Study reads between the lines in children's vocabulary differences

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Credit: University of Texas at Dallas

The nation's 31 million children growing up in homes with low socioeconomic status have, on average, significantly smaller vocabularies compared with their peers.

A new study from the Callier Center for Communication Disorders at The University of Texas at Dallas found these differences in vocabulary growth among grade school children of different socioeconomic statuses are likely related to differences in the process of word learning.

Dr. Mandy Maguire, associate professor in the School of Behavioral and Brain Sciences (BBS), said in her study that children from lower-income homes learned 10 percent fewer words than their peers from higher-income homes. When entering kindergarten, children from low-income homes generally score about two years behind their higher-income peers on language and vocabulary measures.

The vocabulary gap between the two groups of children gets larger throughout their schooling and has long-term academic implications, Maguire said.

The primary reason for the differences in infancy and preschool is related to different quantity and quality of language exposure at home. But why the gap increases as the children get older is less studied.

"We might assume that it's the same reason that the gap is large when they're young: that their environment is different," Maguire said. "Another possibility is that all of this time spent in low-income situations has led to differences in their ability to learn a word. If that's the case, there's a problem in the mechanism of learning, which is something we can fix."

The study, recently published in the *Journal of Experimental Child Psychology*, aimed to determine whether socioeconomic status is related

to word learning in grade school and to what degree vocabulary, reading and working memory might mediate that relationship.

For the study, 68 children ages 8 to 15 performed a task that required using the surrounding text to identify the meaning of an unknown word. One exercise included three sentences, each with a made-up word at the end—for example, "Mom piled the pillows on the thuv."

"You have to understand all of the language in each sentence leading up to the made-up word, remember it and decide systematically across all three sentences what the made-up word must mean," Maguire said. "In this case, the three sentences all indicated 'thuv' meant 'bed.' This isn't quite the same as real word learning, where we have to create a new concept, but this what we think kids—and adults—do as they initially learn a word."

Specifically, the study found that children of lower socioeconomic status are not as effective at using known vocabulary to build a robust picture or concept of the incoming language and use that to identify the meaning of an unknown word.

Reading and working memory—also known to be problematic for children from low-income homes—were not found to be related.

The study also provides potential strategies that may be effective for intervention. For children ages 8 to 15, schools may focus too much on reading and not enough on increasing vocabulary through oral methods, Maguire said.

Maguire said parents and teachers can help children identify relationships between words in sentences, such as assigning a word like "bakery," and having the child list as many related words as possible in one minute. Visualizing the sentences as they read also can help.

"Instead of trying to fit more vocabulary in a child's head, we might be able to work on their depth of knowledge of the individual words and linking known meanings together in a way that they can use to learn new information," Maguire said.

More information: Mandy J. Maguire et al. Vocabulary knowledge mediates the link between socioeconomic status and word learning in grade school, *Journal of Experimental Child Psychology* (2017). DOI: 10.1016/j.jecp.2017.10.003

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