

Research in Brief: Preschool predictors of later reading comprehension ability

Reading comprehension is the ability to extract meaning from text. Reading comprehension is an essential skill for school and vocational success. The development of reading comprehension begins in childhood. Over recent decades there have been many longitudinal studies conducted to analyze what predicts reading comprehension in children. These studies have documented children's literacy skills over time to identify early signs of difficulties in language and reading. This knowledge provides important implications for developing preventive school strategies and interventions to reduce reading comprehension problems among youth.

Reading comprehension has been defined by Gough and Tunmer (1986) as the product of decoding and linguistic comprehension. Decoding is the ability to derive meaning from print or symbols. Linguistic comprehension is the ability to translate meaning at the word level into sentences and speech. This "simple view of reading" suggests that there are two main factors that contribute to one's comprehension of text. Although other frameworks exist for conceptualizing reading comprehension, the "simple view of reading" has the strongest evidence for support.

Despite a large number of studies on reading comprehension, the results have been inconsistent. A systematic review was conducted in 2017 to summarize the literature and to provide estimates on predictors of reading comprehension from preschool years and beyond. In addition to Gough and Tunmer's (1986) "simple" two-factor view of reading comprehension, the systematic review also assessed whether a broadened model for reading comprehension is warranted.

The main outcomes assessed in the review are potential preschool predictors of later reading comprehension skills; 1) decoding (i.e. letter knowledge and phonological awareness); 2) linguistic comprehension (i.e. vocabulary and grammar); and 3) domain-general cognitive skills (i.e. memory and nonverbal intelligence).

Why does this matter?

- ⇒ The development of reading comprehension skills begins in childhood, and is essential for school and work success.
- ⇒ Understanding preschool predictors of later reading comprehension is important for the development of early strategies and interventions at school.
- ⇒ The systematic review provides evidence for moderate correlations between three domains of preschool predictors and later reading comprehension: 1) decoding; 2) linguistic comprehension; and 3) domain-general cognitive skills.
- ⇒ Targeting a broad set of language and reading-related skills may be effective in improving reading comprehension ability among children.



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What is a systematic review?

A systematic review is a type of study that exhaustively summarizes the literature on a specific research question. The purpose of a systematic review is to draw a collective conclusion that provides stronger evidence than any single study. This research method involves: 1) framing a specific research question; 2) running a comprehensive search in the literature; 3) screening the retrieved articles for relevance; 4) assessing the research quality of the relevant articles; 5) abstracting results from the relevant articles; and 6) synthesizing the results of the relevant articles to draw a conclusion.

This systematic review was produced under the guidelines of the Campbell Collaboration, an international collaborative that promotes the production and use of systematic reviews and other evidence synthesis for evidence-based policy and practice.

What did the researchers do?

The researchers undertook a systematic review to determine whether reading-related preschool predictors (decoding, linguistic comprehension, and domain-general cognitive skills) are correlated with later reading comprehension skills. They searched for research articles published since 1985 in seven online databases, including Google Scholar, PsycINFO, ERIC, Web of Science, ProQuest Dissertations and Theses, OpenGrey.eu, and Linguistics and Language Behavior Abstracts. Furthermore, the researchers hand-searched for articles in the Journal of Educational Psychology, Scientific Studies of Reading, and Developmental Psychology. These specific journals were selected based on where the majority of the included studies for the review were published.

All articles retrieved from these sources were then screened against pre-defined inclusion/exclusion criteria by two independent reviewers on the research team. Relevant studies were included in the systematic review if they were longitudinal observational studies that followed a group of children from preschool age through to school age. The studies must have also reported on at least one of the following preschool predictors of later reading comprehension:

Decoding:

Phonological awareness: “the ability to detect, manipulate, or analyze the auditory aspects of spoken language, independent of meaning”

Letter knowledge: “understanding of the names and sounds associated with printed letters”

Rapid automatized naming: “the ability to quickly name a sequence of repeating random sets of pictures of objects, or colours, letters, or digits”

Linguistic comprehension:

Vocabulary: “the words with which one is familiar in a given language”

Grammar: “knowledge on how words are combined to form coherent sentences”

Domain-general cognitive skills:

Short-term memory: “the capacity to store information in situations that do not impose other competing cognitive demands”

Working memory: “the capacity to store information while engaging in other cognitively demanding activities”

Nonverbal intelligence: “the ability to analyze information and solve problems that do not necessarily require words”

What did they learn?

From 3285 individual articles retrieved, 63 studies were deemed eligible to be included in the systematic review. All of the listed preschool predictors were found to have a moderate correlation with later reading comprehension, except for non-word repetition (a subcategory of short-term memory that involves repeating nonsensical sound combinations or “non-words”). As well, linguistic comprehension played a more important role in predicting reading comprehension for older readers than for younger readers.

The results show that a broad set of language and reading-related skills are instrumental to developing children’s reading comprehension ability. As such, it is important for educators to encompass a holistic approach to instructing reading comprehension.

Future studies are needed to assess the generalizability of these results among representative samples, especially for those with learning difficulties and those who are second language learners.

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