# The Forgotten Reading Proficiency: Stamina in Silent Reading

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The new assessments developed by the Smarter Balanced Assessment Consortium and the Partnership for Assessment of Readiness for College and Careers (PARCC) to align with the Common Core State Standards (CCSS; NGA Center for Best Practices & CCSSO, 2010a) require all but the most severely disabled students to read and respond to texts in a digital context. Beginning in third grade, students are expected to read the texts silently and for extensive periods of time (see Table 1). And, unlike their experiences with typical classroom reading assignments, students will have no access to teachers to present a first-read or to help them by scaffolding a section of text, monitoring their reading, or advising them when it is time to start answering questions or writing responses.

Of course, extended silent reading is not a requirement limited to the new CCSS-related assessments. For the tasks of college, citizenry, and the workplace, we most often must read silently on our own for sustained periods of time. The choice made by the design teams of the two assessment consortia to have students, even as early as grade 3, do the same is intended to ensure that our students are prepared to accomplish these college and career tasks with proficiency.

This said, we need to acknowledge that the demands of the new assessments *will* pose a challenge for many students. The reason for this challenge is not—as pundits and observers of education frequently suggest—that American students *cannot* read. Indeed, most American students can read. What many cannot do is independently maintain reading focus over long

periods of time. The proficiency they lack is stamina—the ability to sustain mental effort without the scaffolds or adult supports.

In this chapter, I provide an overview for each of the topics addressed in the three sections of this book: (a) stamina is a major challenge for many American students, (b) silent reading proficiency depends on extensive reading opportunities, and (c) appropriate instructional applications can increase students' silent reading proficiency. First, however, I identify and define the constructs that are the foci of all the work in this book—silent reading, comprehension-based silent reading rate, and the role of oral reading (including oral reading of instructional texts by teachers).

## Definitions and Distinctions

Oral reading assessments are a critical method for gaining insights into the black box of mental processing. The rate at which students read orally has been shown to be a strong predictor of their comprehension. This is understandable in that oral reading rate is an indicator of automaticity. However, during the No Child Left Behind (NCLB) era, reading assessments often stopped there, ignoring a crucial fact: Ultimately, it is the *silent* reading performance of students that is critical to their comprehension. College students or newly minted college graduates who are beginning their first jobs as bookkeepers or engineers are not asked to read articles or manuals orally.

Further, it is not the rate at which we read articles or manuals that matters. It is how well we understand and use the content of what we read—comprehension and memory of text. But the rate at which this silent reading occurs can also be important. If readers read too slowly, it can create problems for both comprehension and memory. Consequently, Hiebert, Wilson, and Trainin (2010) have introduced the construct of comprehension-based silent reading rate (CSR).

As this term implies, the emphasis of CSR is on establishing the rate at which students read silently with comprehension.

## Stamina: A Challenge for Many American Students

Continuing a persistent trend, the reading scores for the most recent National Assessment of Educational Progress (NAEP) show that approximately one-third of our fourth graders score below the basic level and another one-third at the basic level (National Center for Education Statistics, 2014). Often, this pattern is interpreted to mean that our students can't read and the "solution" provided is to immerse them in more word-recognition instruction. Often the intervention programs chosen for use with struggling readers emphasize English grapheme-phoneme relationships, including with middle- and high-school students. But is the problem that students can't recognize words?

In the early 1990s, a group of scholars asked precisely this question. In response, NAEP commissioned a special study in which a representative sample of fourth graders read a portion of a text that had been part of the silent reading comprehension assessment (Pinnell, Pikulski, Wixson, Campbell, Gough, & Beatty, 1995). Students' accuracy, fluency (i.e., prosody), and rate were all assessed. A decade later, a follow-up study was conducted to determine whether the earlier pattern held constant (Daane, Campbell, Grigg, Goodman, Oranje, & Goldstein ,2005).

The two samples in these special NAEP studies did not read the same texts, but the texts are similar in their levels of complexity (around the end of third-grade level). The two studies also were not precisely the same in terms of procedures (e.g., students in the 2002 sample read beyond one minute, unlike students in the 1992 sample). But studies were sufficiently similar to conclude that, within a representative sample of American fourth graders, the percentages of students who are reading with insufficient accuracy is relatively low. Percentages of students

performing at or below 94% accuracy were the same at both assessment periods, as is evident in

the information presented in Table 2. In both studies, accuracy levels predicted students' score

on the comprehension portion of the assessment (a task that had preceded the oral reading task)

with students who read orally with high levels of accuracy scoring higher in comprehension.

How much does students' word-recognition accuracy fall when the texts they read

become more complex? The research literature offers only limited answers to this question, but

information from another source—the DIBELS assessments—provides an answer to this

question. As shown in Table 3, end of the fourth-grade benchmark assessment passages on the

DIBELS have approximately 2 more rare words per 100 than the NAEP passages. Unlike

passages in the two NAEP oral fluency studies that fell into the Grade 2-3 band on the staircase

of text complexity (NGA Center for Best Practice & CCSSO, 2010b, 2012), the DIBELS

passages fall within the Grade 4-5 band).

The DIBELS norms are based on approximately 167,000 K-12 students that represent

every census region in the U.S. (Dewey, Kaminski, & Good, 2013)—approximately 24,000

students per grade level. Table 4 provides accuracy, rate, and comprehension data for fourth

graders. These data confirm the NAEP data. Even students at the 10th percentile display

reasonable accuracy—95%. Their rate, however, is approximately 60% of the oral reading rate of

typical grade-level readers. DIBELS developers have added a retelling measure to the

assessment. Differing considerably from the comprehension measures typical of the NAEP (and

of the new CCSS-aligned assessments), this measure indicates that students' challenges lie not in

their ability to recognize individual words but in their ability to think about text.

A third source of information about American students' word recognition capabilities is

found in a line of studies that examined students' reading rates and comprehension scores in

silent reading contexts (Hiebert et al., 2010; Hiebert, Trainin, & Wilson, 2012). The context for these studies is similar and replicates that of many norm-referenced reading assessments. Students read a set of short texts (each 200-250 words) about the same topic. After reading a passage, students respond to multiple-choice comprehension questions. In all of these studies, the focus is on students' reading rates with comprehension—the comprehension-based silent reading rate (CSR) I mentioned earlier.

In the first study (Hiebert et al., 2010), fourth graders read comparable texts in two different contexts: (a) digital and (b) paper-and-pencil. For reading comprehension, no significant differences emerged across the two contexts. But for silent reading rate, differences did show up, with students reading significantly faster in the digital rather than the paper-and-pencil context.

A subsequent analysis of study data considered differences in reading rate and comprehension across quartile groups. Rates for different comprehension quartiles differed as a function of performance level and part of text. Students in the two lower quartiles started out at a reasonable rate but their rates changed dramatically over the sections of the assessment (but not with increases in comprehension). The lowest quartile readers increased their speed after one passage but with lower levels of comprehension. The second lowest quartile followed a similar pattern (i.e., increase in rate, decrease in comprehension) as the lowest quartile but only after the first two sections of the assessment. The students in the top two quartiles had a stable rate and comprehension performance that changed very little across sections of the text.

In a subsequent study (Hiebert et al., 2012), fourth graders' performances were compared on narrative and informational texts. CSR was computed for the reading of each of four 250-word passageand correct responses to four comprehension questions. In this study, CSR was

computed for the reading of a text in 250-word passages. The amount of time that students spent

reading a text was also a criterion in establishing CSR. Students were not deemed to have

attained CSR if they spent less than 5 seconds on a text. For both the narrative and informational

texts, percentages of students who attained the CSR level dropped steadily from the first text to

the third. Whereas 85% of the students comprehended the first text, 66% (narrative) and 56%

(informational) attained the CSR criterion on the last texts.

An examination of the data also identified six stamina patterns among students: (a)

nonstarters (i.e., students who did not attain the CSR criterion for any passage); (b) quitters after

passage 2 (students who attained the CSR criterion on the two passages but engaged in rapid

reading with insufficient comprehension on the two subsequent passages); (c) quitters after

passage 3 (students who attained CSR criterion on three passages but engaged in "fake reading"

on the final passage); (d) monitors (students who engaged in fake reading after failing to

comprehend at least one text); (e) persisters (students who, at best, attained a minimal level of

comprehension on two texts but continued to engage with the same rate on other texts); and (f)

comprehenders (students who attained the criterion on all passages). The number of nonstarters

was low (3%), but approximately 27% of the students fell into the quitters group and another 6%

were classified as monitors. Of the remaining students, 56% were comprehenders and 8% were

persisters.

This review of research leads to the conclusion that the vast majority of American

students in an age cohort *can* recognize words—the focus of most reading interventions.

Although lack of automaticity in word recognition appears to be an issue for the students in the

bottom 5 or even 7 percent of a cohort, most students can recognize the core vocabulary.

However, when they are asked to sustain their attention in silent reading, these students appear

not to have the stamina that is required to interact with texts in a meaningful manner.

### Silent Reading: Proficiency Depends on Reading Opportunities

For any given activity, whether it is highly demanding (e.g., performing brain surgery or

playing a Rachmaninoff piano concerto) or prosaic (e.g., riding a bike or using a computer

keyboard), it is absurd to think that we can become proficient without participating extensively

in the activity. When it comes to teaching students to read, however, attention typically focuses

on the nature of instruction, rather than on the quality or quantity of deliberate practice time for

students. For example, in the NCLB era, the five pillars of proficient reading identified by the

National Reading Panel (NRP) (NICHD, 2000)—phonemic awareness, phonics, fluency,

vocabulary, and comprehension—became the focus of instruction. In the era of the CCSS,

ensuring that students are engaging in close-reading strategies has taken center stage in

discussions of pedagogy and implementation. Instruction about critical reading strategies and

content is important, but instruction does not necessarily ensure that students have the

opportunities they need to become proficient independent readers. For this to happen, students

also need to have an abundance of occasions that allow them to take responsibility for getting

meaning from a text or, as Guthrie, Schafer and Huang (2001) have described them,

opportunities to read. It is especially the case that students require opportunities to read *silently*

in classrooms.

The research on the nature and effects of students' opportunities to read in classrooms

can be described as, at best, sparse. A handful of studies from the late 1970s showed that time

spent reading predicted students' reading achievement, which, during that era was studied as a

function of silent reading (Fisher et al., 1980; Frederick, Easton, Muirhead, & Vanderwicken, 1979; Leindhart, Zigmond, & Cooley,1981).

More recently, an observation study of over 1,000 first and second graders and their teachers (Foorman, Schatschneider, Eakin, Fletcher, Moats, & Francis, 2006) showed that, of 20 time allocation variables, only time allocated for text reading significantly explained gains on any post-test measures (including word reading, decoding, and passage comprehension). No other time factors, including time spent on word recognition, alphabetic knowledge, or phonemic awareness instruction, independently contributed to reading growth. In another study, Kuhn and Schwanenflugel (2009) reported that the distinguishing feature in a large-scale-up of an intervention was not whether classes received the intervention but the amount of time that students spent reading. Students in the seven most successful classes read seven minutes more each day than did than students in the seven least successful classrooms, regardless of whether classrooms were part of the intervention.

Observational studies over the decades have shown, however, that the percentage of school time students spend on text reading in many of our classrooms is limited. Leinhardt et al. (1981) found that the amount of time that students spent reading was approximately 15% of the time allocated to reading instruction. Taylor, Frye, and Maruyama (1990) found that students spent an average of 15.8 minutes a day in either assigned reading or SSR.

All evidence points to the fact that, although the amount of time devoted to reading instruction increased during and following the NCLB era (Dorph, Lee, Lepori, Schneider, & Venkatesan ,2007), the amount of time that students are reading has not increased substantially. Brenner, Hiebert, and Tompkins (2009) observed the amount—and kinds—of reading in which third graders participated in a sample of classrooms that were participating in a state's Reading

First program. On average, across the 64 classrooms, students spent an average of 18 minutes a day with their eyes on a text (i.e., reading text). While this amount of reading practice is less than those amounts proposed by Allington (2001) and Fisher and Ivey (2006), it was greater than the national average of 12 minutes a day reported by Donahue et al. (1999). Even so, nearly a quarter of students in the Brenner at al. study did not read at all during the observed reading periods. On average, teachers reported that they were devoting twice as much time to English language arts instruction than they had prior to the implementation of Reading First. Of this time, however, students were involved with text less than 20% of the time.

Contrary to reports of previous studies (Pallas, Entwisle, Alexander, & Stluka, 1994), low performers in the Brenner et al. (2009) study did not have fewer opportunities to read. Indeed, observations indicated that low-performing students spent about the same amount of time with their eyes on the page as did their high- and middle-performing classmates. While this pattern is noteworthy, students of all proficiency levels read the same texts even when they were divided into performance-based groups. The use of the same text across groups (usually the reading-program anthology selection for the week) could mean that many students were reading texts that did not match their reading proficiency.

Less than 10% of total reading instructional time was allocated to unassisted reading where students are responsible for reading texts on their own without teacher assistance or immediate monitoring. Although the teacher's guides for their core reading programs included in-school independent reading, the Reading First teachers in this study had been advised that the NRP report (i.e., NICHD, 2000, p. 13) had found insufficient evidence to support this activity, and so it should not take place during the reading/language arts block.

What the NRP based its conclusion on, however, was that often classroom silent reading

opportunities take the form of sustained silent reading (SSR)—an activity that may not have the supports that many beginning and struggling readers need. The findings of the NRP, however, were not highly nuanced, given that the panel eliminated descriptive studies from its database. For example, excluded from the database were descriptive studies such as that of Manning and Manning (1984), in which SSR was shown to be more effective when it included peer discussion or teacher conferencing.

Following the NRP report, Lewis (2002) analyzed a broader group of independent reading studies, many pertaining to students' silent reading. The majority of the over-100 separate student samples that Lewis examined showed positive results for silent reading. The samples in most of the studies that reported no effects or negative growth from reading experiences consisted of students in fourth grade or above. Lewis speculated that, because older students have some reading proficiency, 10 to 15 minute reading periods—as was typical in these studies—may have been insufficient to significantly influence their performance. For students who were less-proficient readers (e.g., beginning readers, learning disabled, second-language learners), even such short periods typically produced benefits. Specifically, the studies suggest that, when there is some form of scaffolding, students' silent reading proficiencies improve as a result of increased opportunities to read (Nunnery, Ross, & McDonald, 2006). Scaffolding may need to take numerous forms, including support for selecting appropriate texts (Mervar & Hiebert, 1989).

On the 1998 NAEP (Donahue, Voelkel, Campbell, & Mazzao, 1999), fourth graders were asked to report the number of pages that they read daily in school. Even though a measure of self-reported reading is a rather simple tool (and not necessarily the most accurate), this measure predicted students' performances on the NAEP. A follow-up study that focused specifically on

the students within the state of Maryland confirmed that, after parental education was statistically

controlled, amount of engaged reading significantly predicted reading achievement on the NAEP

(Guthrie, Schaffer, & Huang, 2001).

The reported metric in the Donahue et al. survey was number of pages read. In Table 5, I

have converted pages read to number of words likely read by a hypothetical student in each of

three proficiency groups on the NAEP, using the average number of words per page in a set of

100 fourth-grade texts. It is highly unlikely that all three hypothetical students, representing

different proficiency groups on the NAEP, read at a similar rate (Pinnell et al., 1995; Daane et

al., 2005), making the disparities in amount of text read daily in school by less-proficient and

more-proficient students likely greater than the amounts shown in Table 5. But, even when a

similar reading rate is used across proficiency levels, differences in amount of time spent reading

in school mean that the poor readers keep getting poorer and the proficient readers keep getting

better (Stanovich, 1986).

**Instructional Applications: Appropriate Opportunities Can Increase Students' Reading Proficiency**

The research I review in this section suggests that students don't "naturally" develop

strong silent reading habits or stamina. Especially for students whose reading experiences occur

primarily in school settings, a strong silent reading habit (of which stamina is a part) depends on

the experiences that their teachers provide them. A habit such as silent reading does not occur in

a single grade. How children start out is incredibly important, but a habit is formed over an

extended period of time—grade after grade in school. If students haven't had the kind of support

that develops solid silent reading habits by the time that they are in third grade, changing

direction and developing appropriate habits may require instructional programs that are

particularly well designed—often referred to as interventions.

This section of the chapter—which parallels the third section of the book—begins with descriptions of instructional programs that have been carefully designed to increase silent reading proficiency. The first description is of an instructional effort for students who are still developing as readers—the project of Reutzel, Fawson, and Smith (2008). Reutzel et al. (2012) reconfigured sustained silent reading (where students read independently without substantial teacher monitoring or guidance) into Scaffolded Silent Reading (ScSR), in which students read widely in independent-level texts covering a range of genres and with periodic teacher monitoring and accountability. Reutzel et al. then conducted a study with third-grade students that compared ScSR to Guided Repeated Oral Reading (GROR), the approach that the NRP (NICHD, 2000) identified as effective. In GROR, students orally read a single text repeatedly, typically at grade level or instructional level, while receiving feedback from a teacher or other students. Based on the randomized, year-long experiment, Reutzel et al. concluded that there were no significant differences between the two forms of reading on students' fluency and comprehension development, with the exception of one significant difference favoring ScSR on expression of a single passage.

Reutzel et al.'s (2008) project was an experimental implementation. But, for students who are in the middle grades or beyond and have not had such appropriate experiences in developing appropriate silent reading habits, the consistency of carefully structured programs may be essential. I know of no similar study of classroom instruction involving older students. One context in which consistency and adaptive solutions can be part of lessons is the digital environment. Online contexts organize content and learning experiences in a manner that may be especially essential for struggling readers who have spent three or four years in classrooms where appropriate scaffolding has not been provided (Hiebert, Martin, Menon, & Bach, 2010). In

a digital environment, there are ways to monitor students' involvement—which, of course, is a difficult thing to do with 25 or more students in a classroom.

When considered in the context of the approximately 1,200 hours most students spend in school annually, even a small amount of consistent support in an online context has been shown to lead to considerable improvement the CSRs of struggling readers in grades 3 and beyond. Rasinski, Samuels, Hiebert, Petscher, and Feller (2011) found that consistent participation in a digital context over a school year resulted in improved performances on high-stakes assessments—both a norm-referenced test (NRT) and a criterion-referenced test (CRT). Reutzel, Petscher, and Spichtig (2012) found that a similar digital intervention of increased reading was also efficacious in increasing reading proficiency with students who were struggling as third graders but did not have the extended history of poor silent reading habits of the majority of students in the Rasinski et al. study.

In a recent assessment of CSR completed by 350,000 students from grades 2–12, over 14% of the students could not comprehend a first-grade text. What is surprising is what these students gained from consistent reading—on computers—over a two-month period following the assessment. After only 10 hours of instruction that consisted of reading extended texts and answering comprehension and vocabulary questions, these students had moved from 58% to 79% (on average) comprehension, moved to one grade-level higher of text, and were reading an average of 9 words faster (Hiebert, Spichtig, & Bender, 2013). These students had sufficient word recognition—even the lowest ones—to increase substantially in their comprehension on a first-grade passage. And this growth happened after students had read approximately 40,000 words read over the course of 40 lessons. Even a relatively small increase in reading apparently can mean substantial increases in students' proficiency.

The Rasinski et al. (2011), Reutzel et al. (2012), and Hiebert et al. (2013) reports all indicate that there are instructional mechanisms that can support students in developing the reading habits that are needed for the 21st century—and that build on research on what we know about cognitive and linguistic processes.

But most teachers don't have access to digital technology such as that I have discussed, nor am I advocating that digital technology or a particular program is the solution to all reading problems. What is critical is to consider the important components of various kinds of successful programs. Using knowledge about research, theory, and practice, I have generated seven actions that teachers can take to support increased stamina in silent reading. The actions are listed below and are described in more detail in Hiebert (in press).

1.      Give students responsibility for the first read of texts.

2.      Be explicit about the degree of challenge.

3.      Have students make explicit goals for increased stamina and reading.

4.      Increase the amount that students are reading.

5.      Increase students' engagement in reading through connected homework reading and magazine articles.

6.      Increase students' responses to texts through writing and discussions.

7.      Have monthly "on your own" sessions, using available sample assessments.


Individual teachers can implement these actions over the course of a school year with a cohort of students. Getting support in one year may make a difference (as was the case in the Rasinski et al. and Reutzel et al. studies). As the Hiebert et al. (2013) project indicates, students can benefit even from a several months of consistent and deliberate opportunities of increased

silent reading. But, for students who have developed poor reading habits in the early grades, the effort of creating strong silent reading patterns, including stamina, will likely require involvement of teachers over several years of students' school careers. Opportunities need to be consistent and aimed at acquiring knowledge. The texts can't be vacuous—otherwise students won't be engaged in reading. But neither should the texts be far out of the realm of students' knowledge or their vocabulary expertise. The amount of reading that students need to do to get good at reading is tremendous.

## Conclusion

The need for efficient silent reading habits for success in the digital-global age is unarguable. There is emerging evidence that these habits can be enhanced through scaffolding, both on the part of teachers and from digital supports. These supports look quite different than the SSR that Hunt (1970) advocated. This structuring can begin when students are in the early stages of reading (Reutzel et al., 2008). Further, it is highly likely that the process is an on-going endeavor, extending through the elementary grades and into middle and high schools as students encounter new genres and content. At least for the students who depend on schools to become literate, good silent reading does not just happen as a result of an emphasis on oral-reading fluency training. For many students, good silent reading habits require that they participate in *structured* silent reading experiences that model efficient reading. The target activities can be summarized as a succinct mantra (Hiebert, 2013): mantra that provides the meanings for increasing stamina in silent reading: Read often. Mostly silently. Focus on knowledge.

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Table 1

*Administration Times and Number of Sessions: CCSS Assessment Consortia[1]*

| Grade | PARCC | SBAC |
|---|---|---|
| 3 | EOY: 60 min. x 2 sessions<br>Perf: 40-60 min. per task<br>TOTAL: Approximately 4.5 hours | CAT: 1 hr. 45 min.<br>Perf: 35 min. (stimulus + research Qs; 70 min. writing prompt)<br>TOTAL: Approximately 3.5 hours |
| 4-5 | EOY: 70 min. x 2 sessions<br>Perf: 50-80 min. per task<br>TOTAL: Approximately 5 hrs. 50 min. | CAT: 1. Hr. 45 min.<br>Perf: 35 min (stimulus + research Qs; 70 min. writing prompt)<br>TOTAL: Approximately 3.5 hrs. |
| 6-8 | EOY: 70 min. x 2 sessions<br>Perf: 50-85 min. per task<br>TOTAL: Approximately 5 hrs. 55 min. | CAT: 1 hr. 45 min.<br>Perf: 35 min. (stimulus + research Qs; 70 min. writing prompt)<br>TOTAL: Approximately 3.5 hrs. |
| 9-11 | EOY: 70 min. x 2 sessions<br>Perf: 50-85 min. per task<br>TOTAL: Approximately 5 hrs. 55 min. | CAT: 2 hrs.<br>Perf: 35 min. (stimulus + research Qs; 70 min. writing prompt)<br>TOTAL: Approximately 4 hrs. |

[1]From K. K. Wixson (2013).
[2]EOY: End-of-Year
CAT: Computer Adaptive Technology

Table 2

*Accuracy Levels for Words Read without Meaning Change (Percentages)*

|      | 100-98% | 97-95% | 94-90% | <90% |
|------|---------|--------|--------|------|
| 1992 | 41      | 51     | 5      | 2    |
| 2002 | 76      | 15     | 5      | 2    |

Table 3

*Features of Passages (NAEP, DIBELS, and CSR Studies)*

| | Lexile | Mean Sentence Length | Mean Log Word Frequency | Core Vocabulary |
|---|---|---|---|---|
| *Hungry Spider* (1992 NAEP) | 660 | 10.70 | 3.69 | 96% |
| *Box in a Barn* (2002 NAEP) | 620 | 10.29 | 3.72 | 96.5% |
| *The Youngest Rider* (End of Year 4th Grade DIBELS | 810 | 12.55 | 3.61 | 96% |
| *Temporary Homes* (Hiebert et al., 2011) | 890 | 13.3 | 3.50 | 94% |
| *Theseus* (Hiebert et al., 2011) | 800 | 12.5 | 3.60 | 90% |

Table 4

*Fourth Graders' Rate, Accuracy, and Comprehension on DIBELS (2011-2012 cohort)*

| Percentile | Rate | Accuracy | Comprehension |
|---|---|---|---|
| 10 | 80 | 95 | 21 |
| 20 | 98 | 97 | 27 |
| 30 | 109 | 97 | 32 |
| 40 | 118 | 98 | 36 |
| 50 | 128 | 98 | 41 |
| 60 | 138 | 99 | 45 |
| 70 | 147 | 99 | 50 |
| 80 | 160 | 99 | 57 |
| 90 | 176 | 100 | 67 |
| 99 | 212 | 100 | 94 |

Table 5

*Typical Reading Volume: Reading Levels of Three Hypothetical Students[1]*

|  | Alex | Alice | Abby |
|---|---|---|---|
| Daily reading in school (in minutes) | 7.2 | 11 | 15 |
| Daily # of words read (yearly total words) | 715 (127,700) | 1,100 (198,000) | 1,485 (267,300) |
| Projected new words (with morphological family members) | 290 (1,160) | 446 (1,784) | 601 (2,406) |
| Performance on NAEP | Below-basic | Basic | Proficient |

[1]Same reading rate used for all students: 100 wpm