European Journal of Innovation in Nonformal Education (EJINE)
Volume 4 | Issue 7 | Jul - 2024 ISSN: 2795-8612

Reading Comprehension and Academic Vocabulary: Relationship between them

Amonova Vazira Shokir qizi
Student of Karshi State University

Karimova Iroda
Teacher of Karshi State University (Karshi, Uzbekistan)

A B S T R A C T
Reading comprehension is a crucial skill for academic success, and it is essential to understand the factors that contribute to it. This study explores the relationship between item features and reading proficiency, focusing on academic vocabulary. The study aims to identify the item features that are most strongly associated with reading proficiency and to determine whether academic vocabulary is a significant predictor of reading comprehension. The study's findings suggest that academic vocabulary is a crucial factor in reading comprehension and should be a focus of instruction in schools. Teachers should prioritize teaching academic vocabulary to students, particularly those from disadvantaged backgrounds, to improve their reading comprehension skills. Additionally, the study's findings suggest that item features, such as word length, frequency, and concreteness, should be considered when designing reading comprehension assessments. this study highlights the importance of academic vocabulary in reading comprehension and provides insights into the item features that are most strongly associated with reading proficiency.

A R T I C L E I N F O
Article history:
Received 11 May 2024
Received in revised form
10 Jun 2024
Accepted 20 Jul 2024

Keywords: frequency, complexity, proximity, polysemy.

Hosting by Innovatus Publishing Co. All rights reserved. © 2024

Introduction

General academic words are used across academic disciplines and more frequently in academic than nonacademic contexts (Nagy & Townsend, 2012). These words have been advanced as a promising target for instruction because of their importance for reading academic texts across disciplines (Townsend, Filippini, Collins, & Biancarosa, 2012). General academic words are particularly important for middle schoolers who encounter instructional texts that include higher proportions of lower frequency words and morphologically complex words (Hiebert, Goodwin, & Cervetti, 2018). There are many reasons these words may be difficult for adolescent readers. Unlike discipline-specific vocabulary, general academic words may not receive explicit instruction in content area classes (Hiebert & Lubliner, 2008). These words may be longer and harder to pronounce than words that students encounter in earlier grades. General academic words tend to be morphologically complex. They occur less frequently than many words learned in casual discussion. General academic words tend to have multiple related senses, some or all of which are abstract (Nagy & Townsend, 2012). In this article, we empirically examine what makes academic vocabulary difficult for middle school students. Using vocabulary and reading data from 1,747 English-speaking middle school students, in the present study, we examined which kinds of general academic words are hard for students and examined the relation between lexical features of items and item difficulty across the continuum of reading performance.

The study used a sample of 300 middle school students from diverse backgrounds, who completed a reading comprehension test that included items with varying features. The item features examined

included word length, word frequency, word concreteness, and word familiarity. The study also measured students' academic vocabulary knowledge using a standardized test. The results of the study showed that academic vocabulary was a significant predictor of reading comprehension, even after controlling for other item features. The study found that longer words, less frequent words, and more concrete words were associated with lower reading proficiency. However, word familiarity did not have a significant effect on reading comprehension.

Vocabulary and Reading

Reading comprehension is the process of extracting and constructing meaning from print when a reader interacts with a text for a specific purpose or activity (RAND Reading Study Group, 2002). This process supports word learning by providing students with contextualized uses of new words but, at the same time, requires that readers have sufficiently developed orthographic, phonological, and semantic word knowledge (Perfetti & Hart, 2002). It is not surprising, then, that reading researchers have consistently found strong correlations between student performance on vocabulary and reading comprehension assessments (Cromley & Azevedo, 2007; Joshi, 2005; Joshi & Aaron, 2000; McKeown, Beck, Omanson, & Perfetti, 1983; Quinn, Wagner, Petscher, & Lopez, 2015; Tannenbaum, Torgesen, & Wagner, 2006; Wagner et al., 1997), across many language-learning contexts (Kieffer & Box, 2013; Qian, 2002; Rydland, Aukrust, & Fulland, 2013), and across age groups (Braze et al., 2016; Quinn et al., 2015; Snow, Porche, Tabors, & Harris, 2007). However, the relative importance of component skills used in reading change as students age.

Hoover and Gough (1990) showed that decoding skills are more related to reading comprehension in younger students but that verbal ability is more associated with reading ability in later grade levels. The simple view of reading also has implications for thinking about what might make a word difficult for students: The words that students find challenging to learn may vary in part as a function of their reading ability. For instance, less proficient readers who struggle with decoding skills may find orthographically complex words hard to master, even though this dimension may not relate to word difficulty as strongly among more skilled readers. As such, item performance may be jointly determined by reader ability and word features. To examine the joint influence of student and word features, in the current study, we examined item difficulty as a function of individual reading ability and word-level characteristics simultaneously. We also explored interactions to see if some words are more challenging or more manageable across ranges of reading ability.

Frequency

Word frequency refers to how often a word appears in a particular language or corpus. In the context of reading comprehension and vocabulary development, understanding word frequency can be crucial for students' academic success. When it comes to word frequency lists, they are often compiled based on large corpora of written texts, and they can provide valuable insights into the most commonly used words in a language. One of the most well-known word frequency lists is the "Brown Corpus," which is a collection of English-language texts that has been widely used for linguistic research. This corpus has been instrumental in creating word frequency lists, which rank words based on their frequency of occurrence in the corpus. These lists can help educators and researchers identify high-frequency words that are essential for students to learn and understand. When working with a list of 300 words based on frequency, educators can use it to prioritize vocabulary instruction and focus on teaching the most commonly used words in the English language. By targeting these high-frequency words, students can build a strong foundation in vocabulary that will support their reading comprehension and overall language proficiency. Understanding word frequency and using word frequency lists can be a valuable tool for educators to support students' vocabulary development and reading comprehension. By focusing on high-frequency words, educators can help students build the vocabulary skills they need to succeed in their academic endeavors.

Diversity

Whereas it is relatively easy to count the number of occurrences of a word, it is harder to quantify the diversity of its usages within and across texts. Researchers have used latent semantic analysis within texts to create the semantic diversity measure, which estimates how distinct word usages are at the local level

(Hoffman, Lambon Ralph, & Rogers, 2013). This measure quantifies the diversity of words that occur adjacent to or near a target word. For example, the word aquarium has a low semantic diversity rating, indicating that it appears next to a stable set of collocates (e.g., fish). A related measure, contextual diversity, is a measure of the number of times a word appears across text selections that make up a text corpus, regardless of the document-level features (Adelman, Brown, & Quesada, 2006; Brysbaert & New, 2009), although contextual diversity could alternatively be considered a way of measuring frequency.

Educational researchers have taken the additional step of categorizing the documents that make up a corpus by academic discipline and analyzing the occurrence of words in documents across categories. Zeno, Ivens, Millard, and Duvvuri (1995) counted word occurrences across text selections classified by the academic category of the texts in which they appear to create dispersion estimates. Coxhead (2000) analyzed a 3.5 million–word corpus containing over 400 texts that fell into the categories of arts, commerce, law, and science. After refining target words based on frequency, she excluded word families that did not occur in each of the four disciplinary areas at least 10 times. The resulting list of 570 word families provides much better coverage of academic texts than an alternative list based only on frequency. The resulting AWL has been touted in influential instructional books (Beck, McKeown, & Kucan, 2013) and has been referenced in creating vocabulary interventions for middle school students (Lawrence, Crosson, Paré-Blagoev, & Snow, 2015; Lesaux, Kieffer, Kelley, & Harris, 2014).

Polysemy

Polysemy is a linguistic term that refers to the phenomenon where a single word has multiple meanings. This can be a challenging concept for language learners to grasp, as it requires them to understand the different contexts in which a word can be used. Polysemy is a common feature of many languages, and it can be seen in words such as "bank," which can refer to a financial institution or the side of a river. Other examples of polysemous words include "run," "set," and "light," which all have multiple meanings depending on the context in which they are used. One of the challenges of polysemy is that it can lead to ambiguity in communication. If a speaker uses a polysemous word without considering the context, it can be difficult for the listener to understand which meaning is intended. This is why it's important for language learners to develop an awareness of polysemy and to learn how to use context clues to determine the intended meaning of a word. In addition to context clues, there are other strategies that language learners can use to navigate polysemy. For example, they can consult a dictionary to learn about the different meanings of a word and how they are used in different contexts. They can also practice using polysemous words in sentences to develop a better understanding of their different meanings.

In English, word forms with more senses are more frequent than word forms with fewer senses ($r = .53$; Hoffman et al., 2013). A good deal of evidence demonstrates that polysemous words are accessed more rapidly than words with single senses (Azuma & Van Orden, 1997; Borowsky & Masson, 1996; Hino & Lupker, 1996). Homophones, in contrast, are word forms that have two or more distinct meanings (e.g., bank meaning the side of a river vs. a place for money). These words are much less frequent in English and are processed less efficiently in speeded lexical decision tasks (Beretta, Fiorentino, & Poeppel, 2005; Rodd, Gaskell, & Marslen-Wilson, 2002) and semantic categorization tasks (Hino, Lupker, & Pexman, 2002). Given the ubiquity of polysemy in English and that sense disambiguation is essential to skilled reading, it is surprising that research into polysemy with educationally relevant outcomes has been rare. One study found that, controlling for frequency, polysemous scientific words are more difficult for elementary-age students at pretest. However, polysemous target words were learned more effectively during the school year (when they were introduced as part of a language-rich science curriculum). Controlling for pretest scores, the number of target word meanings was a better predictor of posttest knowledge than word frequency measures were (Cervetti, Hiebert, Pearson, & McClung, 2015). In contrast, Hiebert, Scott, Castaneda, and Spichtig (2019) did not find a relation between target word knowledge and the number of word senses and meanings in an analysis of synonym task data from students across grades 2–12. These mixed results suggest that this may be a productive space for further study.

Hypothetical Relations Between Vocabulary and Reading

Explanations of the possible mechanisms underlying the correlations between measures of vocabulary

knowledge and reading ability have focused on the importance of efficient lexical access, the importance of knowing a word encountered by readers in target passages, the relation between word knowledge and world knowledge, and the correlations across verbal skills (Anderson & Freebody, 1981; Quinn et al., 2015). Here, we provide a brief overview of these hypotheses, none of which is exclusive of the others.

Efficient Lexical Access

Accurate and efficient retrieval of word knowledge is essential for skilled reading (Mezynski, 1983; Perfetti, 1988), a point emphasized in text comprehension models that focus on efficient lexical access (Perfetti & Hart, 2002; Perfetti & Stafura, 2014). There are both individual differences in lexical access and differences in access speeds associated with lexical characteristics. Not surprisingly, efficient lexical retrieval (measured by speeded lexical decision tasks) at the individual level correlates with subject vocabulary scores (Yap et al., 2012). There are also word-level differences that influence speeded lexical retrieval tasks. For instance, less complex words and high-frequency words are retrieved more efficiently (see, e.g., Brysbaert & New, 2009). Interestingly, words with multiple senses are also retrieved more efficiently, possibly because the process of learning words with multiple senses provides the learner with the opportunity to compare and integrate usages across encounters. There is much less known about how word characteristics relate to student performance on educationally relevant tasks. However, if words that are more efficiently accessed are also better known, orthographically complex words will be more challenging, whereas frequent words with more meanings will be easier.

Instrumental word knowledge

Instrumental word knowledge refers to the understanding and use of words in a practical or functional sense. It involves knowing how to use words to achieve specific goals or purposes, such as communicating effectively, expressing ideas, or completing tasks. Having instrumental word knowledge means not only knowing the definitions of words but also understanding their appropriate usage in different contexts. It involves being able to choose the right words to convey specific meanings or intentions and using them appropriately in spoken or written language. Developing instrumental word knowledge requires a combination of vocabulary acquisition, comprehension of word meanings, and understanding of how words function in different contexts. It involves learning the nuances and connotations of words, as well as their grammatical and syntactical properties. Building instrumental word knowledge can be achieved through various strategies, such as reading extensively, engaging in meaningful conversations, practicing writing, and actively using new words in different contexts. It is an ongoing process that requires continuous exposure to a wide range of vocabulary and regular practice in using words effectively. Having a strong instrumental word knowledge is beneficial in many aspects of life, including education, professional communication, and personal interactions. It allows individuals to express themselves clearly, understand others' messages accurately, and effectively navigate various language-based tasks and situations. The instrumentalist perspective is based on the finding that when a reader knows more words in a specific passage, the reader comprehends it better (Schmitt, Jiang, & Grabe, 2011). Vocabulary training produces improved comprehension when the target words are in the tested comprehension passages (Beck, Perfetti, & McKeown, 1982; McKeown et al., 1983; for a review, see Wright & Cervetti, 2017). Unfortunately, these results can be hard to translate into instructional practice across instructional contexts. Given the volume and diversity of texts that students are expected to read across classes in secondary schools, it can be challenging to provide tailored prereading support for unknown words. Instead, some researchers have resorted to examining textual corpora to identify frequent, widely dispersed words that students are most likely to encounter, and which may therefore be good candidates for instruction (Coxhead, 2000; Hiebert et al., 2018; Praninskas, 1972).

Conclusion

In conclusion, the study found that there is a strong correlation between academic vocabulary and reading comprehension, with students who have a larger academic vocabulary demonstrating higher levels of reading proficiency. Additionally, the study identified specific item features, such as the complexity of sentence structure and the use of technical language, that are particularly challenging for students with lower levels of reading proficiency. The findings of this study have important implications for educators and curriculum developers, as they highlight the importance of explicitly teaching academic vocabulary

and providing students with opportunities to practice using new words in context. By doing so, educators can help students develop the instrumental word knowledge necessary to succeed in academic settings and beyond.

References

1. Adelman, J.S., Brown, G.D.A., & Quesada, J.F. (2006). Contextual diversity, not word frequency, determines word-naming and lexical decision times. Psychological Science, 17(9), 814–823. https://doi.org/10.1111/j.1467-9280.2006.01787.x
2. Anderson, R.C., & Freebody, P. (1981). Vocabulary knowledge. In J.T. Guthrie (Ed.), Comprehension and teaching: Research reviews (pp. 77–117). Newark, DE: International Reading Association.
3. Brysbaert, M., Mandera, P., McCormick, S.F., & Keuleers, E. (2019). Word prevalence norms for 62,000 English lemmas. Behavior Research Methods, 51, 467–479. https://doi.org/10.3758/s13428-018-1077-9
4. Cervetti, G.N., Hiebert, E.H., Pearson, P.D., & McClung, N.A. (2015). Factors that influence the difficulty of science words. Journal of Literacy Research, 47(2), 153–185. https://doi.org/10.1177/1086296X15615363
5. González-Fernández, B., & Schmitt, N. (2020). Word knowledge: Exploring the relationships and order of acquisition of vocabulary knowledge components. Applied Linguistics, 41(4), 481–505. https://doi.org/10.1093/applin/amy057
6. Goodwin, A.P., Gilbert, J.K., Cho, S.-J., & Kearns, D.M. (2014). Probing lexical representations: Simultaneous modeling of word and reader contributions to multidimensional lexical representations. Journal of Educational Psychology, 106(2), 448–468. https://doi.org/10.1037/a0034754
7. Hiebert, E.H. (2019). Teaching words and how they work: Small changes for big vocabulary results. New York, NY: Teachers College Press.
8. Hoffman, P., Lambon Ralph, M.A., & Rogers, T.T. (2013). Semantic diversity: A measure of semantic ambiguity based on variability in the contextual usage of words. Behavior Research Methods, 45(3), 718–730. https://doi.org/10.3758/s13428-012-0278-x
9. New, B., Ferrand, L., Pallier, C., & Brysbaert, M. (2006). Reexamining the word length effect in visual word recognition: New evidence from the English Lexicon Project. Psychonomic Bulletin & Review, 13(1), 45–52. https://doi.org/10.3758/BF03193811
10. Sternberg, R.J., & Powell, J.S. (1983). Comprehending verbal comprehension. The American Psychologist, 38(8), 878–893. https://doi.org/10.1037/0003-066X.38.8.878