

Table of Contents

6	Putting It in Perspective
9	Chapter 1: <i>Defining Reading Fluency</i>
37	Chapter 2: <i>Assessing Reading Fluency</i>
69	Chapter 3: <i>Teaching Reading Fluency</i>
97	Chapter 4: <i>Integrating Fluency Skills</i>
119	Concluding Remarks
120	References
134	Glossary
136	Appendices

DEFINING READING FLUENCY

Learning to read is like constructing a structure with blocks. Investing sufficient time and effort to build a firm foundation helps ensure that the remainder of the building has sufficient support. Reading is a highly complex task, involving many interconnected and codependent linguistic processes that draw upon a variety of separate skills (Dehaene, S., 2009; Kilpatrick, D. A., 2015; Mehta, Foorman, Branum-Martin, & Taylor, 2005; Seidenberg, 2017). Fluent readers have established a firm foundation for reading by integrating the various component skills so well that the act of reading occurs without the reader having to intentionally will the skills into action (Hudson, Pullen, Lane, & Torgesen, 2009). When these various skills are fully established, reading happens automatically.

Marilyn Adams (1990) compared this complex process to driving a car. According to Adams, there are many discrete systems that a driver must learn to engage and implement simultaneously. However, as Adams pointed out, drivers only drive the car, whereas readers also need to *build* their car (develop the mechanical systems for identifying words) and *maintain* the car (fuel it with print, repair any problems along the way, and make sure it runs smoothly) before finally being able to drive the car successfully. This multiplicity of tasks requires drivers to be motivated, strategic, and mindful of the route they are taking.

Adams also noted that while cars are built by assembling various parts separately and then fastening them together, the parts of the reading system are not so distinct. We don't become readers by learning each individual subsystem and then connecting them together, piece by piece. Rather, the parts of the reading system must both develop together *and* be processed together effortlessly for skillful reading to occur. One of the key components of this complex process is *reading fluency*.

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

Stevens, Walker, & Vaughn, 2017

IN THIS CHAPTER

- Defining Reading Fluency—Components and Mechanics
- Reasonable? Appropriate? Suitable?
- The Mechanics of Comprehension
- Experiencing the Mechanics of Fluency
- The Mechanics of Reading Fluency
- The Mechanics of Word Decoding
- The Mechanics of Text Decoding
- The Mechanics of Comprehension
- The Role of Reading Fluency
- Fluency Analogies
- Brain Processes Involved in Fluent Reading
- The Developmental Role of Fluency
- Current Thinking About Reading Fluency



Reading fluency involves many interdependent mechanics that work together and are difficult to separate.

Defining Reading Fluency—Components and Mechanics

What is reading fluency? Many questions surround the definition of fluency as a concept, in part because fluency has many subtle *mechanics* that are interdependent and therefore difficult to separate (Hudson et al., 2009; Kuhn, Schwanenflugel, & Meisinger, 2010). These *mechanics*, or skills, work together to enable fluent reading.

Although professionals may not hold to firm consensus regarding a single definition of reading fluency, most definitions include three observable, measurable *components*: accuracy, rate, and expression (sometimes referred to as prosody). We will discuss these three components and then elaborate how various mechanics involved in each component make fluent reading possible.

For our purpose in this guide, 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.

Within our definition, there are some specific technical terms 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* accurate, *appropriate* rate, *suitable* expression). We will describe each of the three components of our definition and then relate the components to their less-distinct performance standards. These components are illustrated in Figure 1. (p. 11).

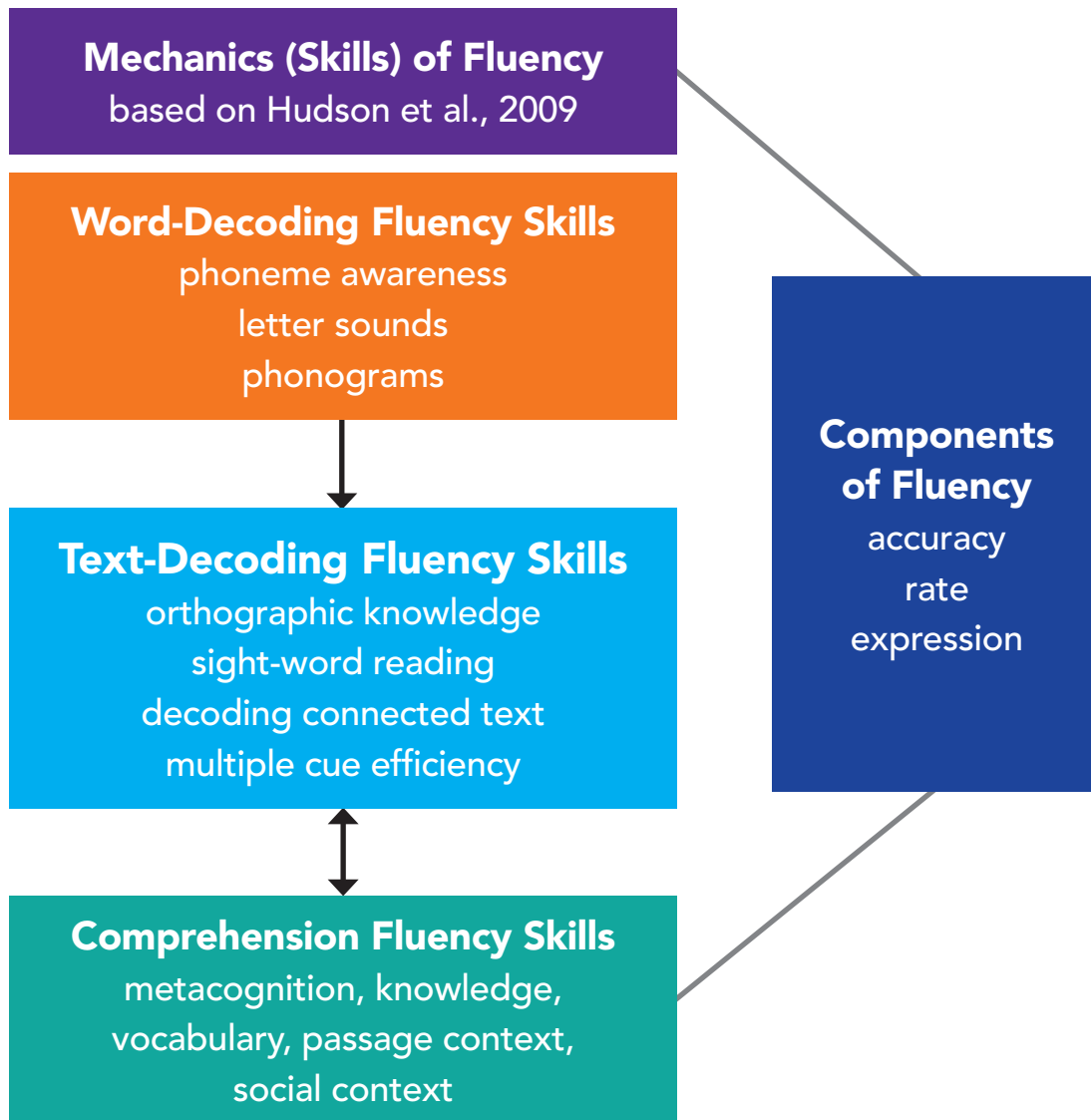


Figure 1. Components and Mechanics of Fluency



Fluent reading enables word identification and meaning to occur simultaneously and automatically.

Component 1: Accuracy

In our definition of reading fluency, the first component is accuracy. We listed accuracy first to underscore its crucial role as the essential foundation of reading fluency. To be considered fluent, reading must be accurate first, foremost, and forever!

The ultimate purpose of reading is always to comprehend what is being read. For a reader to understand what a text means, that text first must be read with a certain level of accuracy, meaning that accurate word meanings must be accessed. This may sound simplistic. However, to read *text* accurately, a reader must be able to identify individual *words* accurately, which requires learning the alphabetic principle: that *letters* (graphemes) have associated *sounds* (phonemes) that need to be accurately identified and skillfully processed. Irregular words that cannot be decoded must also be read accurately. The recognition of *common letter patterns*, as well as the *correct spelling* of words, also play roles in text accuracy. Then, of course, once the word has been identified, its correct meaning must be accessed. For a fluent reader, the accuracy of word identification and meaning happen simultaneously and automatically.

Component 2: Rate

Rate is often mistakenly used as a synonym for fluency. However, rate technically refers only to the speed with which students read text. Fluency is far more complex than rate alone. Another common fallacy about rate is that “faster is better,” although most teachers likely know from experience that this is not true. Most teachers have had experiences with students who read quickly but still may not have good comprehension. Speed alone does not facilitate comprehension, and a fast reader is not necessarily a fluent reader. In fact, fast readers may be reading inaccurately or reading too quickly to think about what they are reading. The rate or speed at which text is decoded and recognized represents an important aspect of fluency. However, reading fast is *not* the same as reading fluently!

Component 3: Expression

Expression is a component of oral reading. It 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). In some research on fluency, you will find expression referred to as *prosody* (Schwanenflugel, Hamilton, Wisenbaker, Kuhn, & Stahl, 2004). There is only minimal evidence that expressive reading influences or mediates reading comprehension (Schwanenflugel et al., 2004). One study, however, found that the extent to which students use correct expression while reading orally can indicate how well they comprehend the text being read (Hudson, Lane, & Pullen, 2005).

Three researchers in this field, Kuhn, Schwanenflugel, and Meisinger (2010), state that they believe "rather conclusively at this point that good reading prosody emerges as children develop efficient word and text oral reading skills" (p. 45). In other words, expression (prosody) may be an outcome, rather than a contributor, to comprehension.

Tim Rasinski (2004) used the analogy of a musician when he discussed the role of expression in fluent reading. He noted that skillful (fluent) musicians interpret a musical score through their decisions about pacing, phrasing, emphasis, and variations on how to adjust the volume and tone of the piece as they play it. They must first be able to simply "decode" the music notation score accurately. Then they construe how to present the piece, using their understanding of the music and guided by suggestions of the composer regarding accents, dynamics, and so on. Similarly, readers indicate reading fluency by moving beyond mere decoding into suitable expression that likely reflects comprehension.



Expression includes pitch, tone, volume, emphasis, and rhythm that may change according to the context for reading.



Performance standards for reading fluency will vary depending upon the demands of individual tasks.

Reasonable? Appropriate? Suitable?

Now let's look at the performance standards associated with each component in our definition of reading fluency. Our definition states that fluency is composed of *reasonably* accurate reading, at an *appropriate* rate, with *suitable* expression. We understand that the italicized terms are rather vague, and they imply that standards for accuracy, rate, and expression may actually change from time to time or in different situations. Exactly our point!

Before we explain, we need to share a bit of our educational philosophy and professional ethics. We hold ourselves to this standard for our work as educators: Whenever we need to make decisions in our professional practice with students, we first seek whatever guidance can be obtained from a convergence of well-conducted, relevant research. However, if compelling empirical information is not available, then we rely on common sense to form professional judgments, based on years of field-based experience in classroom settings.

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 experience. Using this blend of science and practice, we conclude, along with most educators, that the performance standards for these three components of fluency should vary depending upon the demands of the task.

For example, if we are reading the directions on a bottle of medication that must be administered to save the life of a loved one, we certainly need to read as accurately as possible! We would strive to be 100 percent accurate. We are likely going to slow down and even reread the directions more than once. If there is a word used in the directions that we do not understand, we will consult an expert. Similarly, if we are studying some challenging material for an important exam, we will again want our accuracy to be as high as possible, and therefore our rate will likely be slower than when comprehension requirements are less demanding.



Reading accuracy is especially important when comprehension is critical and therefore, may require a slower reading rate.

On the other hand, if we are simply skimming through a favorite magazine to pass the time or perusing the newspaper on a Sunday morning, our accuracy levels can be significantly lower, so our reading rate may be higher than optimal levels. By the same token, in some situations, readers' expression might be appropriately exaggerated if they are reading a humorous piece of literature aloud to an audience or a group of friends. Clearly, different situations demand different emphases of the three components of fluency. We explain below our thoughts about performance standards for fluent reading that involve *reasonably* accurate reading, at an *appropriate* rate, with *suitable* expression.

"Reasonably" Accurate

How accurate should we expect our students to be? What is "reasonable"? Precisely defined standards for reading accuracy have not been scientifically established. In their summary of research on reading fluency, Rasinski, Reutzel, Chard, & Thompson (2011) state that readers' comprehension appears to degrade when the percentage of accurately read words falls below 95 percent, thus implying that we should aim for *at least 95 percent accuracy* as one indicator of fluent reading with students. When students' accuracy rates fall below 95 percent, additional diagnostic assessment may reveal underlying causes for the errors being made and provide guidance for instruction to help improve reading accuracy. Research suggests that for younger emerging readers acceptable levels for accuracy should be even higher (perhaps 97 to 98 percent) in monitored instruction or practice settings (Foorman, Francis, Shaywitz, & Fletcher, 1997).

Current research on acceptable accuracy rates is minimal; however, 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 (U.S. Department of Education, 2003). Current studies are seeking to identify desirable accuracy levels for each grade level (first through sixth grade) based on CBM-R reading passages. Until we have access to the outcomes of this research, it is recommended that teachers note when students' accuracy levels fall below 95 percent (even those students whose oral reading fluency [ORF] score is acceptable) and respond with individual attention through further diagnostic assessment and instruction. Poor accuracy leads to compromised comprehension and requires teacher attention to repair.



Rasinski, Reutzel, Chard, & Thompson (2011) found that comprehension is degraded when students read less than 95 percent of the words in a text accurately.



There is no research or evidence to support that reading faster is better.

“Appropriate” Rate

Norms for oral reading fluency, as measured in words correct per minute (WCPM), have been established (Hasbrouck & Tindal, 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.

Unfortunately, some states and districts across the country have used these norms to set their standards for reading fluency at the 75th percentile or even higher. While that might sound like a good idea, in the case of reading rate, it isn’t.

Setting high standards for students is usually an excellent thing to do. In many areas, higher or bigger or faster is definitely better. For example, having a higher IQ or being able to run, jump, or swim faster, higher, or longer is certainly better than lower scores in these areas. However, in the case of reading fluency, this notion is not correct. There is absolutely *no* research or evidence from real-world practice to support that reading *faster* is better. While there is ample empirical evidence that it is important for students to maintain WCPM rates minimally at the 50th percentile, there is no research to suggest that pushing students to have WCPM scores above the 50th percentile results in any long-term benefit. Very few students will be able to achieve such levels, so they and their teachers may become frustrated in the attempt. More importantly, there is no reason to believe that students’ reading success or enjoyment will substantially benefit if they do achieve this higher level. In other words, students do not need to read as fast as possible to become good readers. Students who read in the average range of ORF norms are on target to become effective readers; they are doing just fine. *Fast reading is not the same as fluent reading!*

It is preferable and more accurate to think about ORF scores the way we think about blood pressure, body temperature, or cholesterol levels. All three of these measures have established “norms,” and there are significant findings from medical research to indicate that it is important for healthy people to maintain their blood pressure, body temperature, and cholesterol at “average” or expected normative levels. Unlike IQ or athletic prowess, there is absolutely *no* benefit to having significantly higher (or lower) scores in these three areas! Like blood pressure, body temperature, and cholesterol, ORF scores can serve as “indicators” of health and wellness, and scores at the “average” level are, in fact, optimal.

As professional educators, we need to understand this correlation and challenge those who promote the incorrect notion that we should push students to read ever faster. How to correctly obtain and interpret ORF words correct per minute scores will be fully explained in Chapter 2.

“Suitable” Expression

As with the other two components, there is no “one size fits all” for measuring optimal expression. There are times when, especially reading silently, expression is of little or no help to our understanding and enjoyment of the text. In silent reading, we simply want a reader to understand and attend to the markings of periods, commas, exclamation points, and quotation marks provided by the author to assist in the text interpretation. In oral reading, expression is more evident. When oral reading sounds as effortless as speech and mirrors the melodic features of spoken language, we can say that the reader is using *suitable* prosody or expression (Rasinski, 2004; Stahl & Kuhn, 2002). However, there may also be times when exaggerated expression would be quite suitable. In theatrical performances or other entertainment venues, a reader might embellish a presentation with variations of pitch, intonation, phrasing, and pauses that would certainly not sound like normal speech but might be entirely appropriate for that occasion.

Now please complete the Quick Response to self-check what you have learned about the components of fluency. Then we will dig a little deeper into the mechanics (or skills) that enable fluent reading and that form a basis for assessment and instructional decisions. If you are leading a professional development group, allow time for participants to discuss the quick response prompts and address any questions or concerns.

QUICK RESPONSE

- Identify the three key components in the definition of fluency and describe how each contributes to the overall skill.
- What do *reasonable*, *appropriate*, and *suitable* mean to you as a teacher when you think about teaching students to be fluent readers?

TIP

As you present the mechanics of reading fluency, refer often to the diagram provided on page 11 to help keep the terms straight. Remember: The mechanics of reading fluency are the underlying, foundational skills that enable us to read with reasonable accuracy, appropriate rate, and suitable expression!

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; we can hear them and see them, and therefore we can use them as indicators of reading fluency just like blood pressure and body temperature, easily observed and measured, are used by physicians as general indicators of health and well-being.

However, before we can delve into assessment and instruction of fluency (covered in Chapters 2–4), we must consider the mechanics or skills *that enable us* to read with reasonable accuracy, appropriate rate, and suitable expression. In other words, let's peel away what is observable, lift the hood, so to speak, and view the actual mechanics at work when we read. These mechanics are what make it possible for students to read accurately, at an appropriate rate, with expression and comprehension. They contribute to and allow the key components of fluency to function. Understanding these mechanics provides keys to help teachers select appropriate assessment and design and provide effective fluency instruction. Reading is complex, and assessing and teaching reading has been compared to rocket science (Moats, 1999).

Hudson et al., in their article “The Complex Nature of Reading Fluency: A Multidimensional View” (2009), identified several mechanics, or individual skills, involved in reading fluency. Given their significant findings, we have categorized our discussion of underlying fluency mechanics into three categories: word-decoding fluency, text-decoding fluency, and comprehension fluency (see Figure 1, p11).

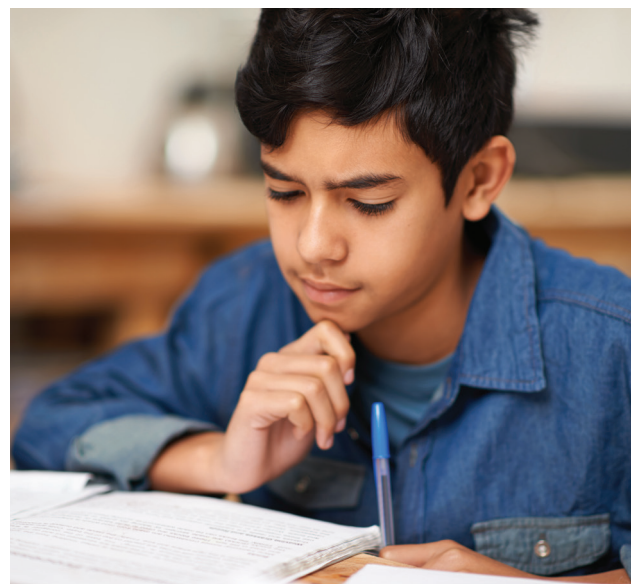
The Mechanics of Word Decoding

Word-decoding fluency represents the first category for our mechanics study. The word-decoding fluency skills include phoneme awareness, letter sounds, and phonogram fluency. These skills nourish the development of the second mechanics category, text-decoding fluency. Word-decoding fluency skills comprise the most basic skills necessary to access text during a student's early reading instruction. Each skill is described in depth below.

Phoneme Awareness

Phoneme awareness is the foremost skill contributing to word-decoding fluency. Fluency with phoneme awareness, defined as accurate and quick oral segmenting and blending of individual sounds (or phonemes) in words, provides a key to successful print decoding (Kilpatrick, 2015; 2016; Perfetti, Beck, Ball, & Hughes, 1987; Wagner & Torgesen, 1987). Helping our students develop this foundational skill must be a focus of early literacy instruction, realizing that some students will easily achieve proficiency and others will need significant, additional instructional support.

Some older students may also exhibit difficulty with phoneme awareness. Older struggling readers will have had years of experience with print; therefore, the phoneme difficulty they experience may manifest itself in different ways when compared with younger students. For example, multisyllable words may be difficult for older students to reproduce and say correctly; these words can get all mixed up in their mouths like tongue twisters. Words that students decode sound by sound may be difficult to blend together to produce complete words, and sometimes phonemes will be omitted or said out of correct order (i.e., *Magnolia* for *Mongolia*; *aminal* for *animal*). With awareness that these phonological gaffes can be an indication of more serious concerns with foundational reading skills, teachers should always carefully observe how students reproduce and interact with written and oral language.



Some older students may exhibit difficulty with phoneme awareness in ways that manifest differently from younger students.



Developing an awareness of sounds in language helps readers make the connection between sounds (phonemes) and letters, known as the alphabetic principle.

Letter Sounds

The second skill listed under word-decoding fluency in Figure 1 (p. 11) involves knowing what speech sounds are represented by which letters. Knowing letter sounds provides basic access to print. The foremost reason we teach readers to develop awareness of sounds in language (phonemes) is to help them eventually make the connection between those phonemes and printed letters. This connection is known as the *alphabetic principle*. Individual letters and certain combinations of letters, called *graphemes*, represent single speech sounds, and strings of graphemes and their associated speech sounds create words. The ability to identify letter sounds fluently (accurately and automatically) supports instant word recognition and accurate and quick decoding of words students have never seen in print (Adams, 2011).

Phonograms

Phonograms represent the final contributor to word-decoding fluency. It is widely accepted that to reach proficient reading levels students must move from single grapheme decoding (letter sounds) to instant recognition of common groups of letters called *phonograms* (Curtis, 2004; Ehri, 2002). Phonogram fluency means that readers access larger chunks of words in syllables when decoding. These chunks are generally rimes, such as *-at* in *fat*, *-igh* in *high* and *sight*, *-ock* in *sock* and *block*, and so on. Phonograms are represented in many of the words taught during early reading instruction.

Sample List of Phonograms									
kn	gn	wr	ie	dge	ei	eigh	ti	si	ci
igh	ey	oe	ough	ph	gu	oa	ui	ew	ed
ur	wor	ear	ng	ea	aw	au	or	ck	wh
ir	er	oi	oy	ai	ay	ar	ch	oo	ou
sh	ee	ow	tch	oo	ue	eu	ee	oa	ch

The Mechanics of Text Decoding

Now let's study the mechanics identified under the second category, text-decoding fluency. The mechanics involved in this category include orthographic knowledge, sight-word reading, decoding connected text, and multiple cue efficiency. These skills establish a two-way street with reading comprehension. In other words, all of the brain processes needed for accurate, rate-appropriate, and expressive reading are activated when students possess the mechanics listed as part of text-decoding fluency. These mechanics lead readers to accurate word and text identification and are directly associated with helping readers access meaning (Berninger et al., 2010; Ehri, 1987, 2002, 2005; Harn, Stoolmiller, & Chard, 2008; Hudson et al., 2009; Perfetti & Bolger, 2004; Thomson et al., 2005). Accurate readers have a lot going on in their brains! Read on to discover how these skills take reading to automatic levels.

Orthographic Knowledge

Orthographic knowledge is the first of the text-decoding fluency skills. The Greek root *ortho* means correct and the root *graph* means writing. The term *orthographic* literally means “correct writing,” or what is more commonly considered correct spelling. When readers have established orthographic fluency (accuracy and rate in the recognition of correctly spelled words), they possess a familiarity with the precise and unique spelling patterns in words that enables them to instantaneously decode words and more readily access meaning (Bowers & Wolf, 1993; Dehaene, 2017; Kilpatrick, 2015). Proficient readers have well-established orthographic awareness; they can choose the correct word given two homonym choices, such as *spoon* or *spune*, when they are reading text. Orthographic skills result from years of cumulative, systematic, explicit instruction in the spelling system, both in writing and from vast amounts of reading for meaning.

Sight-Word Reading

Sight-word reading represents the second skill involved in text-decoding fluency. When teachers hear the term *sight words*, they routinely think of Dolch or Fry, or Harris Jacobsen, or other compiled lists of high-frequency words that appear commonly in written text. Many of those words are considered irregular because they do not follow common phonics rules and cannot be decoded or “sounded out” (e.g., *were*, *was*, *of*, *one*, etc.).

High-Frequency Words and Sight Words—Is There a Difference?

High-frequency words are those common words that occur frequently in printed text. There are many lists of high-frequency words to choose from. *Dolch words*, *Fry words*—they are essentially lists of the same words. Most lists order the words by frequency, listing the words from the most frequent words that appear in print to the less frequent. Because these words appear so often in print, composing up to 50 percent of written text, we want our students to have automatic access to these words while reading. Such automaticity improves their reading fluency. Improved fluency can mean improved comprehension—our ultimate goal.

So once students can read high-frequency words quickly and accurately, these words have joined an elite club; they are now sight words. A sight word is any word, not just a high-frequency word, that is correctly identified instantaneously, without conscious effort. As you read this paragraph, every word you identify, or instantly decode, is a *sight word* for you, and many are not high-frequency words. What we are saying here, is that there IS a difference in our labeling of sight words and high-frequency words. We want all high-frequency words to become sight words, but not all sight words are high-frequency words.



Word-decoding fluency supports the eventual decoding and comprehension of connected text, enabling students to automatically access meaning.

Sight-word automaticity certainly does include the Dolch words and other lists of high-frequency words, but it also consists of any words that readers learn to recognize automatically. Our goal should be to help our students build as large a bank of sight words as possible because this arsenal facilitates readers' accuracy and fluency (Schwanenflugel, Hamilton, Kuhn, Wisenbaker, & Stahl, 2004; Torgesen, Rashotte, & Alexander, 2001). Let's expand our thinking about sight words and consider the researcher Linnea Ehri's (1998) contribution to this topic: Reading by sight "activates spelling, pronunciation, and meaning immediately in memory" (Ehri, 1998, p. 8).

Decoding Connected Text

Decoding connected text represents a third, integral skill in the second category of fluency mechanics: text-decoding fluency. It is easy to become confused here because we have already talked about decoding in the first category as word-decoding fluency. In the first category, word-decoding fluency has to do with students decoding parts of individual words to eventually sound out and comprehend that one word. In the second category, decoding *connected text* refers to the development of meaning as students successfully decode multiple words in connected text. Word-decoding fluency supports the eventual decoding and comprehension of connected text; in short, second-category mechanics are dependent upon the first-category mechanics, enabling students to automatically access connected text for meaning.

When students encounter unknown words in connected text while they are simultaneously trying to construct meaning, it is critical that they approach new words analytically through the decoding process (Adams, 1990; Brady, 2011; Kilpatrick, 2015). *Word decoding* involves turning written symbols into oral language. Word decoding happens when we read words instantly or when we figure them out grapheme by grapheme. Effectively and efficiently decoding text is dependent on all three of the foundational skills listed in the first category of word decoding. Being able to apply those skills simultaneously while reading *connected text* is imperative so that students achieve sufficient accuracy and rate to be truly fluent readers, who understand and enjoy the process of reading.

Multiple Cue Efficiency

Multiple cue efficiency represents a fourth mechanic involved in text-decoding fluency. The efficient integration of multiple cues requires that readers decode an unknown word in text and then, using the overall meaning of the passage, determine if they have decoded and pronounced the word correctly. We teach students to ask, “Does this word make sense here?” so they can understand how the processes of decoding and meaning work together. Once decoding becomes automatic, readers more readily adjust their word pronunciation by using a sense of meaning to match the word with the context and thereby pronounce the word correctly.

Caution: The ability to use multiple cues effectively requires that decoding be activated *first*. Although widely taught as an appropriate strategy for emerging readers, encouraging students to use multiple cuing systems to decode words is not based on research and reflects an incorrect understanding of how the brain reads! Proficient readers apply *decoding* as their first tool with words they do not instantly recognize, then secondly confirm if they have decoded correctly by checking to make sure the word makes sense within the context (Rayner, Foorman, Perfetti, Pesetsky, & Seidenberg, 2001). Pictures and context are helpful as a *secondary support* for novice readers, but decoding is their first ammunition! First decode—then check for meaning given the context.



Although widely taught as an appropriate strategy, encouraging students to use multiple cuing systems to decode words is not based on research and incorrectly interprets how the brain reads.



Comprehension fluency involves many underlying skills and strategies that students develop over time.

The Mechanics of Comprehension

The third mechanics category addresses the most important area of all: reading comprehension, or comprehension fluency. While the focus of this manual does not include assessment or instruction related to the skill of comprehension, it is nonetheless essential to include comprehension in our discussion of reading fluency. After all, we must not forget that fluency *includes* comprehension! Therefore we encourage all teachers to continually study and build their professional skills of assessment and instruction to promote reading comprehension. Consider the list of comprehension mechanics below as you observe students and plan instruction.

Every teacher would agree that the primary reason we work so hard to teach students to read fluently rests upon their being able to fully understand, learn from, and enjoy whatever text they choose to read. When we look at comprehension fluency, we realize it involves many underlying skills and strategies that students must develop over time through carefully planned instruction and personal experiences with text. The comprehension mechanics identified by Hudson and colleagues (2009) include:

- **Metacognition:** Metacognition is readers' ability to consciously consider how they think about text while reading, to define the strategies they use, and to monitor their ability to apply these thinking strategies. With systematic instruction and teacher modeling, students increase their consciousness (metacognition) of how to interact with text to aid comprehension.
- **Knowledge:** Students access their prior experiences and knowledge of the world to connect what they already know with what they are currently reading.
- **Vocabulary:** Students continually build and expand their "bank" of word meanings necessary to discuss and understand background experiences and expand their current knowledge.
- **Passage Context:** Written passage context may conflict or support students' personal experiences. By studying passage context, we acquire new vantage points that deepen our understanding of ourselves and other worlds.
- **Social Context:** Students set and adjust reading outcomes based on a defined purpose for reading. This social context for reading varies depending on the reading task. By modeling and practice, teachers help students develop their awareness of social context.

Fluent readers apply these comprehension mechanics with increasing sophistication as they mature and broaden their experiences with print. As reading fluency develops, we include the mechanics of comprehension fluency in our assessment and instruction, with the awareness that understanding text can develop fully only when decoding fluency and reading fluency are established and automatic. In actuality, the mechanics in all three areas—decoding, reading, and comprehension—develop alongside each other and support each other. Together, these skills form the working parts of accuracy, rate, and expression.

Experiencing the Mechanics of Fluency

Deep familiarity with the mechanics of reading fluency prepares teachers to effectively use the diagnostic procedures that will be presented in Chapter 2. We encourage you to explore each of these critical skills by engaging in the exercises provided in Appendix 1. As teachers, we must be profoundly aware of the difficulty many learners experience when trying to grasp the multiple skills involved in reading, because it helps us understand how explicit to be with our instruction (Moats, 2000). The exercises included in Appendix 1 have been designed to help you directly experience fluency mechanics in a way that mirrors how students interact with speech and print. By engaging in these exercises, we hope you will develop a deeper appreciation for your students' learning experiences and increased awareness to strengthen your diagnostic and instructional practices.

QUICK RESPONSE

- How do the mechanics of fluency fit within the defined components of fluency?
- Does this listing of fluency mechanics match how you currently assess and teach fluency?
- Can you identify a student who demonstrates these mechanics in a skillful way? Have you worked with a student who struggles with any of these mechanics?



Reading fluency has long been acknowledged as an essential ability to support comprehension and motivate engagement in the act of reading.

The Role of Reading Fluency

Now that we have addressed the components and mechanics of fluency, let's turn our attention to *why* we should be concerned about fluency. What role does fluency play in the overall task of reading? Reading fluency has long been acknowledged as an essential ability that readers must develop to facilitate comprehension and motivate engagement in the act of reading (cf., Duke, Pressley, & Hilden, 2004; Fuchs, Fuchs, Hosp, & Jenkins, 2001; Hintze, Callahan, Matthews, Williams, & Tobin, 2002; Shinn, Good, Knutson, Tilly, & Collins, 1992). In fact, Rasinski, Reutzel, Chard, & Thompson (2011) cite references in professional literature to the importance of reading fluency as early as 1886!

Now, in the twenty-first century, most of the United States has adopted the Common Core State Standards (CCSS), or they use a state-specific version of them. These standards place a significant emphasis upon comprehension and, therefore, fluency (Common Core State Standards Initiative, 2010). There is a general consensus that the CCSS significantly raises the bar for students' performance in key academic areas, including literacy in English language arts as well as history/social studies, science, and technical subjects. For example, students will need to demonstrate that "they can comprehend and evaluate complex texts across a range of types and disciplines, and construct and provide effective arguments, orally and in writing, that convey intricate or multifaceted information" (CCSSI, 2010, p. 7). According to CCSSI guidelines, students who meet the standards will be able to "readily undertake the close, attentive reading that is at the heart of understanding and enjoying complex works of literature." (CCSSI, 2010, p. 3). So what is the role of fluency in helping every student meet the Common Core Standards? The answer can be found in the analogies that follow.

Fluency Analogies

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 high-frequency words and build a large number of words that can be recognized instantaneously (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 we use to describe the role of fluency is a “doorway” that leads to comprehension and increased motivation. If that “fluency door” is closed, then access to the meaning of print and the joy of reading remains effectively blocked. When the fluency door opens—that is, when a reader has developed sufficient fluency skills to read with appropriate accuracy and at a reasonable rate—then the reader can “enter” into understanding and motivation. Once that doorway has been opened, students can begin to access meaning even though they must also be taught vocabulary and comprehension strategies. However, if that fluency doorway is not open (because of inadequate levels of accuracy and rate), providing students with vocabulary and comprehension instruction will prove ineffective in helping them fully benefit from and enjoy the reading process.



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.

QUICK RESPONSE

- Does the bridge or doorway analogy fit your understanding of the role of fluency in reading?
- Can you think of a different way to conceptualize the role of fluency?
- Have you seen evidence of Dr. Stanovich's observation that "the rich get richer and the poor get poorer" in your classroom?
- Does this phenomenon apply to other areas besides fluency? Provide some examples.
- How does the idea that "avid" readers increase their verbal intelligence affect your thinking about students' needs?

Weak fluency skills can impede vocabulary development and comprehension in a process that Dr. Keith Stanovich (1986) famously referred to as the "Matthew effect." The term is taken from a Biblical passage describing the phenomenon that "the rich get richer and the poor get poorer." Stanovich applied this concept to struggling readers who, early in the process of learning to read, begin to lag behind their peers.

In subsequent years, these students often fall even further behind because they simply read far less text. The good readers get "richer" because they are reading significantly more text than their less capable peers and thus deepening their decoding and word-recognition skills, strengthening their automaticity, and increasing their vocabulary (Cunningham & Stanovich, 1998). Students' ability to become fluent readers significantly depends on learning to identify accurately large numbers of words by sight. Because words do not become sight words until they are read correctly many times, both inaccurate reading and minimal reading practice slow the development of fluency in beginning readers, often initiating a devastating cycle of failure (Torgesen, 2004).

Cunningham and Stanovich (1998) found that the act of reading helps create motivated or "avid" readers. Their data indicate that students who read a lot (which they defined as reading at the 98th percentile in the amount of independent reading) enhanced their verbal intelligence—that is, extensive reading actually made these students smarter! (Note: We will discuss how to design and deliver the effective instruction that helps students develop fluency skills in Chapter 3.)



Weak fluency skills may result in a "Matthew effect" (Stanovich, 1986) in which strong readers get "richer" while weak readers become "poorer" in subsequent years.

Brain Processes Involved in Fluent Reading

In the brain of a fluent reader, the various components and underlying mechanics 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). For example, fluent phoneme segmentation (being able to identify and separate all the sounds in a word) and phoneme blending (putting individual, separate sounds together to form a word) support decoding fluency, and decoding fluency contributes to a student's ability to gain access to larger units in words that form spelling patterns or word families (phonograms, rimes, and affixes).

Accuracy, Rate, and Working Memory

The human brain processes information, such as the images in printed text, using 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.

Of course, the brain must receive information that is reasonably accurate to promote accurate comprehension. Thus 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 other words, fluent reading (i.e., reasonably *accurate* reading at an appropriate *rate* with suitable *expression*) facilitates and supports comprehension.

Comprehension can also be impaired if too much comes into the brain at once, or if it comes in too rapidly. The working memory becomes overloaded and cannot process the information. 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. Because of these limitations, a *rate* of reading that is appropriate to the task—neither too fast nor too slow—must be strategically utilized by the reader to facilitate comprehension. And 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.

FURTHER READING

Dehaene, S. (2009). *Reading in the brain: The new science of how we read*. New York, NY: Penguin Group.

Ehri, L. C. (2005). Learning to read words: Theory, findings, and issues. *Scientific Studies of Reading*, 9, 167–188.

Kuhn, M. R., & Stahl, S. A. (2003). Fluency: A review of developmental and remedial practices. *Journal of Educational Psychology*, 95, 3–21.

Montgomery, J. (2002). Understanding the language difficulties of children with specific language impairments: Does working memory matter? *American Journal of Speech-Language Pathology*, 11, 77–91.

Pikulski, J. J., & Chard, D. J. (2005). Fluency: Bridge between decoding and comprehension. *The Reading Teacher*, 58 (6), 510–519.

Swanson, H. L., & O'Connor, R. (2009). The role of working memory and fluency practice on the reading comprehension of students who are dysfluent readers. *Journal of Learning Disabilities*, 42 (6), 548–575.

QUICK RESPONSE

- How does the working memory rely on the components of accuracy and rate?
- How is automaticity achieved?
- How does automaticity affect comprehension and motivation?
- Describe how this concept may apply to other skills besides fluency.

Automaticity

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 with the mechanics of reading 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 to simply decoding and recognizing words. Therefore the mental resources remaining, which are required for attention and processing information, are limited and comprehension is thereby impaired. In turn, it is unlikely that those readers who are working 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. This allows and encourages effortless and pleasurable reading. Automaticity results from the development of many different component skills, as previously discussed (including phoneme awareness, grapheme knowledge, phonics, orthographic knowledge, and sight words). These skills work together to support fluent reading because the area of the brain where visual patterns of letters and words are stored connects directly with the part of the brain where meaning resides (Adams, 2011). In short, when we are visually proficient with written language, meaning can be instantly accessed while reading.

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, the *accuracy* of reading, 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 et al., 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).

QUICK RESPONSE

- How should a teacher be thinking about accuracy and rate when working with most students in kindergarten and early Grade 1?
- How do needs change for older students?



As students move through the developmental stages of reading, the role of two key components of fluency—accuracy and rate—changes.



Recent findings and the Common Core State Standards indicate the importance of providing high-quality instruction in reading fluency.

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

Current Thinking About Reading Fluency

In 1997, the Congress of the United States charged the National Institute of Child Health and Human Development (NICHD) to convene a national panel to assess the status of research-based knowledge regarding what skills need to be addressed to teach children how to read. The panel considered, discussed, and debated several dozen topics and ultimately settled on these five skills for intensive study: phonemic awareness, phonics, fluency, vocabulary, and comprehension.

The National Reading Panel (NRP) authors stated in the section of their report dedicated to reading fluency: “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). This strongly worded proclamation was likely felt as a slap on the wrist to some classroom teachers, and to others, a wake-up call. Some believe that educators may have overreacted to this statement and are now mistakenly overemphasizing the *rate* component of fluency in their reading instruction while neglecting the skills necessary to become an *accurate* reader! As we have learned, both components are necessary for fluency.

The Common Core State Standards that have been widely adopted across the United States specifically address fluency in their English/Language Arts standards (Common Core State Standards Initiative, 2010). The fluency standard for kindergarten requires that by the end of the academic year students be able to read emergent-reader texts with purpose and understanding (as they also develop skills and understandings in print concepts, phonological awareness, phonics, and word recognition). For students in Grades 1–5, the standards call for students to read with sufficient accuracy and fluency 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.

Scenarios

To help make effective and useful the various aspects of how to understand, assess, and teach reading fluency, we have created scenarios involving two teachers, one at elementary level and the other at secondary level. We hope these scenarios will help you apply the assessment and instructional strategies and procedures that we will outline in Chapters 2–4.

As you read, compare their thinking, challenges, and problem-solving processes with your own. What similarities or differences exist between the steps these teachers follow and ones you might choose? Please meet Jennifer Smith and Kenneth Lee.

Jennifer Smith, Second-Grade Teacher

Jennifer Smith teaches second grade. This is her fourth year of teaching, and she is excited about the upcoming year. Jennifer has twenty-nine students assigned to her classroom, and she is looking forward to meeting them all. She knows that two of her students have IEPs for learning disabilities and will spend part of each school day receiving targeted instruction from the school’s special education teacher. Five of her students have been identified as English Learners. They will be assessed by the ESL teacher at the start of the year to see if they require additional support for their English development.

One of the things that concerns Jennifer is the fact that this year her school—like all the schools in her district—will be implementing an RTI (Response to Intervention)/MTSS (Multi-Tiered Support System) service delivery model. Along with her colleagues, she attended several workshops on RTI/MTSS last year and feels reasonably comfortable that she understands some of the “Big Ideas” about the purpose of RTI/MTSS and how it will affect the way she teaches her students.

Jennifer also knows that one change coming with RTI/MTSS is the mandated use of new assessments, some of which involve assessing “oral reading fluency.” She is a bit confused about how these assessments work. The assessments were described to her as 60-second assessments of oral reading on unpracticed passages. She wonders, “Why is *fluency* being targeted instead of *comprehension*? Is speed really more important than how well students understand what they are reading?” She worries that these assessments will take a lot of time and that the results will not be particularly useful to her. However, in years past some of her students definitely struggled with fluency, so she is hopeful that by working together in this new model, even more of her students will leave second grade as confident and skillful readers.



Ms. Smith worries that mandated assessments will consume substantial time and fail to provide useful results.



To facilitate students' access to written materials, Mr. Lee takes into account his students' skill profiles when planning instruction for his middle school history class.

Kenneth Lee, Eighth-Grade Teacher

Kenneth Lee is an eighth-grade history teacher. One of his greatest challenges is that many of his students struggle with reading. As a result, they have great difficulty with the written materials he uses in his classroom. These students are also very hard to motivate. By the time students reach eighth grade and enter his classroom, many of them are deeply turned off by school, by reading, and by learning in general. Not surprisingly, they often have some challenging behavior problems.

Kenneth suspects that many of these students were eager to become good readers when they entered school, but with years of failure behind them, many have simply given up. Although they likely tried to learn to read better, reading has remained difficult, and difficult tasks are never pleasant tasks. Kenneth has two main goals for his struggling students: (a) to enjoy being in his class because they are engaged and learning new, interesting content, and (b) to improve their word analysis skills and vocabulary.

The middle school where Kenneth teaches has worked hard for years to provide appropriate instruction to their low-level readers. Kenneth knows that many of his lowest-performing students are receiving small-group reading instruction in a reading lab, and he collaborates regularly with the reading teacher and the reading coach to understand which skills have been targeted as problematic from the results of diagnostic assessments. This information is crucial to his planning for differentiating instruction in history class. To facilitate students' access to written materials, he takes into account his students' skill profiles and plans accordingly. Recently, Kenneth noticed that many of his students were having difficulty with accuracy and rate. He wonders, "What can an eighth-grade history teacher do to help students with these kinds of reading difficulties?"

In the next three chapters we will provide some answers to these teachers' concerns.

Summary

Fluency plays a complex and essential role in the overall task of reading. The components of accuracy, rate, and prosody (or expression) contribute to a reader's ability to understand what is being read and to enjoying the process of reading. The relative significance of accuracy, rate, and expression to reading success varies depending on the purpose of the reading task.

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.

In the next chapter, we will look at how to efficiently and effectively collect data needed to identify which students might need help with their reading, how to diagnose a specific fluency concern, and how to use quick assessments to determine whether a student is making progress once instruction has started.

REFLECT AND PLAN

Work individually or in small groups to discuss these planning points. Record notes or decisions in the space provided or on separate sheets of paper.

1. Why is it important for grade-level teams to share a common definition of reading fluency? How does the authors' definition compare with previous ideas you had about reading fluency and how it must be taught?
2. How can teachers avoid the trap of teaching reading fluency as a rate (speed) issue?
3. How does your school identify and assist nonfluent readers? Are your approaches the same for both younger (K–1) and older (1.5–12) students? According to current thinking about how reading fluency develops, what adjustments or improvements might be necessary to best serve the needs of all your school's students?