

Assessing, Preventing, and Overcoming Reading Difficulties

A professional learning series presented by David Kilpatrick, Ph.D.

Module 2 Session 3

*Sponsored by the Exceptional Student Services Unit (ESSU) and created in collaboration with
Specific Learning Disability Specialists Jill Marshall and Veronica Fiedler*



COLORADO
Department of Education

Module 2: Current Approaches to Reading Instruction: Why Many Learners still Struggle

Session 3: Visual Memory Theory of Reading

Assessing, Preventing, and Overcoming Reading Difficulties

Objective:

Through engagement in this series of 13 on-demand webinars, participants will understand the current research, implications, and the essential elements necessary for assessing, preventing, and overcoming reading difficulties.



ASSESS



PREVENT



OVERCOME

Assessing, Preventing, and Overcoming Reading Difficulties

Webinar Series Modules

Module 1: Reading Research and the Research to Practice Gap

Module 2: Current Approaches: Why Many Learners Still Struggle

Module 3: The Simple View Of Reading

Module 4: Word-Level Reading

Module 5: Reading Comprehension

Module 6: Introduction to Reading Assessment; Assessing Phonological Skills

Module 7: Assessing Phonics Skills

Module 8: Assessing Word Identification and Reading Fluency

Module 9: Assessing Reading Comprehension and Related Skills

Module 10: Effective Approaches for Preventing Reading Difficulties

Module 11: Effective Interventions for Reading Difficulties

Module 12: Case Examples of Reading Disabilities

Module 13: Specific Learning Disability Identification

Module 2 Overview

Module 2:

Current Approaches to Reading Instruction: Why Many Learners Still Struggle

2.1 A Very Brief History of Reading Instruction

2.2 Why Current Reading Instruction Doesn't Work for Many

2.3 Visual Memory Theory of Reading

2.4 Three Cueing System Theory of Reading

2.5 Phonics- Strengths and Limitations

Learning Intentions



Module 2 Session 3: Visual Memory Cannot Explain Sight- Word Skills: How Our Intuitions Fail

Participants will be able to:

- ✓ Define “sight words”
- ✓ Describe the whole word/sight word teaching approach
- ✓ Examine the strongly intuitive notion that we remember written words based upon visual memory

Four Definitions of “Sight-Word” in Education

1. Another name for the classic whole word reading approach
2. An early, high frequency word
 - Usually taught in kindergarten or first grade
 - Dolch-type words such as and, of, is, what, has, her, one
3. Phonically irregular words
 - (e.g., said, have, put, wash, iron)
4. Any known or familiar, instantly recognizable word, regardless of whether it is phonically regular or irregular, or whether it is a common or an uncommon words
 - These words form the basis of the “sight word vocabulary”

Definition of “Sight-Word” by Researchers

- Researchers only use the educator’s definition #4
- A sight word is any written word that is well-established in memory and thus automatically recognizable
- It doesn’t matter if it is phonically regular or irregular, high frequency or low frequency, learned early or learned later
 - Note: This will be the only use of the term “sight word” in the remainder of these professional development modules
- A sight vocabulary refers to a given person’s pool of known, familiar, and thus instantly recognizable words
 - Researchers also call this pool of words the “orthographic lexicon”

Visual Memory Theory of Word Recognition

- Intuition suggests reading written words is like object naming
 - Seeing a chair and saying “chair” and seeing the written word chair and saying “chair” feel like the same thing
 - Both involve visual input and verbal output
- The classic whole word method appears to be based on this assumption
 - Multiple repetitions to visually remember words
 - Very inefficient for weak readers
- Scientific inquiry into reading has shown our intuitions fail us here
- Multiple, independent lines of research show word-reading is not based upon visual memory

Problems with the Visual Memory Theory (1)

- Input and storage are not the same thing
 - Input is visual, storage is orthographic, phonological, and semantic
- James Cattell's findings in 1886
 - Reading words and naming objects have different reaction times
- Findings from the 1970s
 - Students with reading disabilities usually had perfectly normal visual memory
- Correlation between word reading and visual memory: zero to weak
- 1960s to 1980s miXeD cAsE sTuDiEs
 - Adams' comment about debating with students
 - Kevin reading Calvin & Hobbes
 - If a first grader learns "bear" he can instantly identify "BEAR"
 - Our "abstract representation" of every letter
 - Consider all the fonts and personal handwriting we read

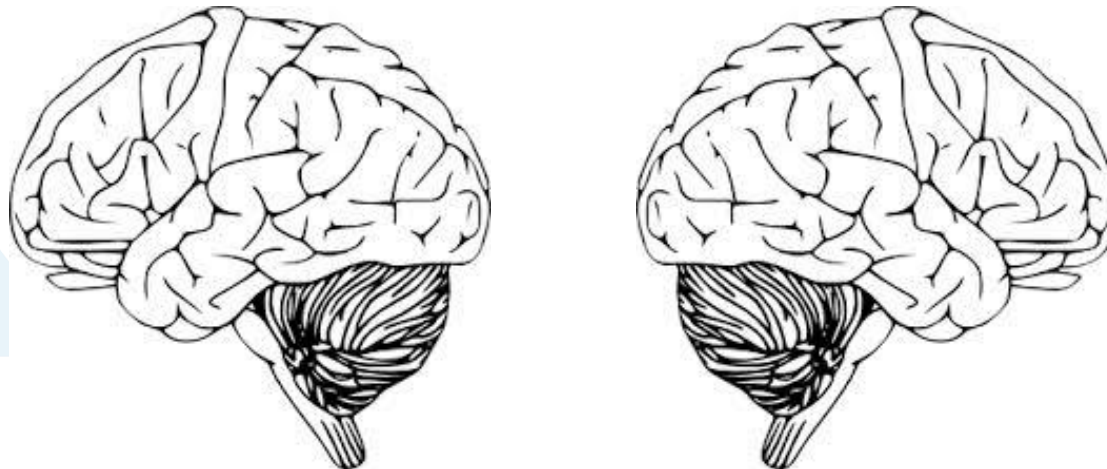
Problems with the Visual Memory Theory (2)

- Word reading correlates strongly with phonological skills
 - Phonological awareness and Word Reading: $r = .30$ to $.85$;
 - Usually $.5$ to $.7$ depending on which PA test (more later)
 - As mentioned visual memory poorly correlates with word reading: $r = .1$ to $.2$
- Note how we sometimes “block” on names of people and things (visual memory?), but never written words (orthographic memory)
 - Forgetting a name is a failure of phonological retrieval, not visual memory
- Most students who are deaf struggle tremendously with word level reading
 - This should not be such a problem if word reading was based on visual memory

Problems with the Visual Memory Theory (3)

- Neuroimaging studies since 2000 show that
 1. phonic decoding;
 2. instant word recognition;
 3. memory for faces; and
 4. object naming

all display different activation patterns in our brains
(Cattell's findings from 1886 now make sense)



Role of Visual Memory in Reading

- Visual memory appears to play a role in visual-oral paired associate learning in learning letters
- Once letters are learned to automaticity, visual memory appears to play no role in visual memory for words
- It is orthographic memory, that is, the memory for specific letter sequences, that is secured in memory
- Thus, BEAR, bear, bEaR, *bear*, BEAR, **bear**, *bear*, *bear*, etc. all represent the same orthographic memory, but differ dramatically in their visual features

Summary: Module 2 Session 3

- ✓ Researchers and educators define sight words as known, instantly familiar words that require no effort to read because they are very well secured in memory
 - ✓ Skilled readers have large sight vocabularies while weak readers do not
- ✓ Visual memory feels like the way words are stored in memory
- ✓ This strongly intuitive notion has been shown to be incorrect via multiple lines of independent research
- ✓ To understand reading, we must look elsewhere to determine how we remember the words we read



Reflect and Connect:

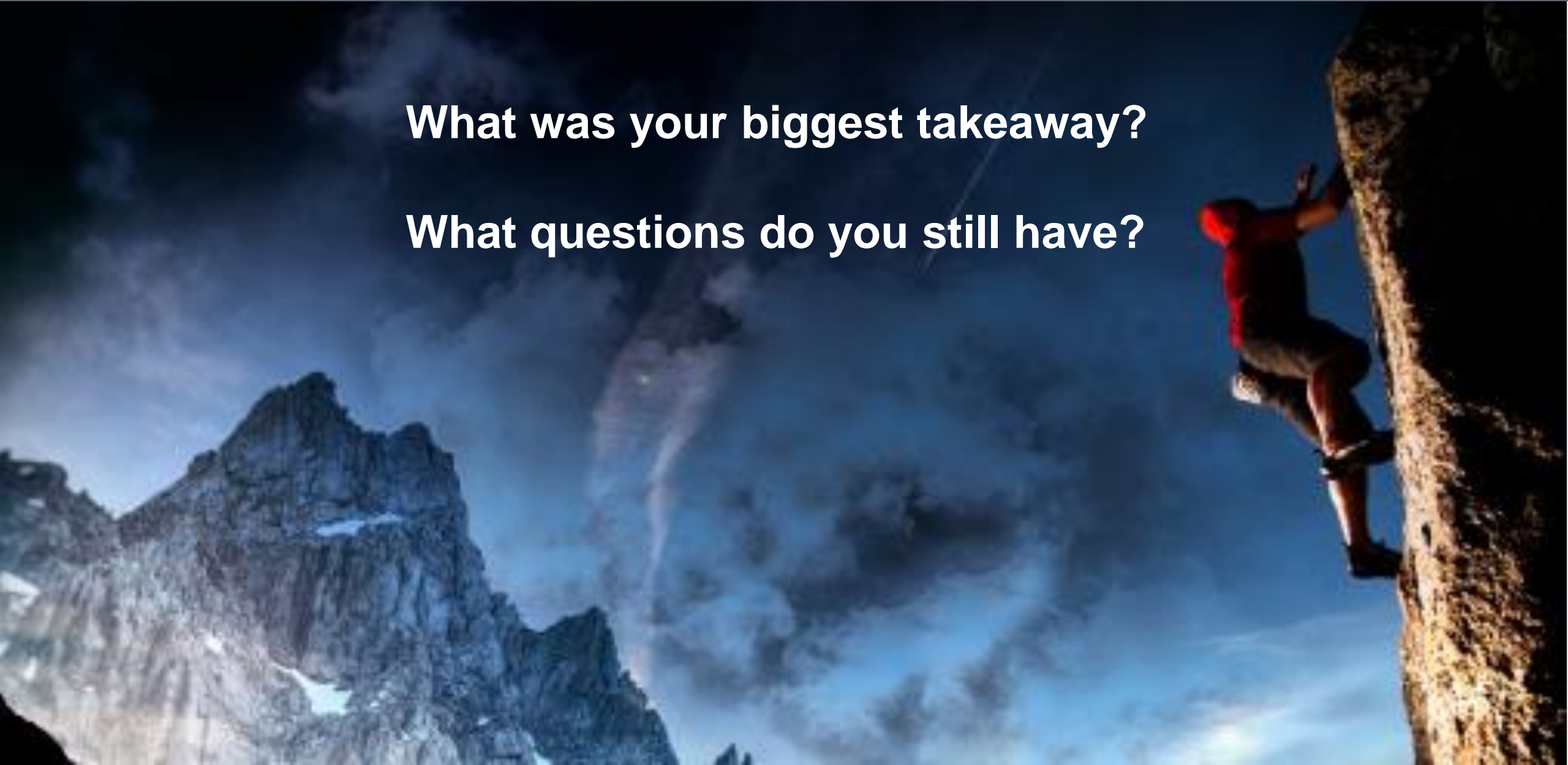
If word-reading is not based upon visual memory, what skills is it strongly correlated with? How might this shift in understanding influence a shift in reading instruction?



Wrap Up

What was your biggest takeaway?

What questions do you still have?



Up Next

Module 2.4 Three Cueing System Theory of Reading





T₁

H₄

A₁

N₁

K₅

Y₄

O₁

U₁

Please visit the CDE Specific Learning Disability Website for more information:

<https://www.cde.state.co.us/cdesped/SD-SLD>