

## Study Guide

# BrainWords

How the Science of Reading Informs Teaching



J. Richard Gentry

Gene P. Ouellette

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## Summary

The past two decades have brought giant leaps in our understanding of how the brain works. But these discoveries and their exciting implications have yet to make it into most classrooms.

With the concise and readable *Brain Words*, you will learn how children’s brains develop as they become readers and discover concrete steps to promote this critical developmental passage.

Introducing their original, research-based framework of “brain words”—dictionaries in the brain where students store and automatically access sounds, spellings, and meanings. In *Brain Words*, the authors offer a wealth of information that will transform your thinking and practice:

- Up-to-date knowledge about reading and neurological circuitry, including evidence that spelling is at the core of the reading brain
- Tools to recognize what works, what doesn’t, and why
- Practical classroom activities for daily teaching and student assessment
- Insights about what brain research tells us about whole language and phonics-first movements
- Deepened understanding of dyslexia through the enhanced lens of brain science

With the insights and strategies of *Brain Words*, you can meet your students where they are and ensure that more of them read well, think well, and write well.

The following are suggestions to help groups of educators read, discuss, and extend the ideas from *Brain Words* to their classrooms. These ideas will come to life as teachers put them into practice with students. With that in mind, we have developed discussion questions, pulled provocative quotes, and provided professional development ideas from each chapter to facilitate reflection on the text.

The format of the study guide is designed to support a study group of teachers, but it can also be used individually as a reflective structure for those reading the book alone. The suggestions offered in the guide are designed to foster collaboration, spark new thinking, and support the transfer of new ideas into the classroom.

## Chapter 1

### Rethinking Reading Instruction as Building a Dictionary in the Brain

#### Discussion/Sharing

- What are your beliefs around spelling and/or word study instruction?
- What do you hope to take away from this book?

#### Video: Meet Coauthor Richard Gentry

- In this short video coauthor Richard Gentry talks about *Brain Words* and the importance of explicit spelling instruction.
  - <https://www.stenhouse.com/content/brain-words>
- Use a two-column note (What do you notice? / What do you wonder?) to jot down your thinking.

#### Reading Excerpt

- Read the introduction to Chapter 1 (pages 1-5).
- Use a two-column note (What you notice? / What you wonder?) to jot down your thinking as you read.

#### Quotes Worth Discussing

*“When we speak of building a dictionary in each child’s brain, we are referring to building a bank of syllables and words within each child - that includes information on pronunciation, meaning, and critically, spelling. These stored patterns and words referred to by scientists as lexical representations, we refer to here as brain words.”* – page 2

*“Instead of exposing students to print and expecting them to magically become readers, we present words aurally first and then ask students to analyze the sounds they hear. We encourage students to then spell the word how they hear it or how they see it in their mind’s eye in self-directed attempts often referred to as invented spelling.”* – page 4

*“Think of spell-to-read methodology this way: if you can spell it, you can read it.”* – page 5

### **Putting Ideas into Practice**

- What is one idea that you will continue to think about after today?
- What are your beliefs around reading methodology for our youngest learners? Start to jot down your thinking.

## Chapter 2

### How the Scientific Study of Reading Can Inform Teaching

#### Discussion/Sharing

- Where do you stand on “the reading wars”? Do you identify with the decoding group (recently known as “phonics first”), the visual word recognition group (often associated with Whole Word instruction), or are you somewhere in the middle?
- Discuss your beliefs about sight words.

#### Reading Excerpt

- Read the section “The Spell-to-Read Advantage: An Integrated Approach for Teaching Reading” (pages 29-32). This excerpt lays out the spell-to-read teaching method.
- Be sure to read the key point on page 32 that addresses the goal of word study.
- Use a two-column note (What you notice? / What you wonder?) to jot down your thinking as you read.

#### Quotes Worth Discussing

*“We now know that for reading, spelling patterns stored in the brain are a very big deal. If the child can spell a word correctly, she likely can read it with comprehension!”*

– page 19

*“We consider sight words to simply be words that are recognized immediately and without apparent effort, regardless of their spelling pattern. Essentially, the goal is to make all words sight words, by integrating the routes to reading, so that they can be recognized and retrieved automatically from the reading circuitry in a child’s brain. Teaching reading through spelling not only makes these sight words for reading but also makes them automatically available for writing fluency”. – page 26*

*“When we encounter a new word in print, we need to store all three components; there needs to be attention directed to the spelling, the pronunciation, and the meaning.”*

– page 27

### **Toolbox**

- Take a look at the section on page 24, “In the Classroom: The Routes to Reading and Word Walls”.
- What do you notice? What do you wonder?
- How might you be able to integrate this idea with your existing word wall?

### **Putting Ideas into Practice**

- What is one idea that you will think about after today and might try in your classroom?
- Take a few moments to reflect and jot down your thinking.

## Chapter 3

### The Reading Brain

#### Discussion/Sharing

- What wonderings did you have on the reading brain after having read the chapter? What did you notice? What questions do you have?
- Reflect and discuss the section, “Key Point: What We’ve Learned So Far” outlined on page 43.

#### Reading Excerpt

- Read pages 39-41, *Defining the Reading Circuit*.
- Figure 3.2 outlines the language processes in the brain (page 38).
- Use a two-column note (What you notice? / What you wonder?) to jot down your thinking as you read.

#### Quotes Worth Discussing

*“The four discrete lobes of the brain are highly interconnected and integrated yet each is also implicated in distinct functions and behaviors. Although each lobe is associated with its own functions, it should be noted that all four major lobes are involved to some extent when it comes to reading.”* – page 35

*“We are not born with the reading circuit already in place—it requires rich language and literacy experiences to develop to its fullest extent. This is why early childhood experiences, including early education and literacy teaching, are critical—they help shape the reading brain!”*  
– page 37

*“Efficient word reading requires an explicit connection between decoding and sight word reading as the Word Form Area emerges to complete the reading circuit in the brain.”* – page 43

#### Putting Ideas into Practice

- What is one idea that you will continue to think about after today?
- Take a few moments to reflect on your personal learning. Use “What We Have Learned So Far” on page 43 to focus your reflection. Jot down your thinking.



## Chapter 4

### What Works and What Doesn't: A Critical Look at Current Teaching Practice

#### Discussion/Sharing

- What are your beliefs in terms of students learning to read words with automaticity? Where does this fall in order of priority in designing literacy instruction?

#### Reading Excerpt

- Reflect on the section “What Works and What Doesn't: A Critique of Teaching Practice” on pages 48-59. Use a two-column note (What you notice?/ What you wonder?) to jot down your thinking as you read.
- Zoom into pages 53-56, “The Three Cueing System (Including a Caveat for Interpreting Running Records)” for a discussion. The authors write, “When new or difficult words are encountered in context, it is still the letter-sound associations that provide the first and most efficient route to reading, not the meaning or syntax from context.” The authors suggest that perhaps running record priorities should be flipped to highlight how our children are using visual and sound cueing strategies. They write, “If a student encounters an unknown word, does he use letter-sound correspondences or syllable chunking based on phonics to decode the word? Does he use graphophonics to self-correct? By focusing on letter-sound associations first or the child's attempt to decode the word, we create an opportunity to match the spelling to the pronunciation to build a brain word for the next time it is encountered (pages 54-55).”

#### Toolbox

- Take a few moments to reflect on the “Questions to Ask of Your Reading Program” at the end of the chapter (page 61).
- What are your thoughts? Wonderings?

#### Quotes Worth Discussing

*“The truth is that word reading proficiency and the development of automaticity using brain words, the deepest level of complete word representations in the Word Form Area of the brain, should be on the top of everyone's list when it comes to instructional goals.” – page 45*

*“Without efficient word reading, however, the entire process grinds to a halt. In other words, without accurate word reading and a connection between stored words and children’s oral speech and language system, there can be no fluency or comprehension, because both are very much based on successful word reading.” – page 48*

*“There seems to be a missing piece in today’s reading instruction - a comprehensive word reading component that integrates phonological awareness, oral language, the routes to reading, and spelling to promote orthographic learning and the creation of brain words.” – page 60*

### **Putting Ideas into Practice**

- What is one idea that you explored today that you will continue to think about? Are any of your current beliefs challenged or affirmed?
- Take a few moments to reflect and write down your thinking.

## Chapter 5

### Phase Observation for Early Spelling to Read

#### Discussion/Sharing

- What is your stance on spelling instruction? What does it look like and sound like in the classroom?

#### Reading Excerpt

- Read the section “Literacy Development Reflected in Phase Assessment” on pages 65-69.
- Use a two-column note (What you notice? / What you wonder?) to jot down your thinking as you read.

#### Toolbox

- Administer Gentry’s Monster Test of developmental spelling to one of your students.
- Refer to administering and scoring directions on pages 74-78.
- What do you notice? What do you wonder?

#### Quotes Worth Discussing

*“Using phase observation, we can monitor beginning readers’ and spellers’ progression through five developmental phases and use science-based tools to target instruction to help beginners move forward phase by phase on the pathway to literacy.”* – page 63

*“The best differentiator between good and poor readers is repeatedly found to be their knowledge of spelling patterns and their proficiency with spelling sounds translations.”* – Marilyn Adams , – page 65

*“Making the connection between spelling and reading is a transformational concept and a missing link that can lead to better reading and higher test scores.”* – page 84

#### Putting Ideas into Practice

- What is one idea that you explored today that you might try out in your classroom?
- Take a few moments to *reflect* and write down your thinking around next steps.

## Chapter 6

### Spell-to-Read: Building Brain Words in Kindergarten and First Grade

#### Discussion/Sharing

- How might you tweak your current spelling/word study instruction to align to the spell-to-read method to support reading?

#### Reading Excerpt

- Read pages 88–96. These sections outline the spell-to-read methodology for students in kindergarten through first grade.
- Use a two-column note (What you notice? / What you wonder?) to jot down your thinking as you read.

#### Toolbox: Spell-to-Read in Action

- Try out one or more days of spell-to-read with students in kindergarten or first grade
  - What went well? What challenges did you face? What questions do you have?
- Spell-to-Read
  - ❖ Day 1. **Hear-It, Say-It** for all of the week’s words.
  - ❖ Day 2. **Hear-It, Say-It, Spell-It, Read-It, Use-It** for the week’s regular decodable words.
  - ❖ Day 3. **Hear-It, Say-It, Spell-It, Read-It, Use-It** for the week’s irregular and other high-frequency words.
  - ❖ Days 4 and 5. **Hear-It, Say-It, Spell-It, Read-It, Use-It** for a mix of words taken from Days 2 and 3; teacher’s choice and optional assessment.

#### Quotes Worth Discussing

*“A spell-to-read teaching approach promotes and integrates important foundational skills and develops and consolidates the routes to word reading along the various processing areas of the reading brain.” – page 88*

*“Most traditional approaches such as “Look-Say,” rote memory of flash cards, word sorts, and even “phonics-first” begin with visual exposure to the word or to a letter. In contrast, a spell-to-read approach begins with phonological awareness and an auditory analysis of the sound structures.” – page 88*

*“Alternatively you may have a phonics, spelling, or word sort program in the classroom that you can pull words from to compile your weekly word list of regular decodable words. This is especially beneficial if these are words that your students are going to be exposed to in other literacy activities; by using the same words in our spell-to-read lessons, you can help promote a deeper level of processing and knowledge for these words.” – page 100*

### **Putting Ideas into Practice**

- What is one idea that you explored today that you might try in your classroom?
- Take a few moments to *reflect* and write down your thinking around next steps for possibly revamping spelling/words study in your room.

## Chapter 7

### Building Brain Words in Second Through Sixth Grade

#### Discussion/Sharing

- How might you tweak your current spelling/word study instruction to align to the spell-to-read method to support reading?

#### Reading Excerpt

- Read pages 109–112. This section outlines the spell-to-read methodology for students in second through sixth grade.
- Use a two-column note (What you notice? / What you wonder?) to jot down your thinking as you read.

#### Toolbox

- Try Day 1 of the spell-to-read methodology with students in second through sixth grade (refer to pages 109–110). The spell-to-read five-step sequence is compressed, and all steps are encapsulated within a spelling pretest on the first day of a weekly spelling unit.
  - What went well? What challenges did you face? What questions do you have?

#### Quotes Worth Discussing

*“The neurological reading circuit, which was not present at birth, is in evidence by the start of second grade, and is connected to higher-order cognitive functioning such as feelings, language, and thought.”* – page 109

*“It’s important to reiterate that the words second through sixth graders are learning to spell should be words in their own spoken language by the end of this first lesson. In other words, you want to make sure that this is a word they know and can use orally before expecting them to spell it correctly on a final test.”* – page 111

*“Failing to provide a grade-by grade spelling curriculum, and explicit spelling instruction with a stand-alone program for upper-grade students—especially those in high poverty, low performing schools, or schools with many English language learners—is often a missing piece of literacy instruction and a major reason why so many of our students have difficulty with reading. But remember, this isn’t just about spelling. Good spellers tend to be good readers, and many students are poor readers because they can’t spell.”* – page 116

### **Putting Ideas into Practice**

- What is one idea that you explored today that you might try in your classroom?
- Take a few moments to reflect and write down your thinking around next steps for possibly revamping spelling/word study in your room.

## Chapter 8

### Understanding and Supporting Children with Dyslexia in Light of Reading Science

#### Discussion/Sharing

- How might you tweak your current spelling/word study instruction to align to the spell-to-read method to support reading?

#### Reading Excerpt

- Read pages 136-139. This section outlines what science says about interventions.
- Use a two-column note (What you notice? / What you wonder?) to jot down your thinking as you read.

#### Toolbox

- Try Day 1 of the spell-to-read methodology with students identified with dyslexia. Depending on the grade level of students, follow the methodology outlined in Chapter 6 or Chapter 7. What do you notice? What do you wonder?

#### Quotes Worth Discussing

*“Children with dyslexia have less successful decoding and encoding, which directly blocks opportunities for orthographic learning and subsequent automatic recognition of brain words.”*  
– page 128

*“Teach spelling explicitly following the spell-to-read recommendations in this book. Spelling ability and the development of brain words is the locomotive that powers the brain reading.”*  
– page 137

*“Embrace repetition because the brain “loves” repetition for developing automaticity in almost every skill.”* – page 137

#### Putting Ideas into Practice

Now that you have finished the text, what do you see as your next steps? What are your new learnings from this experience? What would you like you try? What do you still wonder? Take a few moments to *reflect* on this experience and write down your thinking.