be more attuned to extending students' meaningful vocabularies. They should take every opportunity to connect vocabulary words to texts, to other words, and to some concrete orthographic features within words. The good news, however, is that substantive

early work in oral vocabulary can make a real difference. ■

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