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CHAPTER 1

DEFINING READING FLUENCY

"When word recognition is slow and labored, cognitive load is occupied at the expense of understanding."

Stevens, Walker, & Vaughn, 2017

Many questions surround the definition of fluency as a concept, in part because fluency has many subtle elements that are interdependent and therefore difficult to separate (Hudson, Pullen, Lane, & Torgesen, 2009; Kuhn, Schwanenflugel, & Meisinger, 2010). These mechanics, or skills, work together to enable fluent reading. We define fluency as "reasonably accurate reading, at an appropriate rate, with suitable expression, that leads to accurate and deep comprehension and motivation to read."

There are three components in this definition that can be precisely defined (*accuracy, rate, expression*), while other words used to describe the performance standards for each component are intentionally left ambiguous (*reasonably*, *appropriate*, and *suitable*).

IN THIS CHAPTER

The first component of fluency is **accuracy**. The ultimate purpose of reading is always to comprehend what is being read. Accurate reading depends on identifying individual words, which requires learning the alphabetic principle: that letters (graphemes) have associated sounds (phonemes).

Rate, the second component, is often mistakenly used as a synonym for fluency. Rate technically refers only to the speed with which students read text. Fluency is far more complex than rate alone.

Expression, the third component of our definition, involves the process readers use to make reading sound like speech. Expression, also known as prosody, includes the pitch, tone, volume, emphasis, and rhythm in speech or oral reading. Another aspect of expression is a skillful reader's ability to "chunk" words together into appropriate phrases (Schreiber, 1991).

The ultimate purpose for reading is always comprehending what is being read.

Fluency Performance Standards

While the importance of reading accuracy, rate, and expression have been well documented in research, when we consider making recommendations regarding the performance standards for these components, we must combine findings from research with practical, common sense decisions. Using this combination, we conclude, along with most practitioners, that the performance standards for these three components of fluency should, in fact, vary depending on the demands of the task.

Current research on *reasonable* accuracy rates is minimal, but it is generally accepted that an accuracy score of 95 percent or better is desirable. When accuracy dips below 95 percent performance on reading tasks, reading comprehension suffers (National Association of Educational Progress, NAEP, 2002). For our emerging or beginning readers, research suggests that acceptable levels for accuracy should be even higher (perhaps 97 to 98 percent) in monitored instruction or practice settings (Foorman, Francis, Shaywitz, & Fletcher, 1997).

As with the other two components, there is no "one size fits all" for measuring optimal expression. There are times when we read (especially when reading silently) that expression is of little or no help to our understanding and enjoyment of the text. However, there may be times when exaggerated expression would be quite suitable, such as in theatrical performances.

Expression, the final component in reading fluency, is not static; it is influenced by circumstantial factors.

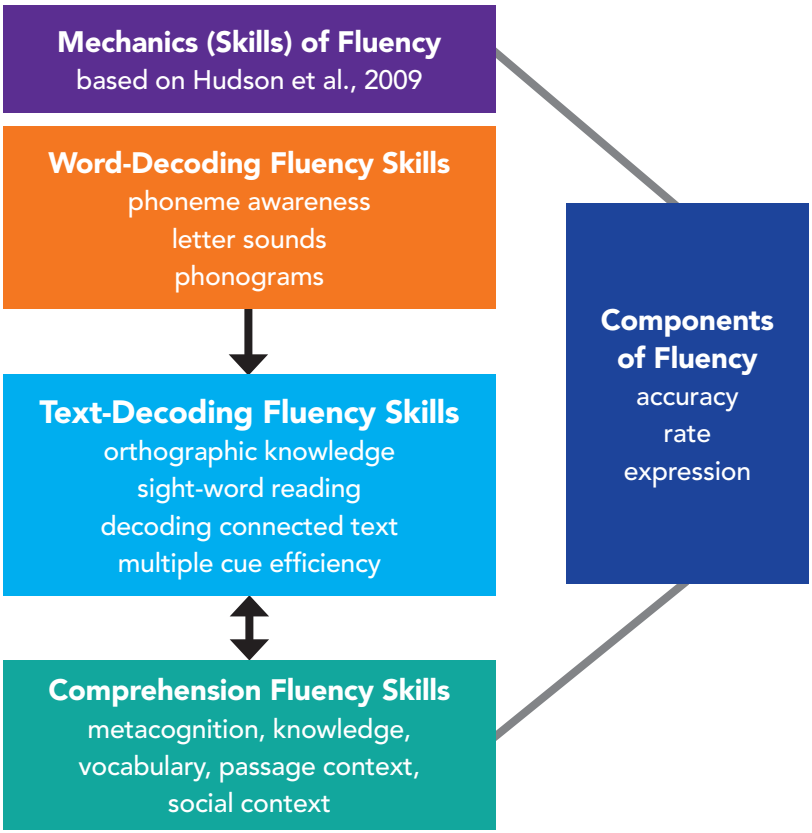
TEACHING TIP

Regarding rate, norms for oral reading fluency (ORF) have been established (Hasbrouck & Tindal, 1992; 2006; 2017). Researchers generally agree that performance at the 50th percentile of these ORF norms can serve as a reasonable benchmark for determining an *appropriate* reading rate to predict future academic success.

The Mechanics of Reading Fluency

As we have learned, there are three components that help us define reading fluency: accuracy, rate, and expression. These components are observable. However, if we lift the hood, so to speak, beyond what is observable, we realize there are numerous mechanics (or skills) that enable students to read with reasonable accuracy, appropriate rate, and suitable expression.

How the mechanics (or skills) of fluency may be grouped for study, assessment, and teaching:



The Role of Reading Fluency

What role does fluency play in the overall task of reading? Reading fluency has long been acknowledged as an essential skill that readers must develop to facilitate comprehension and motivate engagement in the act of reading.

Some have characterized the role of fluency in reading as a "bridge" between early and later reading stages (Pikulski & Chard, 2005). In early reading stages, students develop oral language and phonemic awareness, learn to apply the alphabetic principle to increasingly complex words, and become familiar with more and more sight words. Later reading stages are characterized by increased reading skills and comprehension.

If readers do not develop adequate levels of fluency, they can become "stuck" in the middle of the bridge, able to decode words but with insufficient automaticity to adequately facilitate comprehension. These students typically become our reluctant readers, often with dire consequences for themselves, their future families, and society as a whole (Baer, Kutner, & Sabatini, 2009; Torgesen, 2004).

Another metaphor used to explain the role of fluency is to think of it as a "doorway" that leads to comprehension and increased motivation. If that "fluency door" remains closed, then access to the meaning of print and the joy of reading is effectively blocked.

Fluency is a bridge between early and later reading stages (Pikulski & Chard, 2005). If readers do not develop adequate fluency, they can become stuck, with dire long-term consequences.

The brain processes information using a complex, interconnected system. Too much information coming into the brain at once can overload working memory and decrease comprehension.

Brain Processes Involved in Fluent Reading

In the brain of a fluent reader, the various component skills involved in accurate and effortless reading are applied simultaneously and automatically. Each individual skill is exercised in the reading process and therefore supports the involvement of other skills in a reciprocal way (McClelland & Rumelhart, 1986).

The brain processes information, such as the images in printed text, by a complex, interconnected system that begins with the working memory (Miyake & Shah, 1999). The working memory temporarily stores and manages information that will be used by the brain to complete the complex cognitive tasks involved in learning, reasoning, and comprehending.

Scientists acknowledge that while individual brains differ in their function and capacity, various models of working memory suggest that ALL brains need to process information in a manner that is manageable.

If too much information comes into the brain at once, the working memory becomes overloaded and comprehension is impaired. Conversely, if information comes into the brain too slowly, the working memory cannot devote sufficient attention to the information to perceive a relationship to prior learning or identify a pattern.

Furthermore, the brain must receive information that is reasonably accurate to promote comprehension. Comprehension is impaired or limited by reading too quickly, slowly, or inaccurately, while it is facilitated by reading at an "appropriate rate" with "reasonable accuracy." In most cases, the appropriate rate is one that mirrors the rate of spoken language, which most brains have been hardwired to comprehend since birth.

Automaticity in Fluent Reading

In the early twentieth century, noted psychologist S. A. Huey suggested that those who read extensively were better able to comprehend what they read because "repetition progressively frees the mind from attention to details, makes facile the total act, shortens the time, and reduces the extent to which consciousness must concern itself with the process" (1908/1998, p. 65).

This concept reemerged in professional literature in the 1970s when LaBerge and Samuels (1974) proposed their theory of automaticity and its relationship to reading comprehension. They explained that the human brain has the capacity to perform tasks at an automatic, nearly unconscious, level once sufficient learning has occurred.

Readers who achieve automaticity can allocate their cognitive processes solely to thinking about the meaning of what is being read, rather than thinking about individual words and how to read them. Conversely, readers without sufficient automaticity must devote a significant amount of their cognitive resources simply to decoding and recognizing words. Therefore, the mental resources remaining, required for attention and processing information, are limited and comprehension is thereby impaired. In turn, it is unlikely that these readers who work so hard are going to be highly motivated to read even more!

Over a period of years, as a result of effective instruction plus independent and monitored practice, readers can establish sufficient levels of automaticity to allow and encourage effortless and pleasurable reading. Automaticity results from the development of many different component skills.

FURTHER READING

Harn, B. A., Stoolmiller, M., & Chard, D. J. (2008). Measuring the dimensions of alphabetic principle on the reading development of first graders: The role of automaticity and unitization. *Journal of Learning Disabilities, 41,* 143–157.

Huey, S. A. (1908/1968). *The psychology and pedagogy of reading.* Cambridge, MA: MIT Press.

Kuhn, M. R., Schwanenflugel, P. J., & Meisinger, E. B. (2010). Aligning theory and assessment of reading fluency: Automaticity, prosody, and definitions of fluency. *Reading Research Quarterly, 45*(2), 230–251.

LaBerge, D., & Samuels, J. (1974). Toward a theory of automatic information processing in reading. *Cognitive Psychology, 6,* 293–323.

Report of the National Reading Panel (NICHD, 2000)

Many reading professionals refer to the Report of the National Reading Panel (NICHD, 2000) as the most recent milestone for reading fluency awareness. This report identified these five skills for intensive study:

- phonemic awareness
- phonics
- fluency
- vocabulary
- comprehension

The Developmental Role of Fluency

Researchers have noted that as students move through the various developmental stages of reading, the relative roles of two key components of fluency—accuracy and rate—change. For emergent, beginning readers, *accuracy* rather than rate should be the focus of instructional support at the phoneme, letter, and word level (Ehri & Snowling, 2004; Harn, Stoolmiller, & Chard, 2008). During the early stages of literacy development, decoding accuracy significantly affects student's comprehension of the simple texts that beginning readers attempt to read (Adams, 2011; Foorman, Francis, Shaywitz, Shaywitz, & Fletcher, 1997).

However, once students are efficiently reading connected text with reasonable accuracy and confidence—typically by the middle of first grade—then the rate at which they read connected text, along with accuracy, strongly affects their overall reading skill including comprehension (Wayman, Wallace, Wiley, Tichá, & Espin, 2007).

Some researchers have noted that once a student's reading ability reaches approximately sixth-grade level, factors other than fluency become more important in the overall reading process. These factors include syntax, vocabulary, and background knowledge (Fuchs, Fuchs, Hosp, & Jenkins, 2001; Wayman et al., 2007).

The National Reading Panel stated in its report: "Fluency is one of several critical factors necessary for reading comprehension. Despite its importance as a component of skilled reading, fluency is often neglected in the classroom" (NICHD, 2000, p. 11).

The Common Core State Standards that continue to influence many districts across the United States also address fluency in their English/Language Arts standards (http://www.corestandards.org).

The fluency standard for kindergarten requires that students be able to read emergent-reader texts with purpose and understanding. For students in grades 1–5, the standards call for students to read with sufficient accuracy and fluency (apparently using the term *fluency* as a synonym for *rate*) to support comprehension, with these details outlined:

- Read on-level text with purpose and understanding.
- Read on-level text orally with accuracy, appropriate rate, and prosody (expression) on successive readings.
- Use context to confirm or self-correct word recognition and understanding, rereading as necessary.

Clearly, the convergent emphasis of recent findings and CCSS standards indicates the importance of providing high-quality instruction in reading fluency.

Many complex and interdependent mechanics (or skills) contribute to the ability to read fluently, including recognition of speech sounds, letters, words, connected text, memory, cognition, and even individual experiences. The ability to read efficiently and effortlessly is a goal we must help every student achieve to become skillful and motivated readers who understand and learn from what they read.

Fluency plays a complex and essential role in the overall task of reading, and may affect whether students become skillful and motivated readers.