

## Reading Efficiency *The Gateway to Comprehension & Motivation*

**Pupils**  
190,649 students

**Schools**  
1,732

**School Districts**  
730

**Study Inclusion Requirements**

- Students in Grade 2 through 12.
- Students with at least two valid 2015-2016 *InSight* assessments, separated by an interval of at least 90 days.

**Students Excluded**

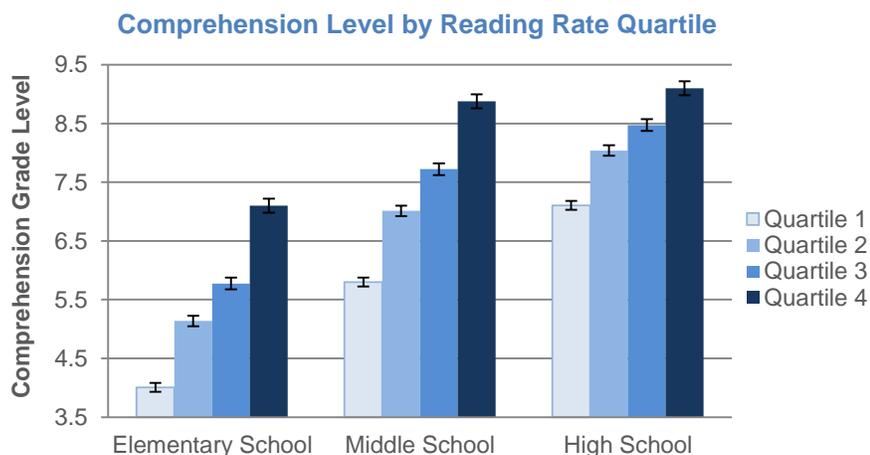
- None. All demographic groups are included.

When reading is slow and arduous, comprehension suffers. Slow reading rates mean the process of taking in text has not yet become dynamic or automatic, but instead is labored and burdensome. Students who read slowly are probably spending too much of their reading time laboriously decoding words and deciphering word meanings. These efforts can make it difficult to focus on what the text is conveying. As in the old adage, it can be a matter of “not seeing the forest for the trees.”

When students need to devote most of their attention to the *process* of reading, they are likely to miss out on the motivating experience of expanding their knowledge, or being entertained and inspired by what they are reading. Students are also more likely to have difficulty sustaining the level of attention that close reading requires and might become frustrated. In these circumstances, many students will decide that they do not like to read and will come up with various excuses to avoid reading (Guthrie, 2015).

### Reading Efficiency and Comprehension

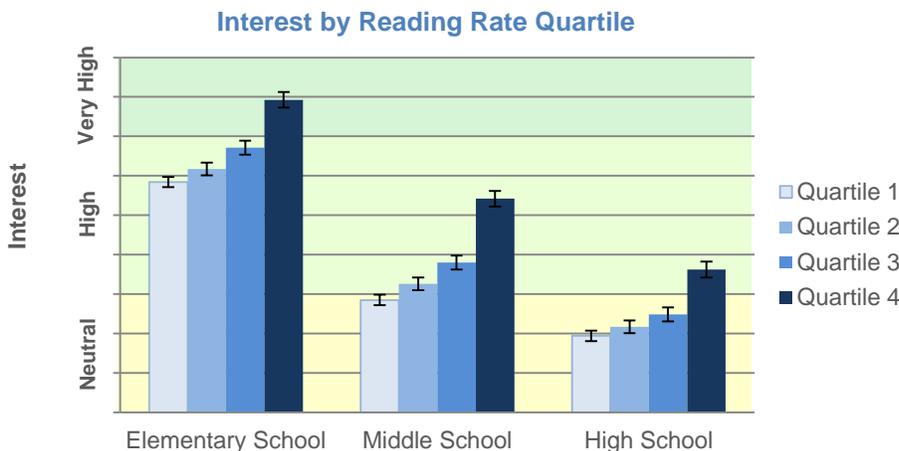
To document the relationship between reading efficiency and comprehension, data were evaluated from a national sample of students who had engaged in *Reading Plus* practice during the 2015-16 school year. Students were divided into four groups according to their reading rate quartiles. The quartiles for each grade level were defined using data reported in a recent national study of U.S. students (Spichtig et al., 2016). Students’ reading comprehension levels were measured by *InSight*, a web-based silent reading proficiency assessment (See [InSight Technical Brief](#) for more information). An analysis of these data clearly showed that students who read more efficiently also had higher comprehension levels (Figure 1).



**Figure 1.** Mean comprehension levels of students in each of four reading rate quartiles, in grades 2-5 (elementary school), 6-8 (middle school), and 9-12 (high school). Comprehension levels varied significantly across quartiles within each grade group ( $p < .001$ ). Higher quartile groups always achieved significantly higher comprehension levels.

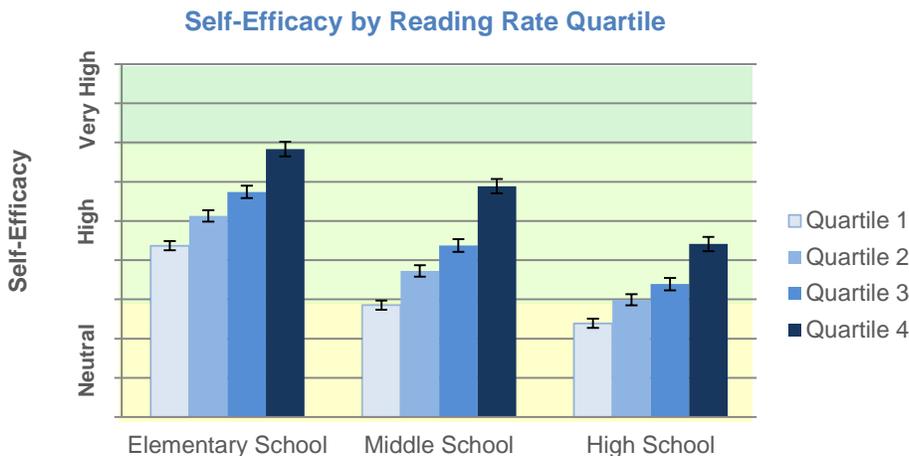
### Reading Efficiency and Motivation

Figure 2 shows students' self-reported interest in reading as measured by the *InSight* assessment, with students again divided into the four reading rate quartiles. In addition to the tendency of younger students to report more enthusiasm for reading than older students, students who read more efficiently reported more interest in reading than their peers who were less efficient readers. By high school, students in the lower reading rate quartiles reported, on average, a neutral level of interest in reading. This downward trend in self-reported interest is concerning as it suggests that many high school students may in fact have lost all interest in reading.



**Figure 2.** Self-reported interest levels of students in each of four reading rate quartiles, in grades 2-5 (elementary school), 6-8 (middle school), and 9-12 (high school). Interest levels varied significantly across quartiles within each grade group ( $p < .001$ ). Higher quartile groups always reported significantly higher levels of interest.

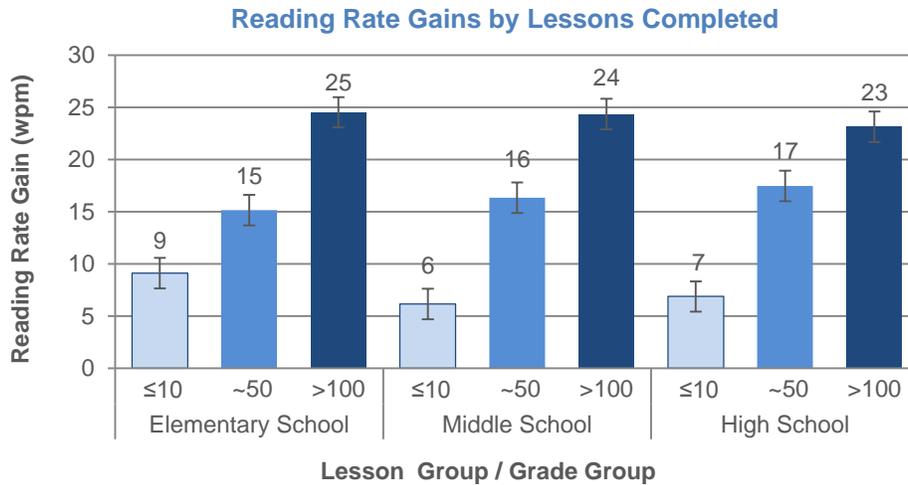
The same pattern as above emerged for students' sense of self-efficacy in reading (i.e. their self-perceived reading competence). More efficient readers reported higher levels of self-efficacy. A lower sense of self-efficacy among less efficient readers is concerning as it could have a detrimental effect on their willingness to challenge themselves or persevere.



**Figure 3.** Self-reported self-efficacy levels of students in each of four reading rate quartiles, in grades 2-5 (elementary school), 6-8 (middle school), and 9-12 (high school). Self-efficacy levels varied significantly across quartiles within each grade group ( $p < .001$ ). Higher quartile groups always reported significantly higher levels of self-efficacy.

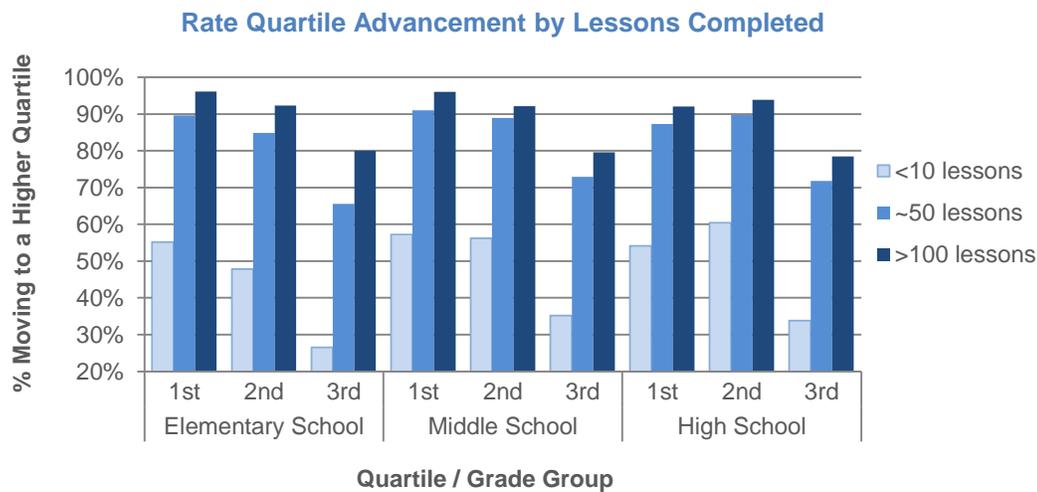
### Reading Plus Increases Students' Reading Efficiency

Across all grade groups, students who completed more *Reading Plus* lessons achieved significantly more comprehension-based silent reading rate growth as measured by the *InSight* assessment. Students completing at least 100 reading lessons (~30 hours) achieved the most impressive reading rate gains (~2x the average yearly growth). Those who completed 40 to 60 lessons also achieved significant gains in comparison to students who completed 10 or fewer lessons.



**Figure 4.** Increases in comprehension-based silent reading rates in students with differing levels of *Reading Plus* use, in grades 2-5 (elementary school), 6-8 (middle school), and 9-12 (high school). Within each grade group, average reading rate increases varied significantly with differing levels of use ( $p < .001$ ). Groups of students with higher levels of *Reading Plus* use always achieved larger reading rate gains.

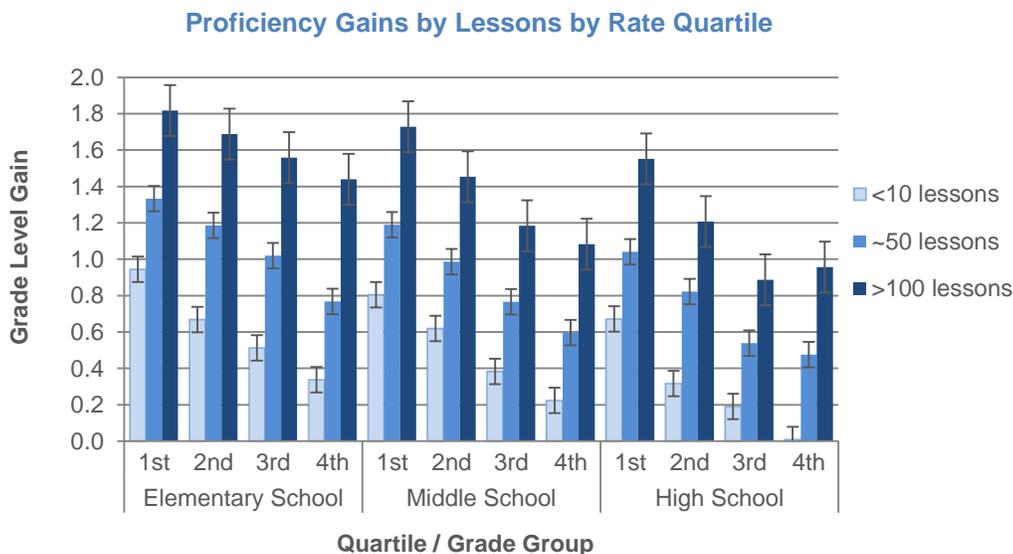
The reading rate increases shown above also advanced students into higher reading rate quartiles. The students most likely to advance were those who completed more lessons (Figure 5).



**Figure 5.** Percentage of students in each reading rate quartile advancing to a higher quartile, in grades 2-5 (elementary school), 6-8 (middle school), and 9-12 (high school). Within each grade group and reading rate quartile group, students who completed more than 100 lessons were significantly more likely to advance to a higher reading rate quartile ( $\chi^2$  tests,  $p < .001$ ).

### Proficiency Gains

Reading rate gains together with improved reading comprehension contribute to significant reading proficiency growth. Figure 6 shows proficiency gains associated with *Reading Plus* use. The largest proficiency growth was measured in students who completed more than 100 lessons. Furthermore, the largest gains were achieved by students in the lower reading rate quartiles. This is encouraging evidence suggesting that less proficient students may in fact be able to “close the gap” and achieve grade level expectations.



**Figure 6.** Grade level reading proficiency gains among students with different levels of program use in each reading rate quartile, in grades 2-5 (elementary schools), 6-8 (middle school), and 9-12 (high school). Within each grade and quartile group, significantly larger proficiency gains were achieved by students who completed more reading lessons ( $p < .001$ ).

### References

Guthrie, J.T. (2015). Growth of Motivations for Cognitive Processes of Reading. In: P. D. Pearson & E. H. Hiebert (Eds.), *Research-Based Practices for Teaching Common Core Literacy*, pp. 107-122.

Spichtig, A.N., Hiebert, E.H., Vorstius, C., Pascoe, J.P., Pearson, P.D., & Radach, R. (2016). The decline of comprehension-based silent reading efficiency in the United States: A comparison of current data with performance in 1960. *Reading Research Quarterly*, 51(2), 239–259