

# Highlights of the 2018 NAEP Oral Reading Fluency Study





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**APRIL 2021**

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**April 2021**

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This report was prepared for the National Center for Education Statistics under Contract No. ED-IES-12-D-0002 with American Institutes for Research. Mention of trade names, commercial products, or organizations does not imply endorsement by the U.S. government.

**Suggested Citation**

White, S., Sabatini, J., Park, B. J., Chen, J., Bernstein, J., and Li, M. (2021). *Highlights of the 2018 NAEP Oral Reading Fluency Study* (NCES 2021-026). U.S. Department of Education. Washington, DC: Institute of Education Sciences, National Center for Education Statistics. Retrieved [date] from <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2021026>.

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# Introduction

This publication highlights the key concepts and findings of the 2018 National Assessment of Educational Progress (NAEP) Oral Reading Fluency (ORF) study. For additional details, see its companion publication, *The 2018 NAEP Oral Reading Fluency Study* (White et al. 2021), which is available on the NAEP ORF website at <https://nces.ed.gov/nationsreportcard/studies/orf/>.

Oral reading fluency is defined as the ability to read text aloud with speed, accuracy, and proper expression. The 2018 NAEP ORF study was the first such NAEP study since 2002. It was administered to a nationally representative sample of over 1,800 fourth-graders from 180 public schools.

The students in the ORF study first completed the NAEP fourth-grade reading assessment. Then they moved on to the tasks that were administered for this study: reading out loud four short passages to assess oral reading fluency and two word lists to assess skills that provide the foundation for fluency. Both the NAEP reading tasks and the study tasks were administered to students on tablets, and students' responses were recorded on the tablets.

## Purpose of the ORF Study

The purpose of the 2018 NAEP ORF study is to add new, policy-relevant information to the NAEP reading assessment. It includes, for the first time, a close examination of the oral reading fluency and foundational skills of fourth-grade public school students who perform below *NAEP Basic* on the NAEP reading assessment. “Foundational skills,” word reading and phonological decoding, are defined under the heading, *Foundational Skills for Fluency*.

## Importance of Measuring Oral Reading Fluency

Students who read aloud with appropriate speed, accuracy, and expression (i.e., students who have oral reading fluency) are more likely to comprehend connected text (Sabatini, Wang, and O'Reilly 2019) because they are able to conserve cognitive resources that can be applied to the comprehension of meaning (Perfetti 2007). Thus, oral reading fluency is a reliable and easily accessible indicator of overall reading competence—and a strong marker of progress in learning to read (Fuchs et al. 2001)—and its assessment has become one of the primary means of determining which elementary school students are on track toward meeting state reading standards and which students would benefit from additional services and intervention (McGlinchey and Hixson 2004; Reschly et al. 2009).

## Foundational Skills for Fluency

The term “foundational skills” refers to two skills that are assessed in this study with two different word lists: (1) *word reading* (also known as word recognition)—the ability to read familiar words with accuracy and speed—and (2) *phonological decoding*—the ability to pronounce unfamiliar words based on knowledge of spelling-sound correspondences.<sup>1</sup> Research has established that fast and accurate word reading is a major driver of oral reading fluency (e.g., Eason et al. 2013; Metsala and David 2017; Silverman et al. 2013). In addition, phonological decoding is regarded by almost all reading researchers as a critical prerequisite for the development of skilled, fluent reading and reading comprehension. In essence, as children apply phonological decoding skills to the unfamiliar words that they encounter in text, they make a transition from being “novices” to being “experts” who read familiar words rapidly and automatically (Castles, Rastle, and Nation 2018; Share 1995).

## The Role of Language Comprehension in Reading Comprehension and Oral Reading

Although the ORF study focuses on oral reading fluency, word reading, and phonological decoding, they are not the only factors that may affect performance on the fourth-grade NAEP reading assessment. One of the most important factors is language comprehension. “Language comprehension” is the ability to understand language based on knowledge of the meaning of words, sentence structure, and other aspects of language.<sup>2</sup> An extensive body of research and theory supports the view that language comprehension is necessary for reading comprehension (see, e.g., Foorman, Petscher, and Herrera 2018; Hoover and Gough 1990).

It is important to recognize that oral reading also involves language comprehension, just as silent reading and reading comprehension do. First, when students read a passage out loud with appropriate expression, they are using their ability to comprehend language as well as read the words in the passage. Second, when students read a passage out loud, they use their knowledge of word meaning and sentence structure to anticipate and recognize (read) the words in the text. This process is called “contextual facilitation of word recognition.”<sup>3</sup> Therefore, oral passage reading (fluency) tasks are measuring language comprehension in addition to fast and accurate word reading. This implicit measurement of language comprehension is one of the reasons why oral reading fluency assessments are valued by educators and widely used in elementary schools (Reschly et al. 2009).

<sup>1</sup> Many researchers consider phonological awareness to be another critically important foundational skill. It was not measured in this study because it is rapidly and fully acquired by normally developing readers in preschool, kindergarten, and first grade.

<sup>2</sup> Language comprehension is measured by tests that require no reading, such as orally administered vocabulary tests and listening comprehension tests.

<sup>3</sup> Contextual facilitation has been extensively studied by researchers. Evidence comes from (1) experimental studies showing, for example, that coherent passages are read more rapidly than text containing the same words in random order; and (2) correlational studies showing that, for example, vocabulary and listening comprehension affect oral reading fluency when word reading skills are controlled statistically.



# Method

## Measures of Oral Reading Fluency and Foundational Skills

The 2018 NAEP ORF study included measures of oral reading fluency, word reading, and phonological decoding. The last two are regarded as foundational skills for fluency.

- *Oral reading fluency* (passage reading) refers to the ability to read connected text such as paragraphs and passages with appropriate rate, accuracy, and expression, which is an indicator of comprehension.
- *Word reading* (also known as *word recognition*) refers to the ability to recognize familiar written words with appropriate speed and accuracy, relying primarily on orthographic memory (memory of how the words are pronounced).
- *Phonological decoding* refers to the ability to pronounce unfamiliar words based on knowledge of spelling-sound correspondences.

As noted previously, many words that students initially pronounce by “sounding them out” eventually become automatically recognized as chunks of letters or whole words in a process that requires minimal conscious effort. This is why it is important to measure both the ability to phonologically decode unfamiliar words and the ability to recognize familiar words.

## Operationalization of the Measures

Each of the above measures was operationalized in terms of two aspects of performance—rate and accuracy—as well as a combination of the two, words correct per minute.

- *Words correct per minute (WCPM)* refers to the total number of words correctly read divided by the amount of time taken to read the passages or word-level lists. This is the WCPM score.
- *Accuracy* refers to the percentage of words that was read accurately. For passages, the total number of attempted words<sup>4</sup> in the passage was the denominator, and for word lists, the total number of words presented to students was the denominator.

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<sup>4</sup> Attempted words included words read correctly or incorrectly as well as those that were skipped.

Passage reading was operationalized in terms of one additional measure—expression—defined below:

- *Expression* refers to appropriate intonation, rhythm, emphasis, and pausing that groups words into phrasal and larger units in ways that express the meaning and structure of the text and enhance understanding and enjoyment in a listener.

## Tasks

The following text materials were given to students to be read aloud:

- *Text passages*, consisting of 152–162 words, providing a measure of fourth-graders' ability to read words and sentences in connected text.
- *Word lists*, consisting of 24 English words arranged in increasing order of complexity, providing a measure of individual students' ability to recognize familiar words.
- *Pseudoword lists*, consisting of 18 made-up but pronounceable words (e.g., *jad*), providing a measure of students' ability to decode words they are unfamiliar with.

The word and pseudoword lists used in this study were developed based on principles derived from clinically valid measures of children's acquisition of word recognition and phonological decoding. Moreover, these word-level tasks along with the text passages were tested in cognitive laboratory studies administered by NAEP ORF team researchers to ensure they were within typical fourth-graders' ability to perform.

## Scoring

In this study, NCES used a new automatic speech analysis/scoring system that calculated accuracy, rate, and WCPM variables to score recordings of students' reading. In preparation for scoring the tasks administered for this study, extensive work was done to ensure that correct word pronunciation would be scored reliably and that speakers of nonstandard varieties of English would not be unfairly penalized. The scoring system considered nonstandard pronunciations acceptable as long as they were consistent with the participants' general speaking pattern.

Scoring of the *Expression* variable, which is based on a detailed rubric,<sup>5</sup> involved thorough training of human scorers and multiple levels of quality checks. To ensure reliability of scoring, supervisors spot-checked scores and provided feedback to scorers. In addition, a second scorer rescored 25 percent of all passage reading recordings to monitor interrater reliability (i.e., agreement between scorers on the scores assigned).

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<sup>5</sup> The scoring rubric for the Expression variable can be found in the companion publication, *The 2018 NAEP Oral Reading Fluency Study* (White et al. 2021) on the NAEP ORF website, <https://nces.ed.gov/nationsreportcard/studies/orf/>.

# Findings

The findings of the 2018 NAEP ORF study are uniquely useful for exploring the question of how NAEP reading performance is related to oral reading fluency, word reading, and phonological decoding skills. As with all NAEP findings, it is important to remember that cause-and-effect relationships cannot be inferred from descriptive and correlational results. NAEP reading performance, oral reading fluency, word reading, and phonological decoding may be affected by a complex mixture of factors beyond the scope of the study.

## New Data on the Reading Skills of Fourth-Graders Performing Below *NAEP Basic*

A major objective of the 2018 ORF study was to provide a nuanced picture of the reading performance of low-performing fourth-grade readers. To accomplish this, students performing below *NAEP Basic* were evenly divided into three groups based on the NAEP reading score distribution. The three groups were labeled below *NAEP Basic Low* (i.e., the bottom one-third of the students performing below *NAEP Basic*), below *NAEP Basic Medium* (i.e., the middle one-third of the students performing below *NAEP Basic*), and below *NAEP Basic High* (i.e., the top one-third of the students performing below *NAEP Basic*). Students' characteristics and oral reading performance were then compared across these subgroups.

## Characteristics of Students in the Below *NAEP Basic* Subgroups

Overall, 36 percent of fourth-grade public school students performed below *NAEP Basic*, but 51 percent of Black fourth-grade students and 46 percent of Hispanic fourth-grade students performed below *NAEP Basic*.<sup>6</sup> We found that Black students were also overrepresented in the lowest below *NAEP Basic* subgroup—i.e., below *NAEP Basic Low*. As shown in table 1, while 26 percent of the White students performing below *NAEP Basic* were at the lowest level of below *NAEP Basic*, 40 percent of the Black fourth-graders and 37 percent of the Hispanic fourth-graders who performed below *NAEP Basic* fell into this subgroup. Because 51 percent of Black students were in the below *NAEP Basic* group, this finding means that 20 percent of Black fourth-grade students (or one out of every five Black fourth-graders) performed at the lowest end of below *NAEP Basic* ( $51 \text{ percent} \times 40 \text{ percent} = 20 \text{ percent}$ ). Similarly, 17 percent (or one out of six) of Hispanic fourth-graders were in the lowest below *NAEP Basic* group, below *NAEP Basic Low* ( $46 \text{ percent} \times 37 \text{ percent} = 17 \text{ percent}$ ).

<sup>6</sup> Here we have reported the observed percentages for the ORF study sample, which are very close to the percentages for the operational NAEP sample. For Black students in the operational NAEP sample, the percentages of students performing below *NAEP Basic* were 50 and 53 for 2017 and 2019, respectively. For Hispanic students in the operational NAEP sample, the percentage of students performing below *NAEP Basic* was 46 in both 2017 and 2019.

Overall, 36 percent of fourth-grade public school students performed below *NAEP Basic*, but 50 percent of National School Lunch Program (NSLP)-eligible fourth-grade students performed below *NAEP Basic*. As shown in table 1, among students who performed below *NAEP Basic*, NSLP-eligible students were nearly equally divided among the three below *NAEP Basic* subgroups. About 35 percent of the NSLP-eligible students performed at the lowest below *NAEP Basic* level.

**Table 1. Percentage of fourth-graders performing below *NAEP Basic*, by below *NAEP Basic* subgroup and selected student characteristics: 2018**

Student characteristics	below <i>NAEP Basic</i> Low	below <i>NAEP Basic</i> Medium	below <i>NAEP Basic</i> High	Total
<b>All students</b>	<b>33</b>	<b>33</b>	<b>33</b>	<b>100</b>
Race/ethnicity				
White	26	35	39	<b>100</b>
Black	40	31	28	<b>100</b>
Hispanic	37	33	30	<b>100</b>
NSLP eligibility				
Eligible	35	34	31	<b>100</b>
Not eligible	27	32	41	<b>100</b>

NOTE: Rows may not sum to totals because of rounding. For National School Lunch Program (NSLP) eligibility, about 2 percent of the students lacked valid eligibility information. These students were also excluded because of small sample size. Learn more about the NAEP achievement levels [here](#).

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP) 2018 Oral Reading Fluency study.

# Oral Reading Fluency and Foundational Skills for the Below *NAEP Basic* Subgroups

As mentioned earlier, what this study adds to the previous studies of NAEP reading is a closer examination of the difficulties faced by fourth-grade students performing below *NAEP Basic* on the NAEP reading assessment. Because the 2018 NAEP ORF study participants had completed the NAEP reading assessment, it was possible to examine the relationship between reading achievement and each of the measures.

## 1: Oral reading fluency (passage reading)

### ORF passage reading WCPM

As shown in figure 1, passage reading words correct per minute (WCPM) decreased significantly in moving down from the *NAEP Advanced* group to the *NAEP Proficient* group and *NAEP Basic* group.<sup>7</sup> Also, and importantly, passage reading WCPM decreased significantly within the below *NAEP Basic* group. In moving down the subgroups, the average for students in the below *NAEP Basic High* subgroup was 108 WCPM, the average for students in the below *NAEP Basic Medium* subgroup was 95 WCPM, and the average for students in the below *NAEP Basic Low* subgroup was 71.

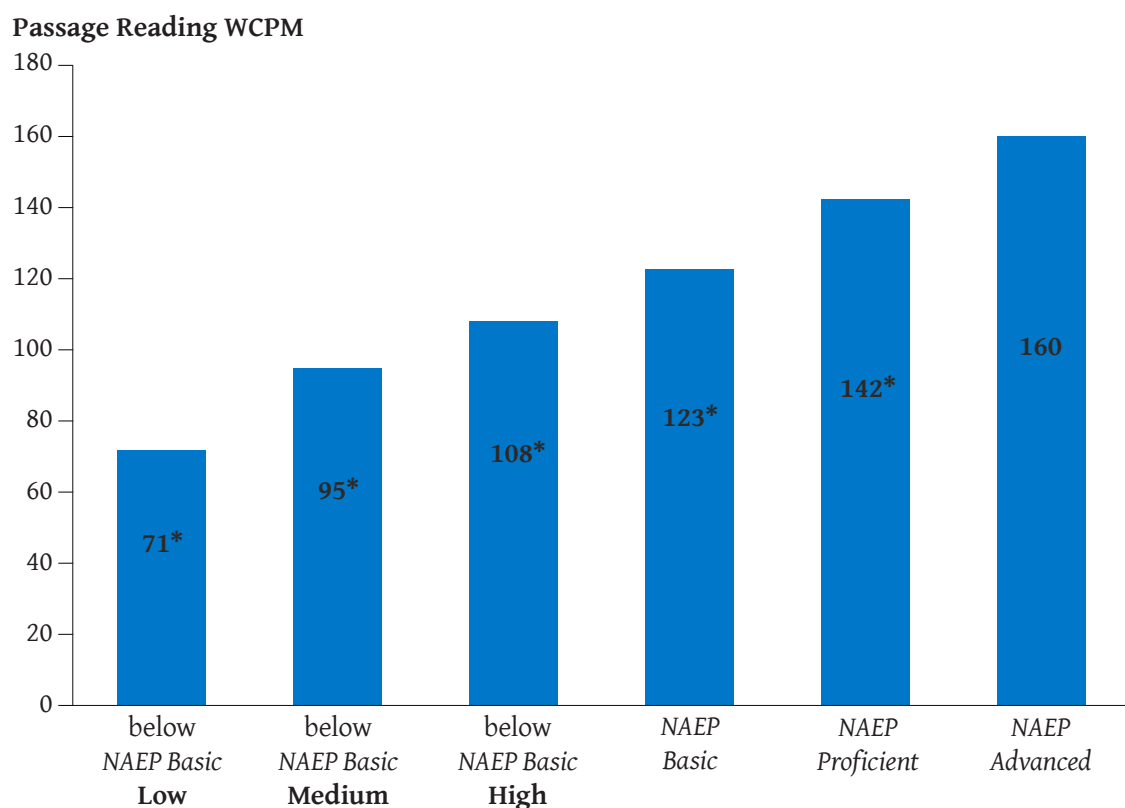
It is noteworthy that the passage reading WCPM difference between the lowest below *NAEP Basic* subgroup (below *NAEP Basic Low*) and the highest below *NAEP Basic* subgroup (below *NAEP Basic High*) is as large at 38 WCPM<sup>8</sup> as the difference between the *NAEP Basic* and *NAEP Advanced* groups (37 WCPM).

The average passage reading WCPM across all levels was 120. To help put all of these numbers in perspective, based on the 2003 National Assessment of Adult Literacy (NAAL) (Baer et al. 2009), adult readers performing at the Intermediate and Proficient levels read orally at an average of 166 and 178 words correctly per minute (WCPM), respectively. This indicates that there is room for improvement even for fourth-grade students performing at the *NAEP Proficient* level (142 WCPM) and considerable room for improvement for fourth-grade students performing at the *NAEP Basic* level (123 WCPM).

<sup>7</sup> All comparisons were conducted with an alpha level of 0.05, with multiple pairwise comparison adjustments applied when needed using the False Discovery Rate (FDR) procedure.

<sup>8</sup> Unrounded numbers were used for calculating the differences between the estimates.

**Figure 1. Average passage reading WCPM, by NAEP reading achievement level and below NAEP Basic subgroup: 2018**



**NAEP achievement level and below NAEP Basic subgroup**

\* Statistically significant difference compared to the next higher NAEP reading achievement level category,  $p < .05$ . All comparisons were conducted with an alpha level of 0.05, with multiple pairwise comparison adjustments applied using the False Discovery Rate (FDR) procedure.

NOTE: WCPM is an abbreviation for words correct per minute. The positions of the data points in the graphics are based on the unrounded numbers.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP) 2018 Oral Reading Fluency study.

## ORF passage reading accuracy

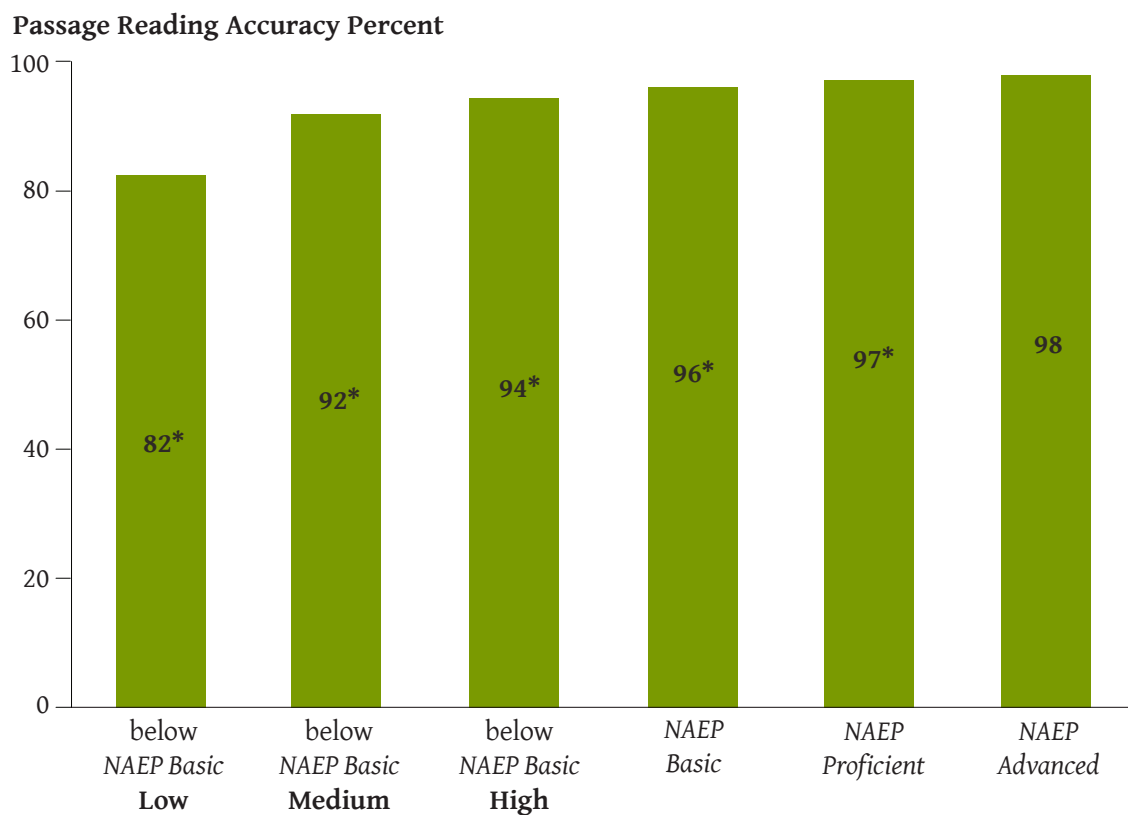
Perhaps the most noticeable difference among students performing below *NAEP Basic* is in passage reading accuracy. As shown in figure 2, the passage reading accuracy of students performing below *NAEP Basic Low* was 82 percent, about 9 percentage points<sup>9</sup> and 12 percentage points lower than the below *NAEP Basic Medium* and *High* subgroups, respectively.

Eighty-two percent accuracy in practical terms means that students misread 1 out of every 6 words. Students who frequently misread words are likely to have difficulty understanding the text because the words are apt to be content words that are important for comprehension, not

<sup>9</sup> Unrounded numbers were used for calculating the differences between the estimates.

function words (e.g., the, and, on). Also, at 92 percent correct, the below *NAEP Basic Medium* group was missing 1 out of every 11 words, which is 1 word in nearly every sentence. The average percentage of words read correctly across all levels was 94 percent.

**Figure 2. Average passage reading accuracy, by NAEP reading achievement level and below NAEP Basic subgroup: 2018**



**NAEP achievement level and below NAEP Basic subgroup**

\* Statistically significant difference compared to the next higher NAEP reading achievement level category,  $p < .05$ . All comparisons were conducted with an alpha level of 0.05, with multiple pairwise comparison adjustments applied using the False Discovery Rate (FDR) procedure.

NOTE: Accuracy refers to the percentage of words that was read accurately. The positions of the data points in the graphics are based on the unrounded numbers.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP) 2018 Oral Reading Fluency study.

## ORF passage reading expression

Passage reading expression scores (figure 3) showed the same pattern as the passage reading WCPM. Performance declined steadily from *NAEP Advanced* to *NAEP Proficient* to *NAEP Basic* and continued to decline from below *NAEP Basic High* to below *NAEP Basic Medium* and below *NAEP Basic Low*. The average passage reading expression score for all fourth-grade students was at Level 4 on a scale of 0–5. That indicated that their oral reading expressed sentence structure and meaning, and that more than three-quarters of the words in the passage were read with appropriate expression.

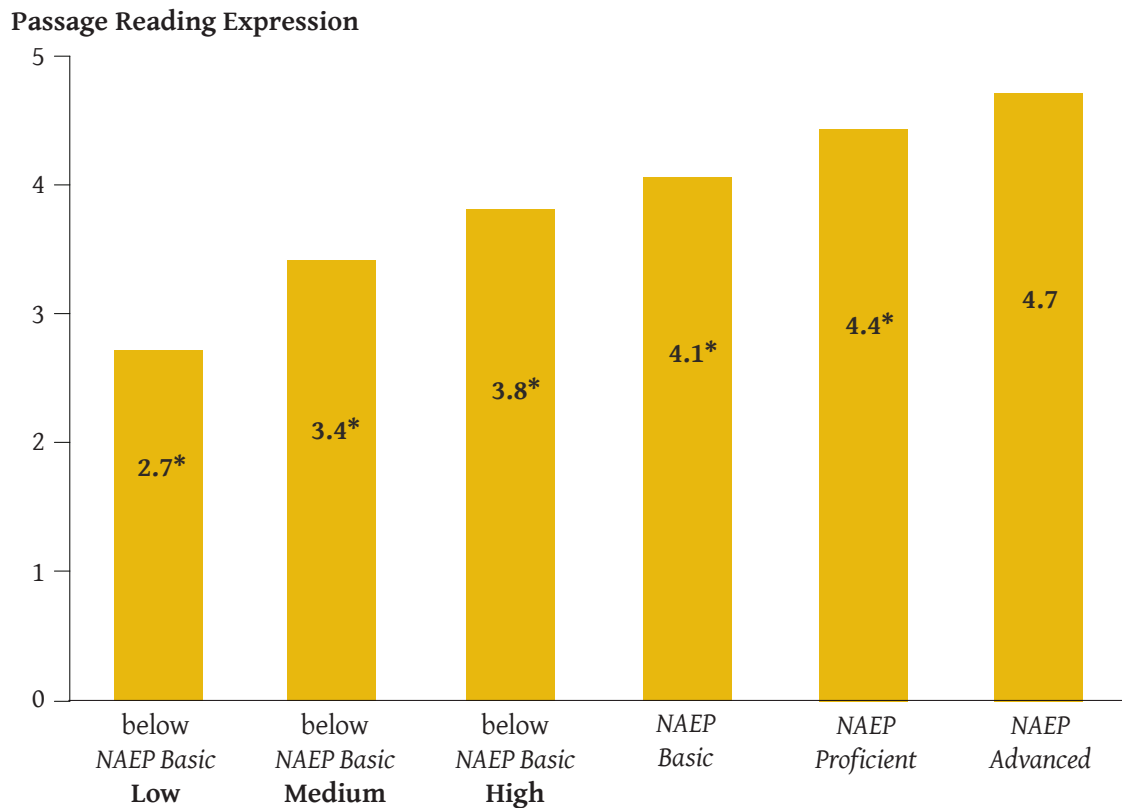
For all readers performing below *NAEP Basic*, the average score was in the Level 3 range. That meant that their oral reading expressed the meaning of words, phrases, clauses, and a few sentences, and that they read more than half of the words in the passage with appropriate expression. For the lowest below *NAEP Basic* subgroup, below *NAEP Basic Low*, the average expression score fell below Level 3. That indicated that these students tended to focus on local word groupings, which means that they often paused in the middle of a phrase. For example, the sentence “Hawaii is a warm place, but parts of it are cold” would be read as [Hawaii] [is a] [warm place], [but parts of] [it are] [cold].

## Summary of findings on ORF passage reading and NAEP reading performance

Overall, across all of the passage reading data described above (WCPM, accuracy, and expression), there is a strong and consistent relationship between the NAEP reading assessment performance and passage reading. The above figures also show that there is noticeable variation among the below *NAEP Basic* subgroups for every passage reading measure.



**Figure 3. Average passage reading expression, by NAEP reading achievement level and below NAEP Basic subgroup: 2018**



**NAEP achievement level and below NAEP Basic subgroup**

\* Statistically significant difference compared to the next higher NAEP reading achievement level category,  $p < .05$ . All comparisons were conducted with an alpha level of 0.05, with multiple pairwise comparison adjustments applied using the False Discovery Rate (FDR) procedure.

NOTE: The positions of the data points in the graphics are based on the unrounded numbers. Expression score 0 = Insufficient passage reading sample for accurate rating; 1 = Reading is word by word; less than a quarter of the words are read with appropriate expression; 2 = Reading focuses on local grouping; less than half of the words are read with appropriate expression; 3 = Reading expresses the meaning of words, phrases, clauses, and a few sentences; more than half of the words are read with appropriate expression; 4 = Reading expresses sentence structure and meaning; more than three-quarters of the words are read with appropriate expression; 5 = Passage is read as if for a listener and is expressive throughout. For detailed passage reading expression score description, see *The 2018 NAEP Oral Reading Fluency Study* (White et al. 2021) on the NAEP ORF website, <https://nces.ed.gov/nationsreportcard/studies/orf/>.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP) 2018 Oral Reading Fluency study.

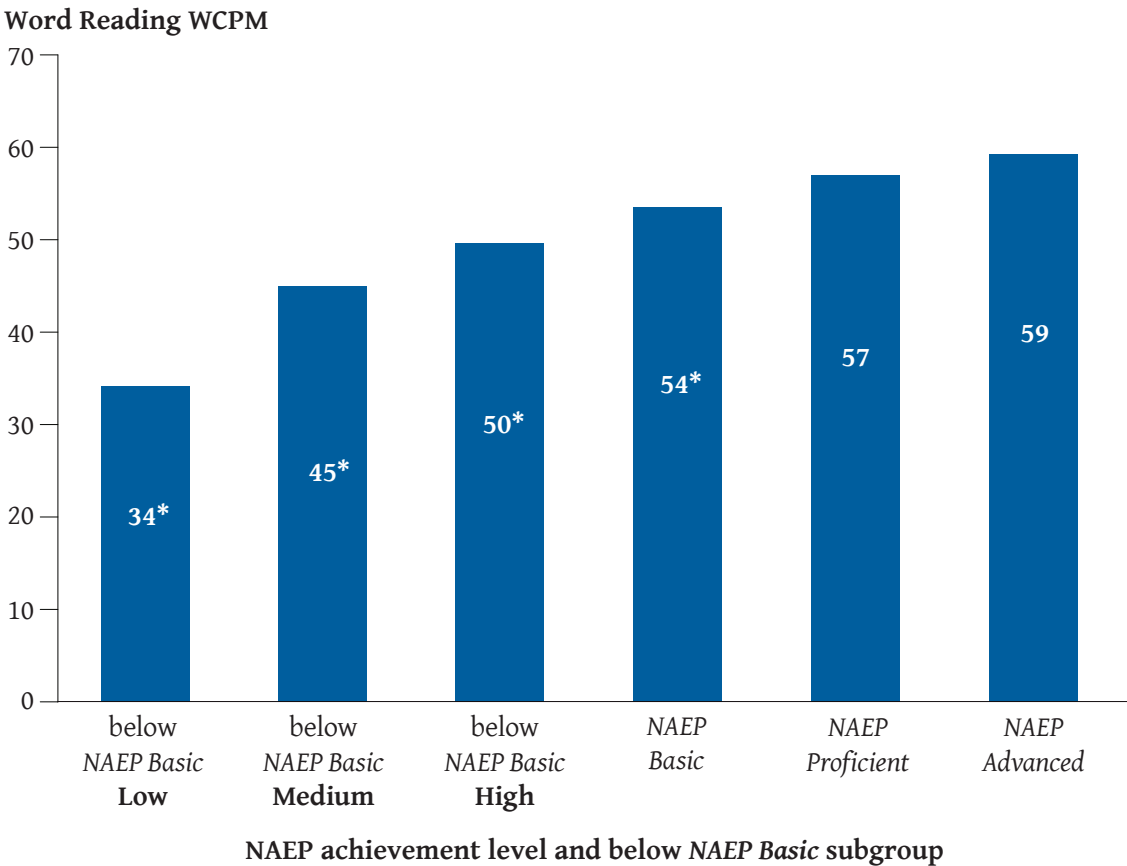
## 2: Foundational skills (word and pseudoword list reading)

### Word reading WCPM

By examining word-level reading apart from a passage, we could better understand the word-level processes that underlie fluency and passage comprehension. What we learned is that the foundational skills—word reading and phonological decoding—also varied widely within the below *NAEP Basic* subgroups (figures 4 and 5).

In word list reading, students read high-frequency words that have known meanings to most students in fourth grade. Performance on this task was regarded an indicator of accumulating knowledge of printed words and an increasing ability to read words rapidly and automatically without effortful decoding. As shown in figure 4, word reading declined across the *NAEP Basic* level through all the below *NAEP Basic* subgroups. The sharpest decline was between the below *NAEP Basic Medium* and below *NAEP Basic Low* subgroups.

**Figure 4. Average word reading WCPM, by NAEP reading achievement level and below NAEP Basic subgroup: 2018**



\* Statistically significant difference compared to the next higher NAEP reading achievement level category,  $p < .05$ . All comparisons were conducted with an alpha level of 0.05, with multiple pairwise comparison adjustments applied using the False Discovery Rate (FDR) procedure.

NOTE: WCPM is an abbreviation for words correct per minute. The positions of the data points in the graphics are based on the unrounded numbers.

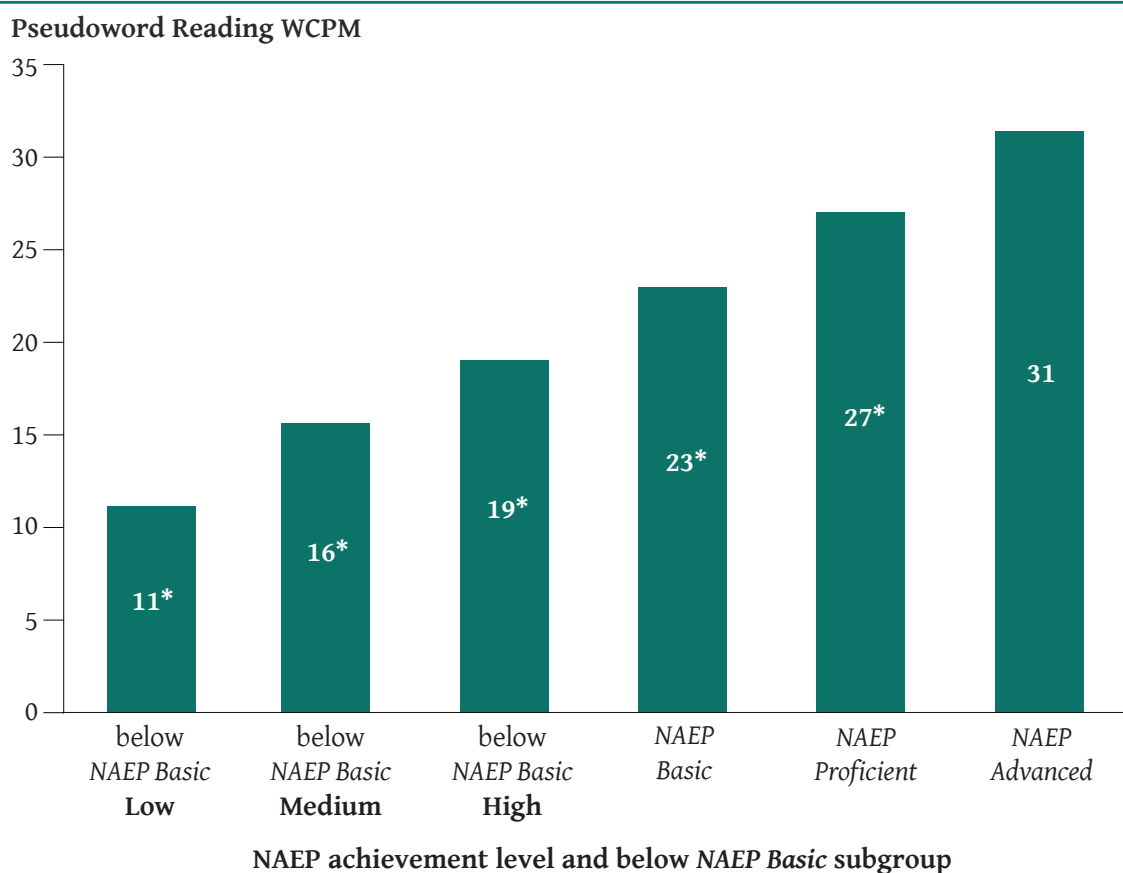
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP) 2018 Oral Reading Fluency study.

## Pseudoword reading WCPM

In pseudoword list reading (i.e., reading lists of made-up, but pronounceable words), students read made-up words that required them to use phonological decoding skills, the skills that enable a reader to pronounce sequences of letters based on knowledge of spelling-sound correspondences and orthographic patterns.

Like word reading skills, pseudoword reading skills declined across the NAEP reading achievement levels, including the below *NAEP Basic* subgroups (figure 5). The decline in mean performance was especially sharp between the below *NAEP Basic Medium* and below *NAEP Basic Low* subgroups. Moreover, there was a wide range within the below *NAEP Basic* subgroups. Fourth-graders in the below *NAEP Basic High* group read almost twice as many words correctly per minute (19) as those in the below *NAEP Basic Low* group (11), as shown in figure 5. The average number of pseudowords read correctly per minute was 22 for all fourth-grade students.

**Figure 5. Average pseudoword reading WCPM, by NAEP reading achievement level and below NAEP Basic subgroup: 2018**



\* Statistically significant difference compared to the next higher NAEP reading achievement level category,  $p < .05$ . All comparisons were conducted with an alpha level of 0.05, with multiple pairwise comparison adjustments applied using the False Discovery Rate (FDR) procedure.

NOTE: Pseudoword is a made-up but pronounceable word. WCPM is an abbreviation for words correct per minute. The positions of the data points in the graphics are based on the unrounded numbers.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP) 2018 Oral Reading Fluency study.

# Conclusion and Implications

## Conclusion

The 2018 ORF study reveals that for an estimated 1.27 million<sup>10</sup> fourth-grade public school students performing below *NAEP Basic*, and particularly for an estimated 0.42 million<sup>11</sup> fourth-grade students in the below *NAEP Basic Low* subgroup, fluent reading of connected text—sufficiently fast and accurate reading of sentences and passages—can be a major challenge. The study also shows that word reading and phonological decoding skills are underdeveloped in students performing below *NAEP Basic*, particularly for students in the below *NAEP Basic Low* subgroup.

Students in the below *NAEP Basic Low* subgroup not only have difficulty reading the words in the text quickly and accurately but also show a lack of appropriate expression in reading out loud, which is an indicator of poor comprehension. This makes it difficult for them to engage in the cognitive processes described in the 2017 NAEP reading framework.

## Implications

### The NAEP reading framework and future assessments

First, the current reading framework does not describe any specific reading behaviors that characterize fourth-grade students performing below *NAEP Basic*. It states only that “These students are not necessarily nonreaders; many can complete some tasks on the assessment but are not able to attain the minimum score required for *Basic*” (National Assessment Governing Board 2017, p. 44). Based on the findings of this study, the new framework should incorporate a description of readers performing below *NAEP Basic*. It should acknowledge the fact that, compared to students performing at the *NAEP Basic* level or higher, students performing below *NAEP Basic* are more likely to have underdeveloped fluency, word reading, and phonological decoding skills. There should also be additional testing of fourth-grade students’ oral reading fluency and foundational skills with a subsample of the students who take the main NAEP reading assessment. Such testing would provide much-needed information about the students who are performing below *NAEP Basic*.

<sup>10</sup> This number refers to 36 percent of 3.54 million (the number of public school, fourth-graders represented in the 2018 ORF study sample) = 1.27 million.

<sup>11</sup> This number refers to a third of 1.27 million fourth-grade students who performed below *NAEP Basic*. Recall that students performing below *NAEP Basic* were evenly divided into three groups based on the NAEP reading score distribution.

Second, the framework (p. 4) notes that text comprehension is influenced by phonics knowledge and fluency; and, importantly, it recognizes that “without these foundational skills, comprehension will not occur.” It goes on to state a goal or aspiration for fourth-grade students that is universally accepted by reading experts and reading educators: “By grade 4, when the NAEP Reading Assessment is first administered, students should have a well-developed understanding of how sounds are represented alphabetically and should have had sufficient practice in reading to achieve fluency with different kinds of texts” (p. 4). But what if this goal has not been met?

In the future, the framework should acknowledge that: “Although the majority of fourth-grade students do not have problems with fluency, word reading, and phonological decoding, these skills are not adequately developed for a significant percentage of readers performing below *NAEP Basic*,” as shown by the findings of the 2018 NAEP ORF report (White et al. 2021).

## Policy and research

First, the problems of fourth-grade students performing below *NAEP Basic* highlighted by this report call for a solution-oriented discussion among education policymakers. The discussion may begin with recognition of the large income-based gaps in prereading skills that exist at kindergarten entry (Quinn 2015; Reardon and Portilla 2016) and proceed to a fresh and intensive look at programs of instruction in preschools and the early elementary grades, especially programs that enroll large numbers of Black and Hispanic children. Second, research is needed to determine the extent to which elementary schools teach accurate and efficient word reading skills, in systematic ways, as supported by existing research (e.g., Castles, Rastle, and Nation 2018). This is a topic that is being vigorously debated in policy circles at the present time.

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