

HIGHLIGHT

The Decoding Threshold: Measuring the Roots of Older Students' Reading Difficulties: New Evidence



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Background

PROBLEM

By the time students reach upper elementary school, they are expected to have mastered foundational reading skills. By fourth grade, students should be “reading to learn,” not learning to read. But this is not the reality for many students who continue to struggle with basic reading skills well beyond the elementary grades. ETS researchers have found that if children do not have adequate word recognition skills, their reading comprehension often won’t get better no matter how much direct support for comprehension they receive. But most schools do not routinely assess word recognition skills after 3rd grade.

SOLUTION

ETS ReadBasix® is a unique web-browser assessment for students in grades 3–12, designed to identify those struggling with basic reading skills and provide teachers with detailed insights to target specific areas of need. The assessment includes six subtests: Word Recognition & Decoding, Vocabulary, Morphology, Sentence Processing, Reading Efficiency, and Reading Comprehension, addressing foundational skills often overlooked by other assessments.

WHAT IS A “THRESHOLD”?

In reading, a “threshold” is the point at which a student has enough basic reading skills (like recognizing words and sounding them out) to understand more complex reading tasks. Students who are below this threshold may struggle with reading growth in areas like vocabulary and comprehension, while those who are above it tend to progress more quickly.

WHAT IS DECODING?

Decoding is the process through which readers identify words and understand their meanings; decoding is crucial for reading comprehension.

WHAT IS THE DECODING THRESHOLD?

The decoding threshold refers to a critical level of measured decoding skill; when students’ measured decoding abilities are below this threshold value, their reading comprehension scores are constrained to a low level.

Summary

In 2022 Reading Reimagined, a funded program of the Advanced Education Research and Development Fund (AERDF), asked ETS researchers to confirm earlier findings on the decoding threshold.

Across the U.S. only a third of students in upper elementary and middle school can independently read grade level text. Nation-wide low reading achievement rates go back decades, pointing to a fundamental failing in how we support students' literacy development. Reading Reimagined aims to improve reading instruction for students in grades 3-8, and believes the decoding threshold phenomenon is a crucial piece of the puzzle.

This report summarizes the findings of two replication studies.

The first study identified the decoding threshold score on the ReadBasix scale (225) and showed that students scoring below this level had slower progress in key reading skills like vocabulary, sentence processing, and reading comprehension.

The second study confirmed that students with poor decoding skills spent less time trying to decode unfamiliar words, showing less reliance on using sound-based strategies.

These findings match previous studies, strengthening the evidence for the reliability of ReadBasix and the importance of the decoding threshold in reading development.

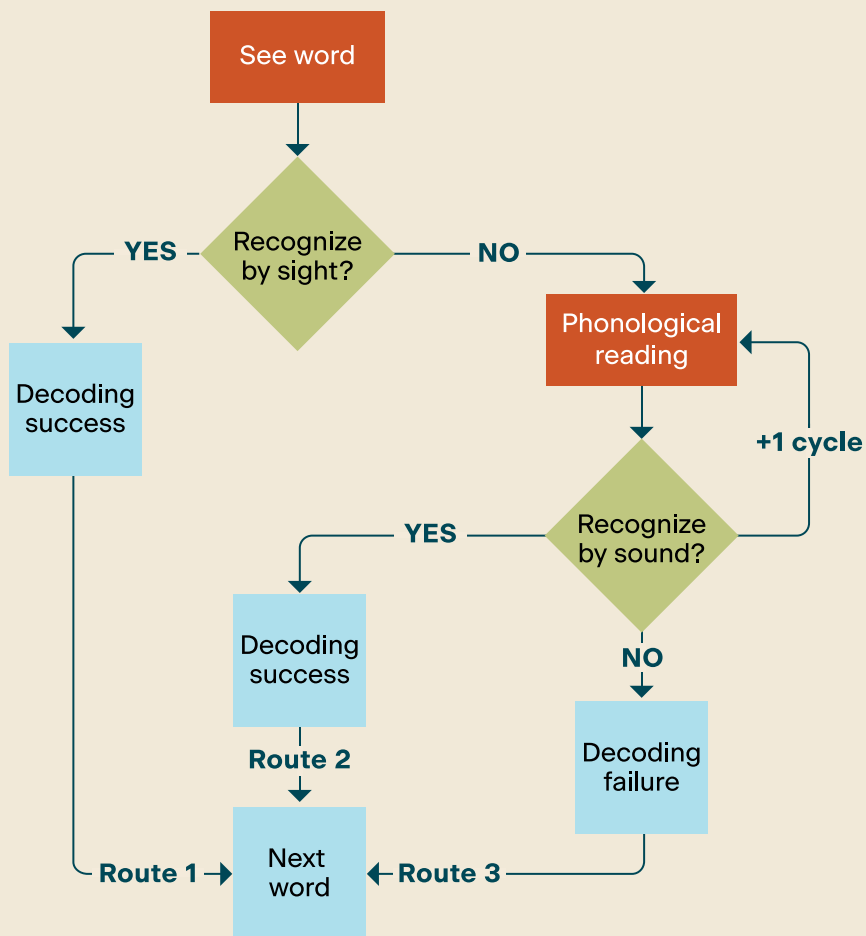


Figure 1. Decision Making Process During a Decoding Task

The three routes are represented by the three types of items on the ReadBasix WRD subtest.

In the test, students see one letter string at a time and decide if it's a real word, a pseudo-homophone, or a nonword. Correctly identifying each type corresponds to Routes 1, 2, and 3. Specifically, each nonword requires going through Route 3 (decoding failure) to confirm it's a nonword.

Decoding success takes fewer steps and less time. If a test taker recognizes the word after one phonological recoding cycle, they just select it. If they don't recognize it, they need to try more pronunciations before confirming it's a nonword. So, response times should be longest for nonword items, shortest for real word items, and in between for pseudo-homophones.

FINAL NOTE

The decoding threshold represents a crucial benchmark for assessing student reading ability, as it uncovers a potential barrier to comprehension.

Early identification of students whose decoding skills fall below the decoding threshold is essential for providing effective support. Addressing decoding issues in a timely way not only strengthens this foundational skill but also fosters growth in other reading subskills, ultimately contributing to better comprehension and academic success.



AERDF is a national nonprofit dedicated to advancing research and development in PreK-12 education. Founded in 2021, AERDF pursues evidence-based breakthrough innovations through scientific discoveries and inventions that unlock new capabilities for addressing the most persistent challenges in teaching, learning, and assessment.



READING REIMAGINED, a research and development program of AERDF, tackles reading inequality by improving how reading is taught and supported. The insights from this work will be used to create practical, technology-enabled tools to help all students, especially those facing poverty, become better readers.