

# The Role of Knowledge in Reading Achievement

*By Douglas Fisher*

## Introduction

Reading is not merely a mechanical process of decoding letters into words but a complex interaction between text and a reader's knowledge. The significance of knowledge in reading and learning to read is profound, as knowledge can facilitate comprehension, engagement, and the application of new information (Smith, Snow, Serry, & Hammond, 2021). Importantly, teachers play a valuable role in building and activating knowledge, which in turn contributes to reading achievement (Neuman, Kaefer, & Pinkham, 2014).

We will begin with two historical studies that highlight the relationship between reading and knowledge. Research on the correlation between achievement on standardized tests and reading outside of school is clear—reading volume is associated with academic performance (Anderson, Wilson, & Fielding, 1988).

### ABOUT THE AUTHOR



Dr. Douglas Fisher is Professor and Chair of Educational Leadership at San Diego State University and a leader at Health Sciences High & Middle College. He was previously an early intervention teacher and elementary school educator. He is the recipient of an International Reading Association William S. Grey citation of merit, an Exemplary Leader award from the Conference on English Leadership of NCTE, as well as a Christa McAuliffe award for excellence in teacher education. He has published numerous articles on reading and literacy, differentiated instruction, and curriculum design as well as books such as *The Teaching Reading Playbook*.

Consider three hypothetical fifth-grade students. The first reads 40 minutes a day on average, consuming more than 2.3 million words per year, and this student scores in the 90th percentile on achievement tests. The second—our average student—scores in the 50th percentile. The correlational data shows that this student reads on average for 12 minutes a day, resulting in about 601,000 words consumed per year, or 1.7 million words fewer than a high-achieving classmate. Of even more concern is the child who reads for only 90 seconds a day on average outside of school. That child is exposed to a deeply impoverished 51,000 words per year (about the same reading volume the first student read in a week) and scores at the 10th percentile on standardized tests. This sobering data is correlational, and not causal, but points to the multiplicative effect of low reading volume across the school years. By the time that fifth grader enters high school, they are now nearly 7 million words behind the high-achieving classmate.

Now let's look at the reciprocal—what does knowledge do for reading? Evidence comes from studies like those done with seventh graders (Recht & Leslie, 1988). Students were sorted into four groups across two criteria: current reading level and knowledge of baseball. After reading an informational passage about baseball, they were assessed on their comprehension and recall of what they had read. To no one's surprise, those who were strong readers and possessed high knowledge of baseball scored at the most proficient. But to everyone's surprise were those who performed at comparable levels: students who had low reading skills but high levels of baseball knowledge. In fact, they outperformed those who had high reading levels but low knowledge of baseball. In other words, knowledge had a mediating effect on reading performance. The takeaway from these two iconic studies? Knowledge is acquired through reading, and in turn it plays an influential role in what is understood when reading.

A more recent study that highlighted the role of knowledge in reading was conducted by Tyner and Kabourek (2021), who analyzed data from the federal Early Childhood Longitudinal Study, Kindergarten Class of 2010–11. Using a sample of 6,829 students, they wanted to identify the impact that time spent on different subjects had on reading performance across Grades 1 to 5. They controlled for several potential impacting factors, such as student family income; student race/ethnicity; gender; whether the student attended a public, private, or charter/magnet school; length of teacher tenure; and the total amount of instructional time per day. Their findings: “An additional 30 minutes of social studies instruction per day was associated with a 15 percent of a standard deviation increase in reading ability over other students, a modest but sustained effect over this period. Girls, students from less-affluent families, and students from families where English was not the main home language saw even greater effects of social studies instruction on reading ability” (p. 34). Again, knowledge is a key contributor to reading development.

## Differentiating Between Building Knowledge and Background Knowledge

Although the terms "building knowledge" and "background knowledge" are related, they refer to different aspects of the learning process. Background knowledge consists of the prior knowledge and experiences that students bring to the reading process (Fisher, Frey, & Lapp, 2012). It includes everything from information and personal experiences to cultural norms and linguistic competence. This background knowledge shapes how students interpret texts and the connections they make (Hwang, Cabell, & Joyner, 2022).

In contrast, building knowledge is an active process facilitated by educational experiences where teachers intentionally develop students' knowledge bases necessary for future learning. While background knowledge can be passive and coincidental, accumulated through life experiences, building knowledge is more systematic and targeted towards specific educational goals.

Understanding the interplay between building knowledge and activating background knowledge is fundamental for effective teaching. Educators must assess the existing knowledge of their students and strategically introduce new concepts that build upon and expand this foundation. Simultaneously, they must implement strategies to make these new concepts resonate with the students' existing knowledge, thereby enhancing their academic growth and reading proficiency. The ultimate goal is to equip students with both a reservoir of knowledge and the ability to tap into this reservoir as they engage with new texts, thereby fostering lifelong learners who are proficient readers.

### Building Knowledge

Building knowledge involves the deliberate acquisition of new information, which is integrated with students' existing knowledge bases. This aspect of teaching is particularly critical in reading because it enables students to understand and interpret complex texts across disciplines. A broad and deep knowledge base enhances comprehension and provides a scaffold for engaging with more challenging material. To build knowledge effectively, educators employ a variety of instructional strategies (e.g., Dempsey, 2020; Lupo et al., 2018; Lupo et al., 2020; Marzano, 2004; Stevens, 1982):

- **Direct Instruction:** Teachers provide explanations and demonstrations of key concepts, facts, skills, ideas, or theories. This approach ensures that all students have access to key information, regardless of their prior knowledge.
- **Varied Reading Materials:** Introducing students to a wide range of diverse texts broadens their understanding and exposes them to multiple viewpoints and vocabularies. In addition, texts that are less complex can help students develop knowledge that enhances their understanding of more complex texts.

- **Interactive Learning:** Activities such as field trips, virtual visits, videos, group discussions, and projects help students to acquire new knowledge. These direct experiences tend to be memorable and have a strong impact on knowledge.

## Activating Knowledge: Key to Unlocking Understanding

Activating knowledge is the process by which teachers help students use what they already know to engage with new content. This is essential for reading comprehension, as it allows students to connect new texts to existing schemas, enhancing understanding and retention. Effective strategies for activating knowledge include (Dwi, Siregar, & Damanik, 2022; Elbro & Buch-Iversen, 2013; Hattan & Alexander, 2021; Richards & Gipe, 1992):

- **Pre-Reading Activities:** Techniques such as brainstorming or KWL (Know, Want to Know, Learned) charts help students recall relevant information and set purposes for their reading. This sharpens their focus and drives engagement.
- **Predictive Questioning:** By asking questions about the text before reading, teachers stimulate students' curiosity and prompt them to draw on their background knowledge. This technique also sets a framework for what to expect and guides comprehension.
- **Graphic Organizers:** Tools like concept maps or Venn diagrams enable students to visually organize information, making it easier to connect new and old knowledge.

## Conclusion

The dynamic role of knowledge in reading and learning to read highlights the importance of both building and activating knowledge. Teachers, as facilitators of knowledge, must manage the dual tasks of broadening and deepening student knowledge while making sure it is effectively employed to foster better reading and learning outcomes. Educators must fill knowledge gaps and activate and utilize the reservoirs of knowledge and experiences students bring to the classroom. Through these efforts, teachers can cultivate readers who are not only proficient but also thoughtful and informed thinkers, capable of navigating the vast seas of text and information they will encounter throughout their lives.

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