



Recent Advances in Understanding Word-Level Reading Problems: Implications for Assessment and Effective Intervention

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Meet Our Presenter



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Today's Objectives

1. Understand “sight vocabulary” development & fluency
2. Learn why some children struggle in reading
3. Learn the most effective components for preventing and remediating reading difficulties

Key Terms to Understand this Presentation

- Auditory vs. phonological
- Phonological vs. phonemic
- Orthography and orthographic
- Phonological awareness vs. phonics
- Decoding
 - Word-level reading (or word reading) vs. phonic decoding
- Sight word and sight word vocabulary
 - Also called orthographic lexicon

A Crash Course on How Words are Learned

Two Levels of Word-level Reading Skill Deficits

What distinguishes skilled word readers from poor word readers?

1. The ability to identifying unfamiliar words by sounding them out
2. The ability to remember the words they read

The Alphabetic Principle

- Chinese writing vs. alphabetic writing
- We do not write words!
- We write sequences of characters designed to represent sequences of phonemes in spoken words
- Poor access to the phonemes makes reading alphabetic languages very difficult
- Phoneme skills are needed for BOTH sounding out new words AND remembering the words we read

National Reading Panel (2000) on the role of Phonemic Skills in Word Reading

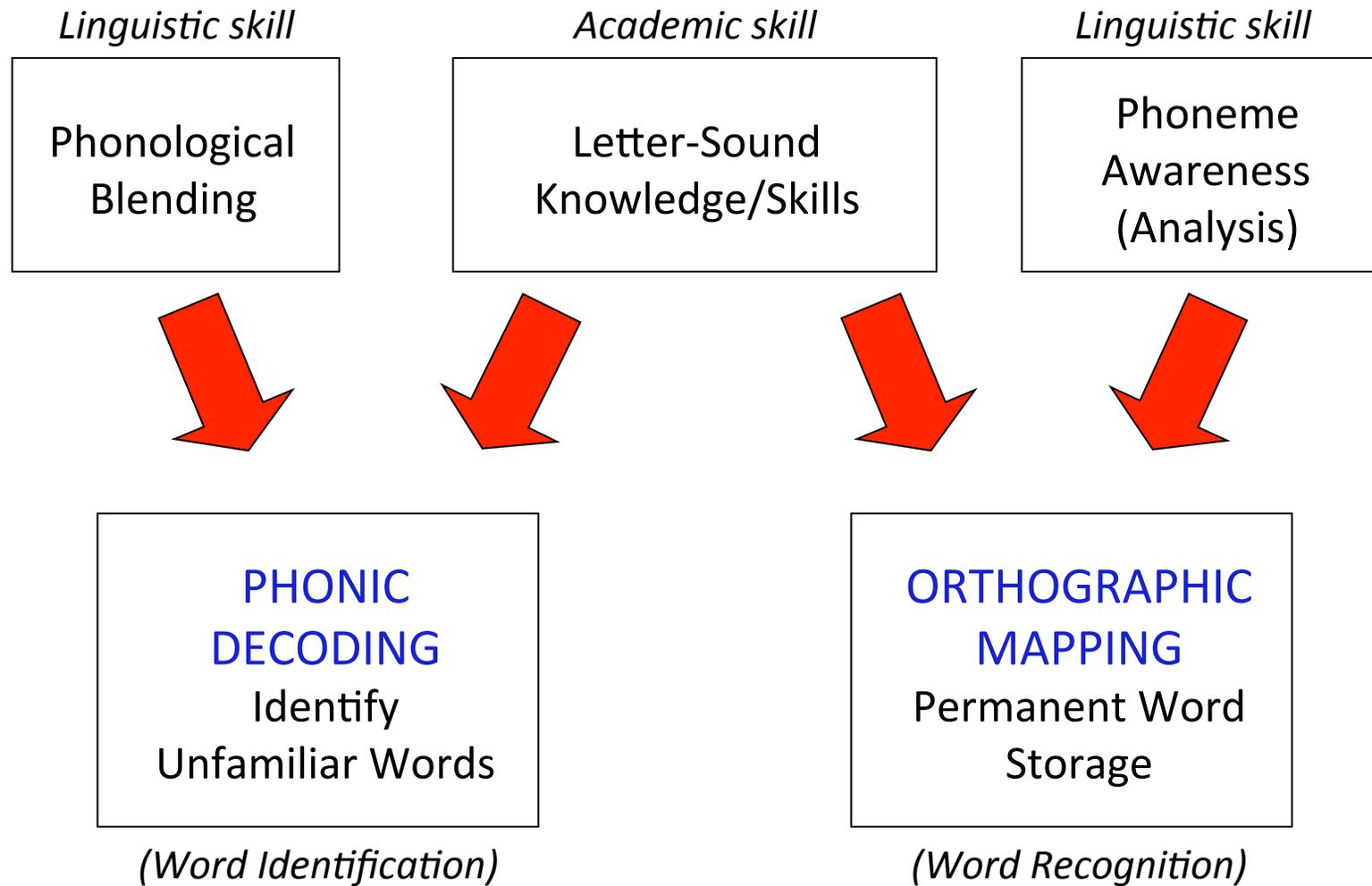
(From Section 2 page 32)

Blending:

“The skill of blending is needed to decode unfamiliar words.”

Segmenting:

“Phonemic segmentation helps children *remember* how to read and spell words . . .” (emphasis added)



The “Problem” with Segmentation

- Not intuitive as to why it is important for reading
 - It is clear why it might help spelling
- We must distinguish between TASKS and SKILLS
 - There are many PA tasks, but only two PA skills are needed
- Phoneme segmentation tasks have limited sensitivity in detecting the level of phoneme skills needed for efficiently remembering words
- Why are manipulation tasks superior for assessment and intervention?

Sight Word Vocabulary is NOT Based on Visual Memory/Visual Skills

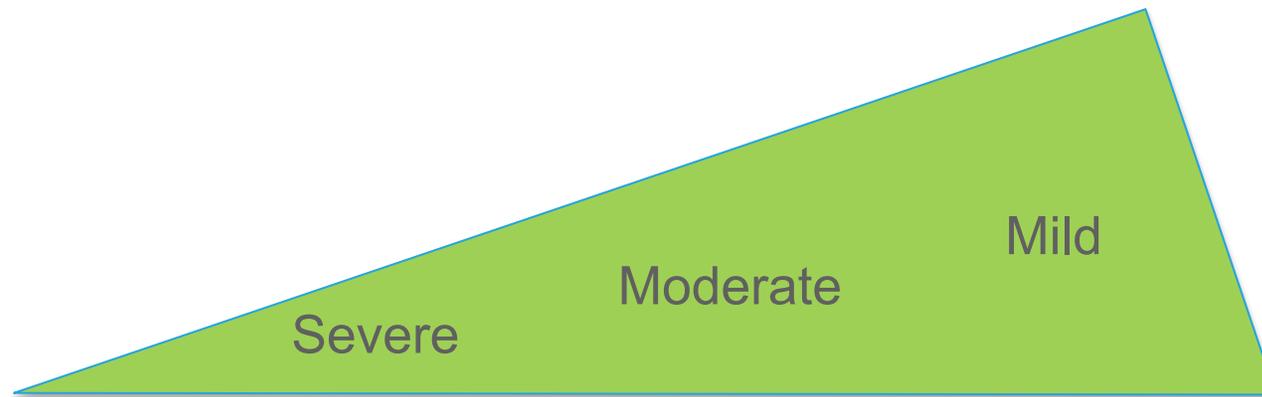
- Our intuitions fail us here
- Input and storage are not the same thing
 - Input is visual, storage is orthographic
- Low correlation between word reading & visual memory
- Word reading correlates strongly with phonological skills
- We forget people's names but not words
- Most students who are deaf struggle tremendously with word level reading
- 1960s to 1980s miXeD cAsE sTuDiEs
 - Adams' comment about debating with students
 - Our “abstract representation” of every letter
 - If a first grader learns “bear” he can instantly identify “BEAR”
 - Consider all the fonts and personal handwriting we read

Concerns About the Efficacy of Phonics

- Explicit and systematic phonics instruction displays better results than whole word or whole language
- Too many, however, never “catch up”
- A small percentage cannot seem to learn via phonics
- No built-in mechanism or theory about fluency and building a sight vocabulary

Concerns About the Efficacy of Phonics

Three levels of response to phonics based upon the severity of the phonological-core deficit
(And you know all these students!)



Level of Severity of the Phonological-Core Deficit

How Sight Vocabulary is Developed

An Introduction to Orthographic Mapping

David Share's Self-Teaching Hypothesis

- We teach ourselves most of the words we know
- Orthographic learning occurs one word at a time
- From 2nd grade on, new words are added to the sight vocabulary after only 1 - 4 exposures
- Orthographic learning is implicit – typically not much conscious thought
- As students put in the work sounding out words, they are connecting phonemes with graphemes and forming orthographic connections

Linnea Ehri's Orthographic Mapping Theory

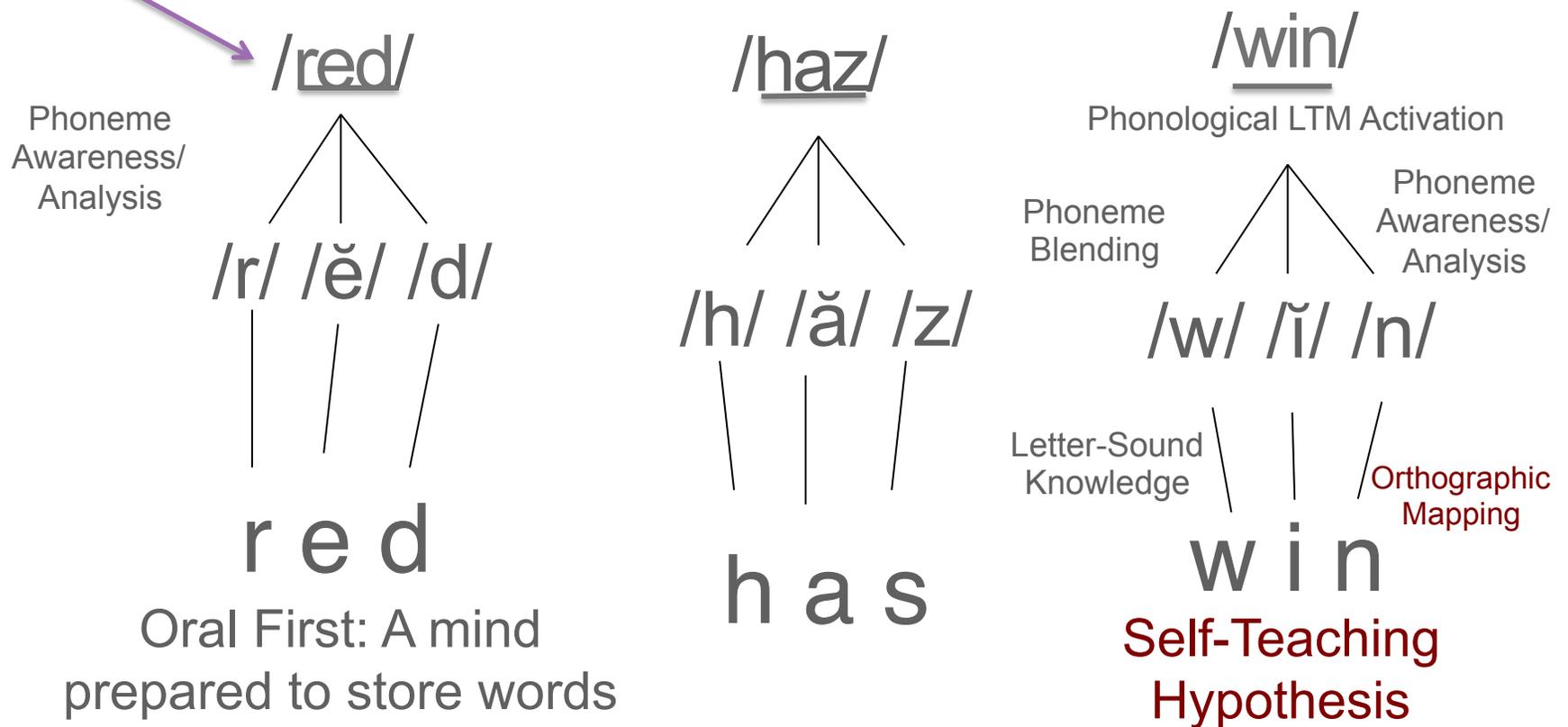
- Sight words are highly familiar spellings (i.e., letter sequences), regardless of the visual look of the word
 - e.g., bear, BEAR, **Bear**, *bear*, **bear**, *BEAR*, **bear**, *bear*, BEAR
- Sight words are anchored in LTM via a connection between something well established in LTM (the word's pronunciation) and the stimulus that needs to be learned (the letter sequence in the word's spelling)
- Phonemic segmentation and letter-sound skills are central to this connection-forming process

How We “Map” Words

“Transparent” Words

(i.e. words with one-to-one correspondence)

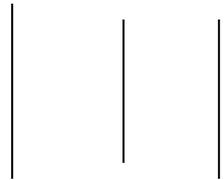
PLTM



How We “Map” Words

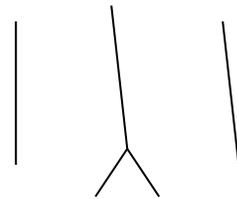
Words that are “Opaque”
(i.e. words without a one-to-one correspondence)

/m/ /ā/ /k/



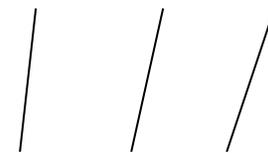
m a k e

/r/ /ē/ /d/



r e a d

/c/ /ō/ /m/



c o m b

Crash Course on How Words are Learned

Orthographic mapping requires:

- Letter-sound proficiency
- Phonemic proficiency (this goes well beyond what is tested on our universal screeners)
- The ability to establish a relationship between sounds and letters unconsciously while reading

What about irregular words?

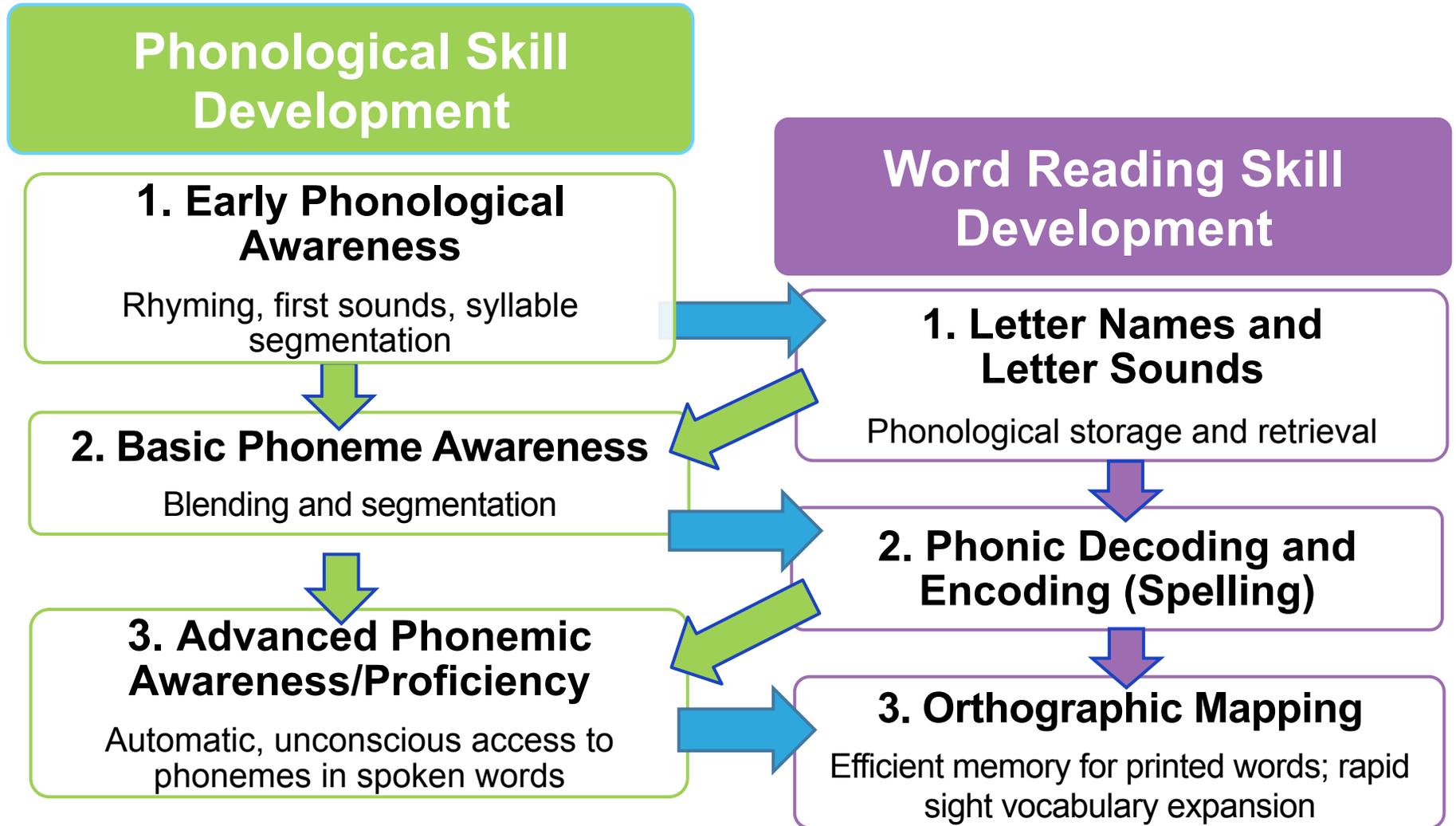
- Irregular and opaque words take longer to learn
 - Only 1-2 extra exposures for typical readers; many more for RD
- Most irregular words are off by only one element
 - (said, put, comb, island; multiple violations are rare: one, iron)
- Irregular words not a challenge for orthographic mapping

“Exception words are only exceptional when someone tries to read them by applying a [phonic] decoding strategy. When they are learned as sight words, they are secured in memory by the same connections as regularly spelled words . . .” (Ehri, 2005 p. 171-172)

What about irregular words?

- Many regular words require mapping “adjustments like irregular words
 - Silent e words, vowel digraphs, consonant digraphs are all opaque
 - Multisyllabic “regular” words with vowel reduction require mapping adjustment, much like irregular words (e.g., holiday, market)

The Developmental Relationship Between Phonological Skills and Word-Level Reading



Sight Vocabulary and Reading Fluency

- Sight words are effortless & pre-cognitive—words “pop out”
- The elusive key to reading fluency is:
SIGHT VOCABULARY SIZE
- With a large sight vocabulary:
 - Most (or all) words “pop out”; reading is fast and accurate
- With a limited sight vocabulary:
 - Reading is effortful and often inaccurate because too many unfamiliar words require attention and strategic decoding
 - Poor fluency is NOT about speed of access to known words

Assessment Implications

Assessment Implications

In our Tier 1 assessments, we need to attend to:

- **Letter-sound proficiency**
 - Timed nonsense word reading on universal batteries
- **Phonemic proficiency**
 - PAST
 - Others on the way

Assessment Implications

In our Tier 2 assessments, we need to attend to:

- Letter-sound proficiency
 - TOWRE-2 Phonemic Decoding Efficiency
 - KTEA-3 Decoding Fluency
 - Others on the way
- Phonemic proficiency
- Size of the sight vocabulary
 - TOWRE-2 Sight Word Efficiency
 - KTEA-3 Word Recognition Fluency
 - Others on the way

Prevention & Intervention

Tier 1 Results

K-1 phonological Awareness Instruction

- *Overall* improvement in reading scores
- Average of 8 standard score points
- Results did not always last after 1-2 year follow ups

HOWEVER . . .

- At-risk students averaged 13 standard score point gains!
- Gains increased to an average of 20 points at 6 month to 2 year follow ups!

Prevention of Word-Level Reading Difficulties

Tier 1 instruction – What is effective K-1?

KEY COMPONENTS

- Phonological Awareness
- Letter-Sound Knowledge
- Connecting phonological awareness to word-level reading

A Recent Finding about Intervention Research

These three groups approached instruction differently!

1. Minimal Group (0 – 5 SS improvements)

- None formally trained phonological awareness/analysis
- Most did explicit, systematic phonics
- All provided reading practice with connected text

2. Moderate Group (6-9 SS improvements)

- All did explicit, systematic phonics
- All provided reading practice
- Nearly all trained phonological segmentation and/or blending
 - This is “basic phonological awareness” (mastered by most at end of 1st grade)

3. Highly Successful Group (12-25 point improvements)

- Aggressively addressed and “fixed” PA issues using advanced PA training
- All did explicit, systematic phonics
- All provided reading practice with connected text

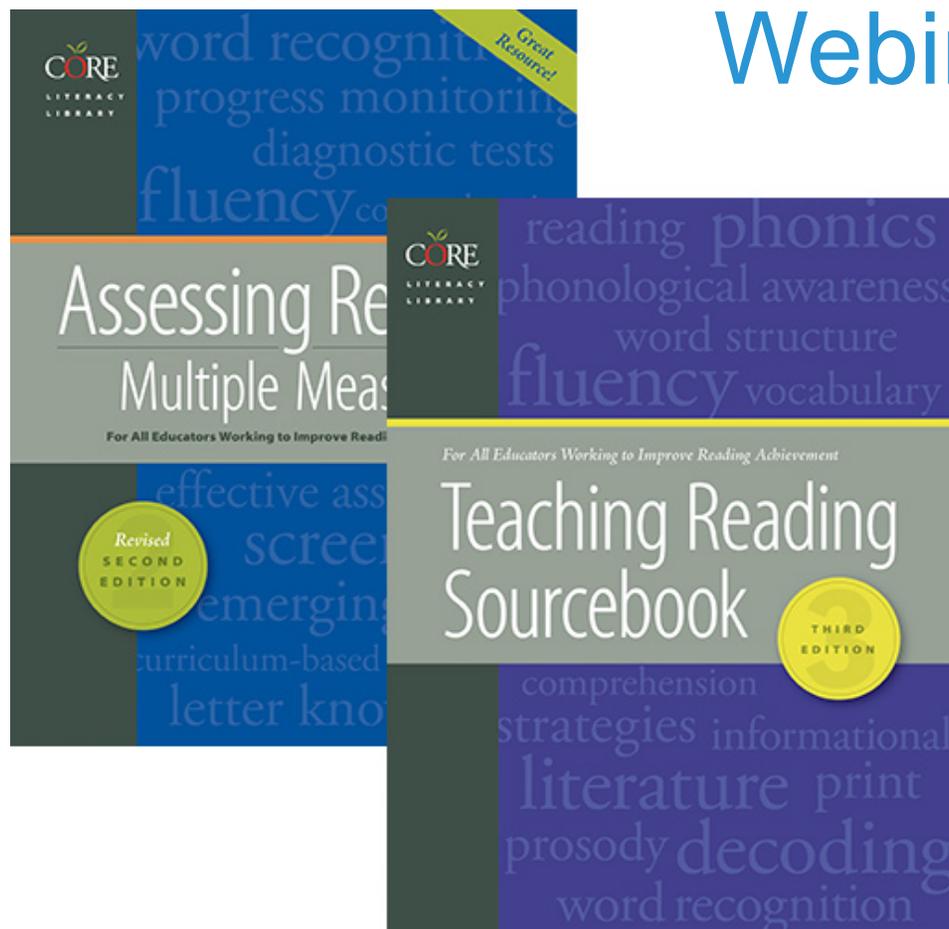
Contact for Follow Up Materials



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