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Teaching Reading

A PLAYBOOK FOR DEVELOPING SKILLED
READERS THROUGH WORD RECOGNITION
AND LANGUAGE COMPREHENSION

GRADES PreK–6

Fisher & Frey

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How Reading Develops

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In this module, we will

- Examine reading development through word recognition and language comprehension.

- Discuss the role of constrained and unconstrained reading skills in reading development.

- Review the role of metacognition in reading development.

We'll start with a poem by poet, author, and lecturer Francis Ellen Watkins Harper (1812–1911), who was the first African American woman to publish a short story. Throughout her life she fought for the freedom of equal rights, job opportunities, and education for all.

Very soon the Yankee teachers
Came down and set up school;
But, oh! how the Rebs did hate it,—
It was agin' their rule.

Our masters always tried to hide
Book learning from our eyes;
Knowledge didn't agree with slavery—
'Twould make us all too wise.

But some of us would try to steal
A little from the book,
And put the words together,
And learn by hook or crook.

I remember Uncle Caldwell,
Who took pot-liquor fat
And greased the pages of his book,
And hid it in his hat.

And had his master ever seen
The leaves up on his head,
He'd have thought them greasy papers,
But nothing to be read.

And there was Mr. Turner's Ben,
Who heard the children spell,
And picked the words right up by heart,
And learned to read 'em well.

Well, the Northern folks kept sending
The Yankee teachers down;
And they stood right up and helped us,
Though Rebs did sneer and frown.

And, I longed to read my Bible,
For precious words it said;
But when I begun to learn it,
Folks just shook their heads,

And said there is no use trying,
Oh! Chloe, you're too late;
But as I was rising sixty,
I had no time to wait.

So I got a pair of glasses,
And straight to work I went,
And never stopped till I could read
The hymns and Testament.

Then I got a little cabin—
A place to call my own—
And I felt as independent
As the queen upon her throne.

Source: Watkins Harper (n.d.)

What happened for you as your eyes processed the words? Did you have an emotional reaction? Did you make connections and see faces of students you've taught? Did you think about all the processes that occurred in your brain that allowed you to take those little squiggly lines from the page and make meaning of them? That's reading. It's an impressive set of skills that you just mobilized to make sense of the message.

You weren't born reading. Your brain was taught to read, just like every other brain that reads. Unfortunately, there is no reading gene that is passed from one generation to the next. Experimental psychologist Steven Pinker notes that while "children are wired for sound[,] . . . print is an optional accessory that must be bolted on" (Pinker, 1999, p. ix).

Every brain needs to be taught to read.

Every brain needs to be taught to read. And over the past 100+ years, there have been hundreds of thousands of studies that together compose a science of reading. As Pearson and Tierney (2021) noted, there are waves of research as educators and researchers strive to understand this complex cognitive skill that serves as a gateway to all other learning.

Read each statement and mark **T** if you think the statement is true and **F** if you think the statement is false. As you read through the module, you might change your responses. Be prepared to explain your responses and use the text for evidence.

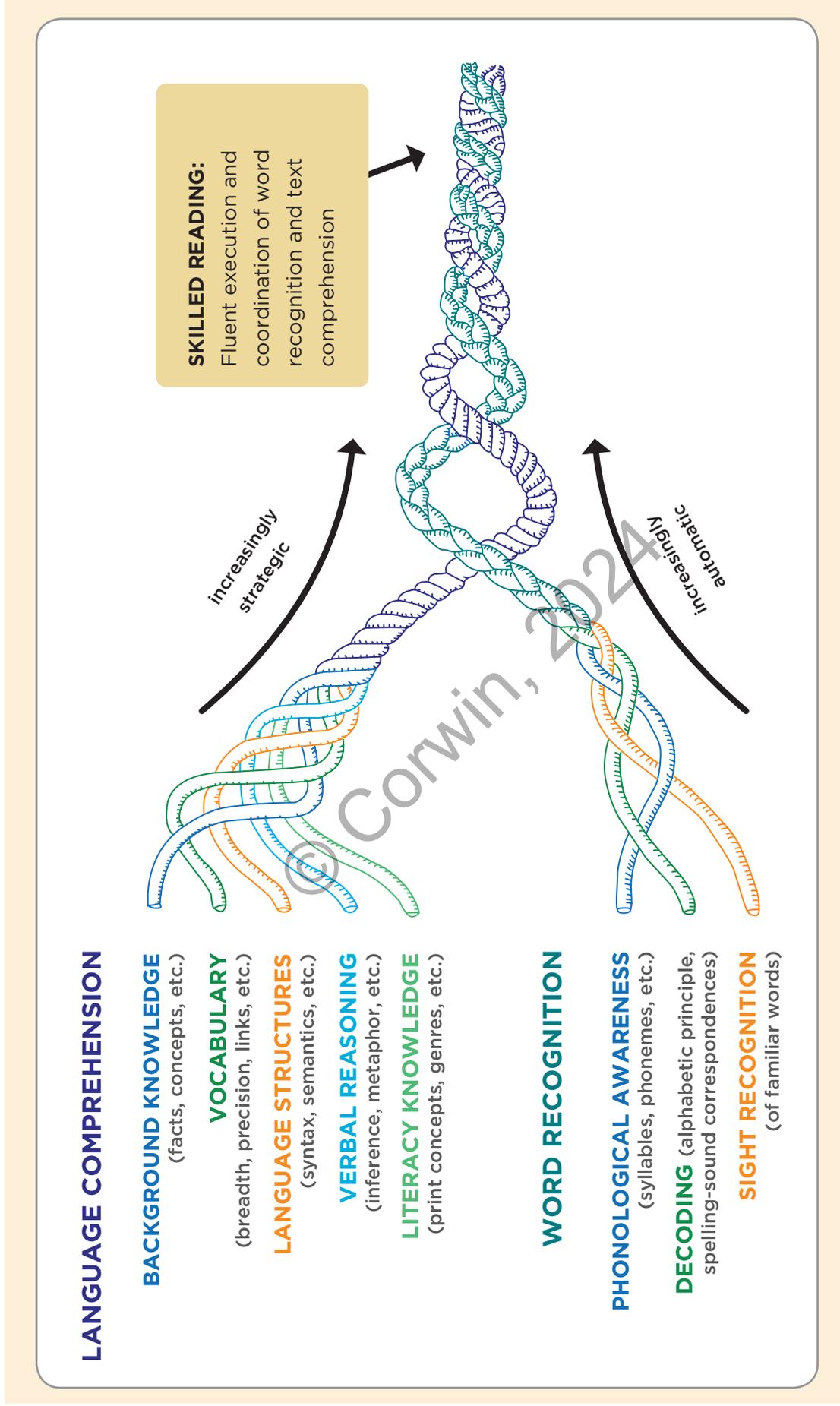| Before Reading	Statements	After Reading
T F	1. Word recognition skills must be mastered before language comprehension can be effectively taught.	T F
Why did you indicate true or false?		Has your thinking changed after reading?
T F	2. Constrained reading skills are easier to assess because they have a finite ceiling.	T F
Why did you indicate true or false?		Has your thinking changed after reading?
T F	3. Metacognition is an important skill for strategic readers to master.	T F
Why did you indicate true or false?		Has your thinking changed after reading?

"The Reading Rope"

Hollis Scarborough, a cognitive developmental psychologist who cheerfully reminds people that "I never taught anybody to read," worked throughout the 1980s on a longitudinal study of preschoolers who were at risk for later reading difficulties. As a researcher, one of her responsibilities was to disseminate results to the field. In preparation for professional meetings, she conducted a review of the research on reading and drew a visual for her audiences to capture the existing research (see Figure 1.1). True to her developmental orientation, she also wanted to portray how reading changes over time. The "reading rope," as it is affectionately known, began its life in 1991 as a handout!

The reading rope should not be misinterpreted as either a curriculum or an instructional framework.

As Scarborough (2001) noted, there are strands that are each important and are represented within the two major skill bundles of language comprehension and word recognition. (See Figure 1.2 for our adaptation of the rope; italicized labels on the left indicate where we propose adding new strands.) It's important to note that strands within each bundle are intertwined to illustrate the increasing consolidation of skills needed for strategic and automatic processes to support children becoming skilled readers. To accomplish this, a future reader must develop all strands and mobilize them together. Importantly, one strand is not more important than the others, and the strands themselves do not represent a developmental sequence. In other words, the reading rope should not be misinterpreted as either a curriculum or an instructional framework. Rather, it is a visual metaphor to represent the theoretical research on reading.
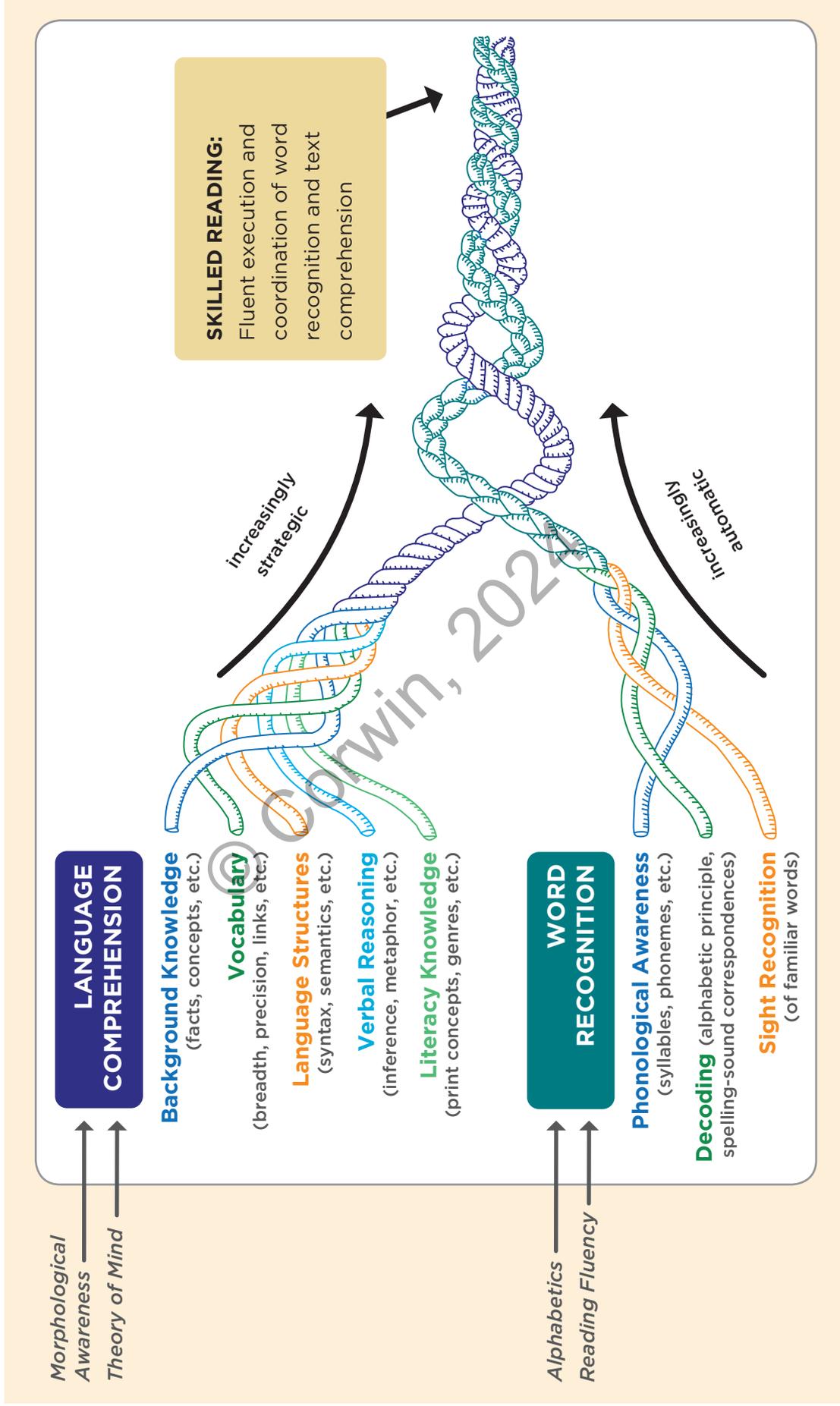
Figure 1.1   Scarborough's Reading Rope

LANGUAGE COMPREHENSION

BACKGROUND KNOWLEDGE
(facts, concepts, etc.)

VOCABULARY
(breadth, precision, links, etc.)

LANGUAGE STRUCTURES
(syntax, semantics, etc.)

VERBAL REASONING
(inference, metaphor, etc.)

LITERACY KNOWLEDGE
(print concepts, genres, etc.)

WORD RECOGNITION

PHONOLOGICAL AWARENESS
(syllables, phonemes, etc.)

DECODING (alphabetic principle,
spelling-sound correspondences)

SIGHT RECOGNITION
(of familiar words)

SKILLED READING:
Fluent execution and coordination of word recognition and text comprehension

increasingly
strategic

increasingly
automatic

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Figure 1.2   Suggested Modifications of the Reading Rope

Morphological Awareness
Theory of Mind

LANGUAGE COMPREHENSION

Background Knowledge (facts, concepts, etc.)

Vocabulary (breadth, precision, links, etc.)

Language Structures (syntax, semantics, etc.)

Verbal Reasoning (inference, metaphor, etc.)

Literacy Knowledge (print concepts, genres, etc.)

increasingly strategic

SKILLED READING: Fluent execution and coordination of word recognition and text comprehension

increasingly automatic

WORD RECOGNITION

Phonological Awareness (syllables, phonemes, etc.)

Decoding (alphabetic principle, spelling-sound correspondences)

Sight Recognition (of familiar words)

Alphabetics
Reading Fluency

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As Scarborough noted in the interview,

> Being strong on the lower strands affords more opportunities to acquire knowledge of the upper strands, and being strong on the upper strands has been shown to enable faster and more accurate decoding of unfamiliar words. Therefore, if any of the strands gets frayed, it can hold back development of the other strands and by extension can eventually weaken the entire rope. (University of Florida Literacy Institute, 2020)

Although we appreciate what this visual infographic accomplishes in its attempt to convey the complexities of reading, it doesn't fully reflect the waves of reading research that have continued since its publication two decades ago. Our adaptation to the original rope offers an expansion on Scarborough's work. First, we added *alphabetics*. It was previously part of decoding, and certainly recognizing letters is an important aspect of decoding. But our collective knowledge about alphabetics has grown, and readers need to understand so much about this that we elevated it. This is especially true for English learners who use other writing systems, such as those of Arabic, Georgian, or Mandarin. In addition, we have added *reading fluency* and included it in the word recognition bundle, because the goal of fluency instruction is to increase automaticity. The volume of research on fluency has grown considerably since the original publication of the reading rope and demands further attention.

In terms of language comprehension, we have added *morphological awareness* given the significant amount of research on this topic that has been conducted in the past 20 years. We have also included *theory of mind*, a newer area of literacy research that suggests readers need to develop an understanding of others' mental states, such as beliefs, intents, desires, emotions, and knowledge, if they are to deeply understand the texts they read.

Language comprehension is the focus of the upper bundle. Readers use their understanding of print concepts and their background knowledge, vocabulary, language structures, verbal reasoning, and literacy knowledge to read and understand the text. These language comprehension skills become increasingly *strategic* through instruction, experience, and practice. In the lower bundle, the focus is on word recognition. This involves a student's understanding and use of phonological awareness, alphabetics, and decoding, as well as their recognition of sight words and fluency. These word recognition skills become increasingly *automatic* through instruction, experience, and practice.

However, we must address the shortcomings that this visual infographic, albeit updated to reflect newer research, still holds. It can be tempting to view the rope as a recipe of ingredients. Wexler (2022) notes that it can lull educators into a sense of complacency, failing to fully challenge current instructional practices. The point of reading is to understand. Word recognition is crucial and cannot be minimized. But for reading to be fully realized, there must be a relentless focus on comprehension, not as a mere collection of ingredients but as a series of chemical reactions. The chemistry of reading comprehension requires building background knowledge (not just activating it), motivation (not just the hope that it will emerge), analytic thinking, and persistence to move forward when the text gets hard.

Reading comprehension is a science, and one that requires skill to develop among readers. We encourage you to read deeply and reflect on the modules that highlight each of these strands. They are not discrete items in a grocery store to be either selected or left on the shelf. Appreciate the chemical reactions that happen as a result of ingredients coming in contact with one another.

NOTICE AND WONDER

Review our adaptation of the reading rope. Note that each strand is one component of reading and that the strands combine into two bundles that are braided together into the rope.

What are you noticing about the various strands?

_____

_____

_____

Which strands are strong in your classroom?

_____

_____

_____

Which strands need more attention or are not yet clear to you?

_____

_____

_____

Untangling *Skill*, *Skilled*, and *Strategic*

Look at the reading rope visual again. There are two arrows intended to represent change over time. The lower one is labeled "increasingly strategic" while the upper one is labeled "increasingly automatic." The latter is more straightforward in that there is widespread and consistent usage of the term *automaticity*. Automaticity refers to smooth and effortless word recognition and was described by LaBerge and Samuels (1974) as the way print is processed in the brain. The braiding of the word recognition strands of the reading rope reflects the notion that the skills of phonological awareness, alphabetics, decoding, and sight recognition work together in increasingly efficient ways to make this dimension of reading more fluent. It is an essential part of the journey to becoming a *skilled* reader.

> **The goal is to develop *skilled* readers— those who deploy the strategies they have learned with great automaticity.**

However, the second term, *strategic*, is more problematic. Educators often informally use the terms *skill* and *strategy* interchangeably. Afflerbach et al. (2008) took on this topic and noted that

> Reading *strategies* are deliberate, goal-directed attempts to control and modify the reader's efforts to decode text, understand words, and construct meanings of text. Reading *skills* are automatic actions that result in decoding and comprehension with speed, efficiency, and fluency and usually occur without awareness of the components or control involved. (p. 368; emphasis added)

As reading develops, the ability to be strategic (solve problems) while moving smoothly and accurately through text (automatic) consolidate into a tight process. To our thinking, the goal is to develop *skilled* readers—those who deploy the strategies they have learned with great automaticity. In other words, they have developed habits they use almost without thinking about them. And, when texts are complex, they revert to known strategies to regain meaning. Our desired outcome is the development of skilled readers. In order to accomplish this, we teach reading skills such that a reader can use them strategically when reading is a challenge.

WHAT'S YOUR ADVICE?

How might you respond to a colleague who says that literacy develops naturally in children or that there is no need to teach students to map sounds onto letters?

_____

_____

_____

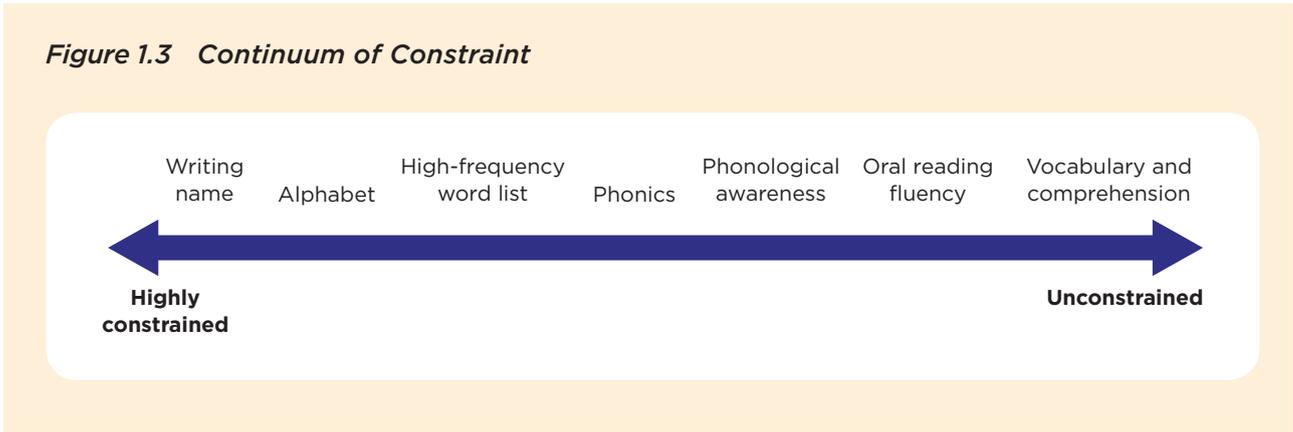# Constrained and Unconstrained Reading Skills

Now let's go more deeply into a discussion of reading skills. Reading researcher Scott Paris (2005) described a variety of reading skills across a continuum from *constrained* to *unconstrained*. Constrained reading skills are those that have boundaries or upper limits. Some reading skills, such as phonemic awareness, alphabetics, grapheme-phoneme correspondences, basic print concepts, and oral reading fluency, are constrained reading skills, because they have a finite point at which they are learned. For instance, there are 44 phonemes in English and 26 letters. As well, there is a finite number of letter combinations that represent the sounds. And there is a limit as to the rate of reading one can sustain without sacrificing accuracy and meaning. Because these skills are constrained, we can count them, and as such they are more easily measured. There also are some of foundational reading skills that readers must acquire.

Keep Scarborough's reminder in mind: Strength in one bundle (language comprehension or word recognition) influences and acts upon the other bundle.

However, mastery of these reading skills alone is not the final destination. If it were, we wouldn't need to provide much instruction beyond elementary school. But true reading is much more than accurate word identification. All of us spend a lifetime acquiring what Paris calls the unconstrained reading skills of background knowledge, vocabulary, and comprehension. Unlike constrained skills, unconstrained skills have no endpoint. Your vocabulary is more expansive today than it was five years ago, and your reading comprehension of many topics will be greater and deeper five years from now if you keep reading and learning. As you read and experience life, you're continually adding to your background knowledge, which influences both your vocabulary and your comprehension of text. Notice the continuum of constraints described by Stahl (2011) in Figure 1.3.

Figure 1.3 Continuum of Constraint

| Writing name | Alphabet | High-frequency word list | Phonics | Phonological awareness | Oral reading fluency | Vocabulary and comprehension |

Highly constrained ⟵————————————⟶ **Unconstrained**

Source: Stahl (2011).

So effective reading instruction involves both constrained and unconstrained skills development. No responsible teacher would limit attention to constrained skills while ignoring vocabulary and reading comprehension. But once the constrained skills are learned, there is no additional benefit to continuing to teach them. Therefore, attention to constrained skills instruction fades as students acquire them. Unfortunately, there are older students who have yet to automate these constrained skills and continue to require instruction to build the skills needed to read texts that are appropriate for them. As students master the constrained skills, vocabulary and reading comprehension take an even more dominant role. However, keep Scarborough's reminder in mind: Strength in one bundle (language comprehension or word recognition) influences and acts upon the other bundle.

FIND THE MISTAKE

A list of constrained and unconstrained skills was developed, but there are errors in it. Identify which of the following should not be in each column.

Constrained Skills	Unconstrained Skills
• Letter recognition	• Vocabulary
• Print concepts	• Comprehension
• Oral language	• Syntax
• Phoneme awareness	• Morphology
• Grapheme-phoneme correspondences	• Background knowledge
• Verbal reasoning	• Critical analysis
• Sight word recognition	• Inference
	• Author's craft

Which errors did you identify? _____

_____

Why are these incorrect? _____

_____

Metacognitive Strategy Use in Reading

We can't leave this opening module on skilled reading without discussing the importance of metacognition in reading. Metacognition is evidenced through reflection and decision-making about the strategies deployed by a reader, such as pausing to reflect, being aware of their personal perspectives, or engaging in retrospection by looking backward at past events in the story. The ability to reflect upon and think about one's thinking and monitor one's thinking are essential for learning (e.g., Flavell, 1979).

The ability to reflect upon and think about one's thinking and monitor one's thinking are essential for learning.

The term *metacognition* means "above cognition" and works in parallel to the skills and knowledge (cognition) needed to complete complex tasks. And reading for understanding, to be sure, is a complex task. A reader with a high degree of metacognitive awareness approaches reading as a conscious act and recognizes that they are in command of their own understanding. Metacognitive readers don't view the act of reading as simply moving their eyes down line after line of the text. They reflect, monitor their thoughts and understanding, summarize along the way, generate questions and images, and so on. They notice when they have lost meaning and manage their strategies to recover meaning. Much like a master craftsperson, these readers not only have a full toolbox, but they are also able to select the right tool to accomplish the goal.

Importantly, strategy use is not limited to older students or only for comprehension. Imagine the young child who is trying to blend sounds or chunk word parts to decode text. They must be taught strategies and then use those strategies. Students learn strategies to predict long versus short vowels, for example. Again, it's the repeated application of the strategies that is so important.

TAKE ACTION

Consider the following strategies of highly effective readers, and then analyze the reading behaviors of your students. Which of these need to be further developed in students? Do you have a plan to model these for students? Do you have a way to monitor students' progress in developing metacognition? In the modules of the language comprehension bundle, we'll explore these strategies further.

Strategy	Definition
Activating	"Priming the cognitive pump" in order to recall relevant prior knowledge and experiences from long-term memory in order to extract and construct meaning from text
Inferring	Bringing together what is spoken (written) in the text, what is unspoken (unwritten) in the text, and what is already known by the reader in order to extract and construct meaning from the text
Monitoring-Clarifying	Thinking about how and what one is reading, both during and after the act of reading, for purposes of determining if one is comprehending the text combined with the ability to clarify and fix up any mix-ups

Strategy	Definition
Questioning	Engaging in learning dialogues with text (authors), peers, and teachers through self-questioning, question generation, and question answering
Searching-Selecting	Searching a variety of sources in order to select appropriate information to answer questions, define words and terms, clarify misunderstandings, solve problems, or gather information
Summarizing	Restating the meaning of text in one's own words—different words from those used in the original text
Visualizing-Organizing	Constructing a mental image or graphic organizer for the purpose of extracting and constructing meaning from the text

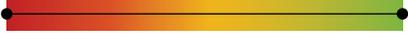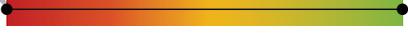Source: McEwan (2007).

TEXT-TO-SELF CONNECTION

Now consider your own knowledge of reading development as it applies to your students. What in this module was confirming for you? What new information did you add to your conceptual understanding of reading development? Fill in the table below to record your top two confirmations and top two instances of new knowledge gained from this module.

Confirming Knowledge in the Reading
1.
2.
New Knowledge From the Reading
1.
2.

The subsequent modules are organized broadly around the reading rope, as it serves as a great visual metaphor to discuss the literacy field's continuously deepening knowledge base of how to teach children to become skilled readers. Before moving forward, take a few minutes to reflect on your current practices in reading instruction. The next five modules will focus on the word recognition bundle, while the subsequent seven modules will discuss dimensions of the language comprehension bundle. How would you describe your level of confidence in your knowledge of instructional practices for each of these topics? Use your reflection as a guide for your playbook plan.

(Continued)

(Continued)

Using the traffic light scale, with red being not confident, yellow being somewhat confident, and green indicating very confident, how confident are you in your ability to teach toward these topics?
Word Recognition Strands
Module 2: Phonological Awareness
Module 3: Alphabetics
Module 4: Phonics and Decoding
Module 5: Sight Word Recognition
Module 6: Reading Fluency
Language Comprehension Strands
Module 7: Background Knowledge
Module 8: Vocabulary Knowledge
Module 9: Morphological Awareness
Module 10: Text and Language Structures
Module 11: Literacy and Text Knowledge
Module 12: Verbal Reasoning
Module 13: Theory of Mind

Takeaways

- Reading is a complex process, and each brain needs to be taught to read, because there is no reading gene that is passed down from one generation to the next.

- Readers need to develop their automatic and strategic processes.

- There are two major bundles of strands, word recognition and language comprehension, that are braided together to develop skilled readers.

- Some skills have a ceiling, meaning that there isn't more to learn once the content is mastered. There are other skills that continue to develop across the life span.

PS: The answers to the anticipation guide are F, T, T.