A Neurocognitive Approach to Reading Instruction: 12 Interacting and Interconnected Elements

www.teaching-reading.com

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The International Literacy Educators Coalition

www.ILEC-Reading.com

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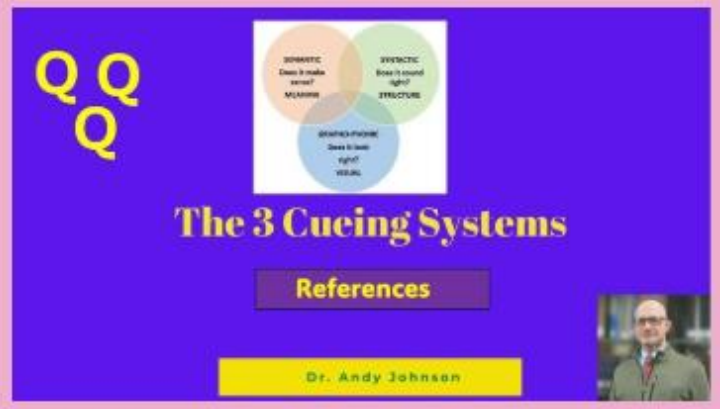
Articles and Resources



Reference for 3 Cueing Presentation

PPT. Slides at www.ILEC-reading.com

The Reading Instruction Show

podcasts and YouTube videos

Dr. Andy Johnson

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Expert teachers have four kinds of knowledge:

a. content knowledge – (know about reading)

b. pedagogical knowledge – (general teaching strategies – discovery learning, question-discussions)

c. pedagogical content knowledge – (specific content strategies, strategies for teaching reading)

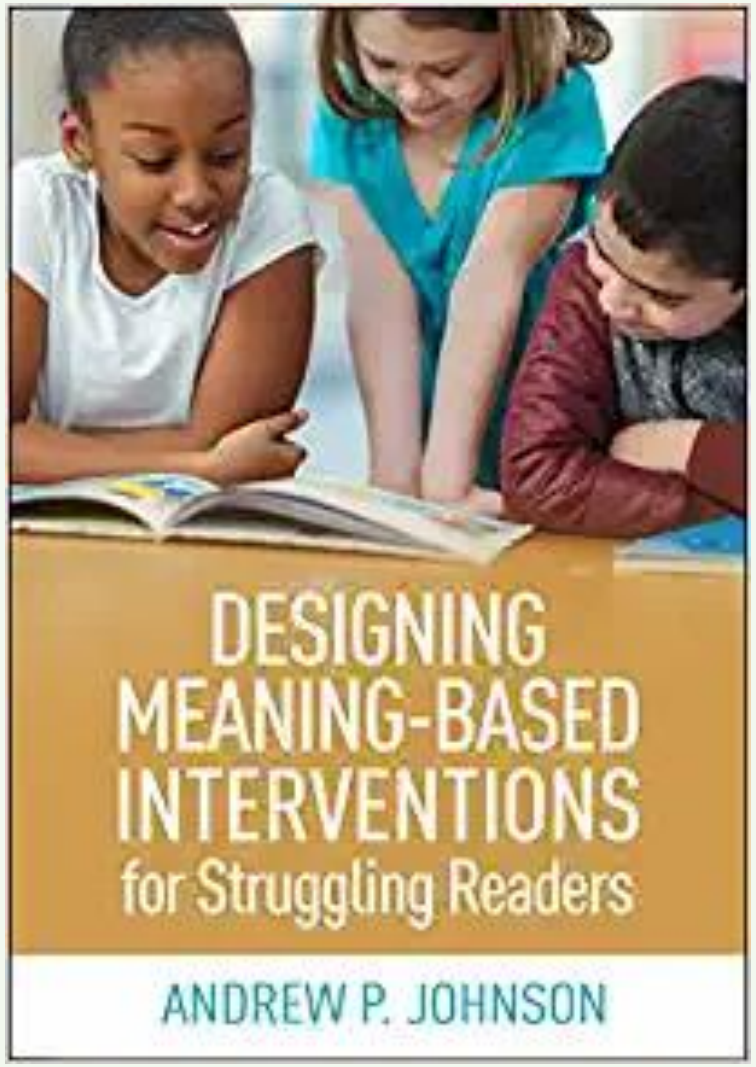
d. knowledge of learners and learning – (human development, how humans learn)

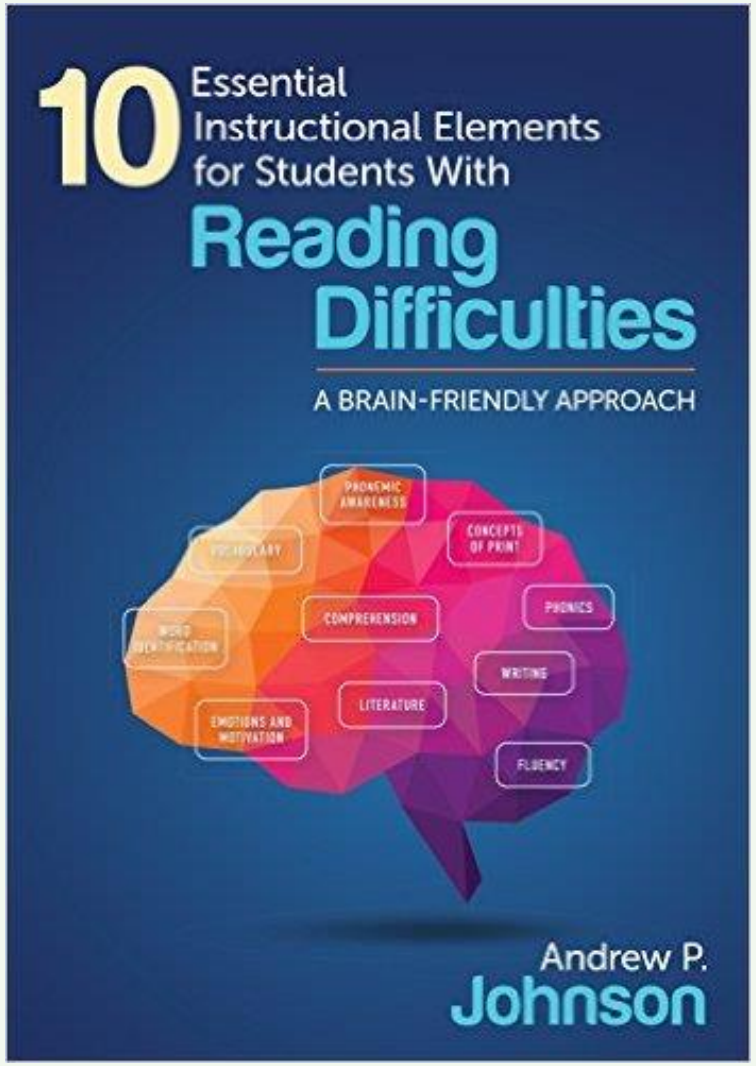
three semesters?

two literacy courses?

20 years old?

learners permit for teaching





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I. Some Context

II. A Story

III. Pillars: National Reading Panel vs. Neurocognitive

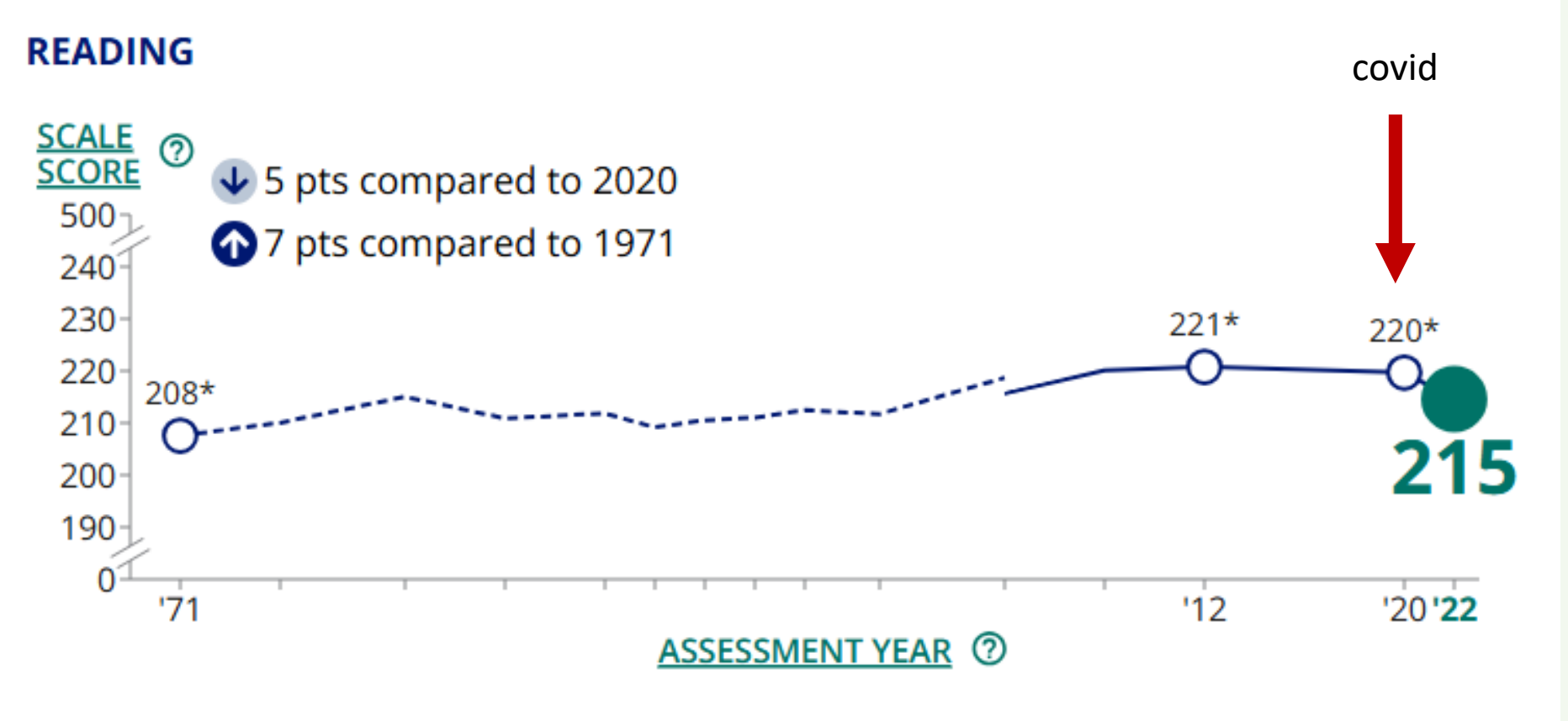
IV. A Neurocognitive View of Reading

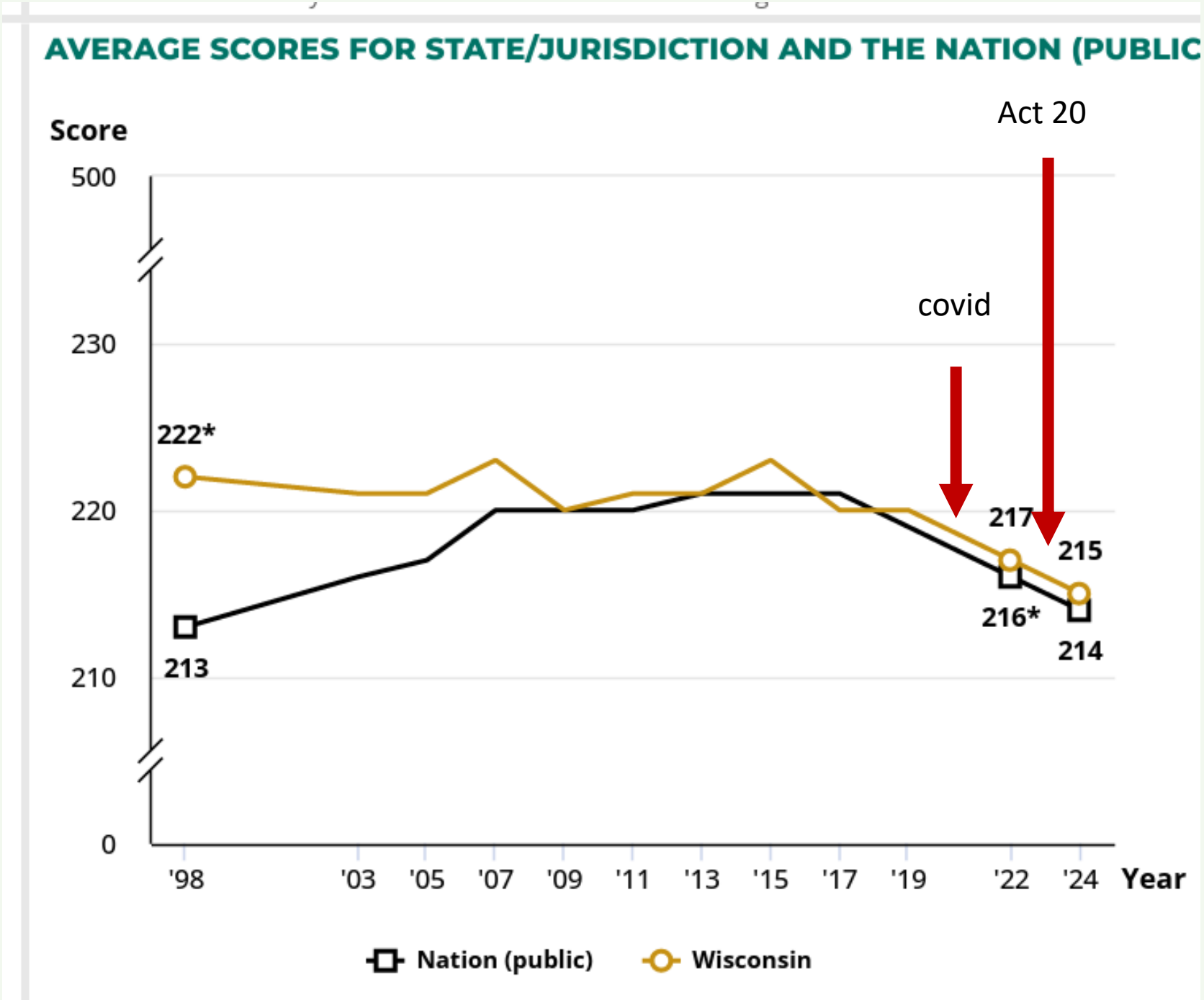
V. 12 Interacting and Interconnected Elements

VI. If time … Eye Movement and Reading

I. Some Context

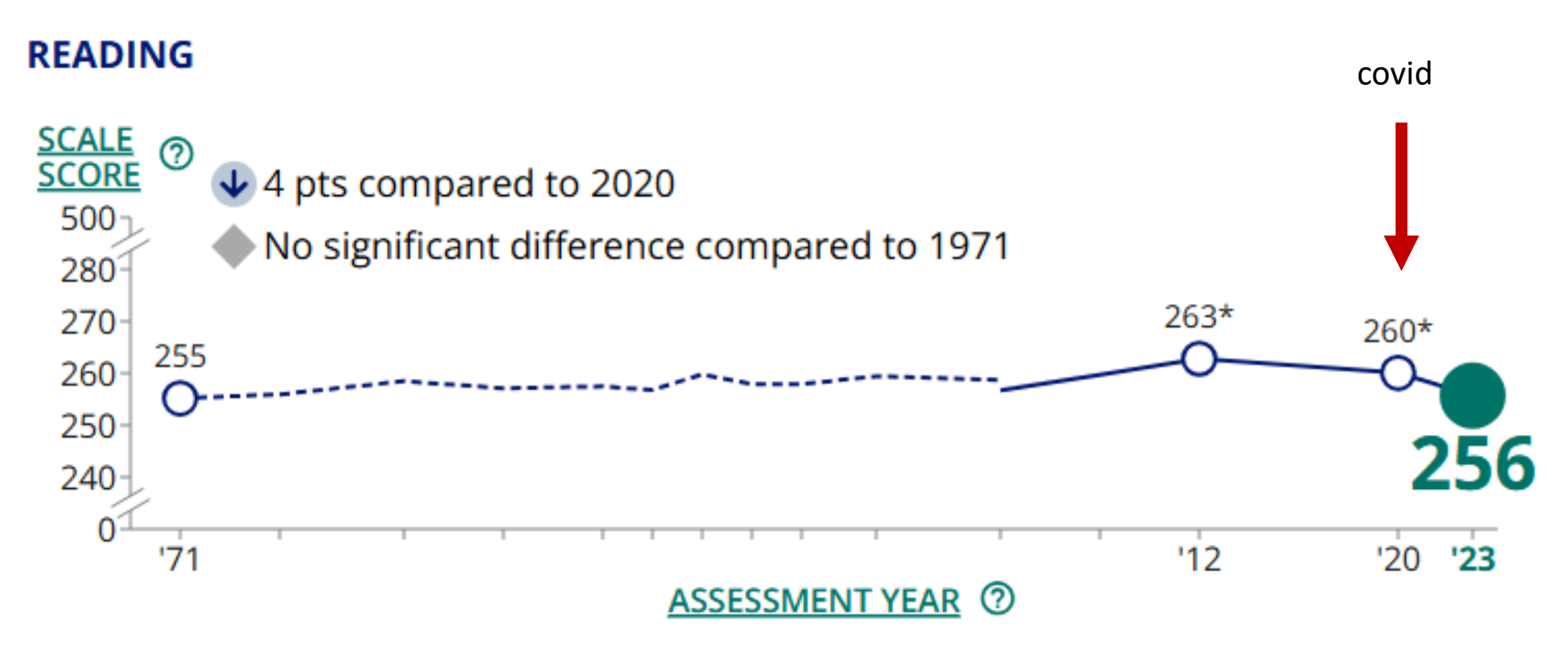
4th grade, Long Term Trend in Reading

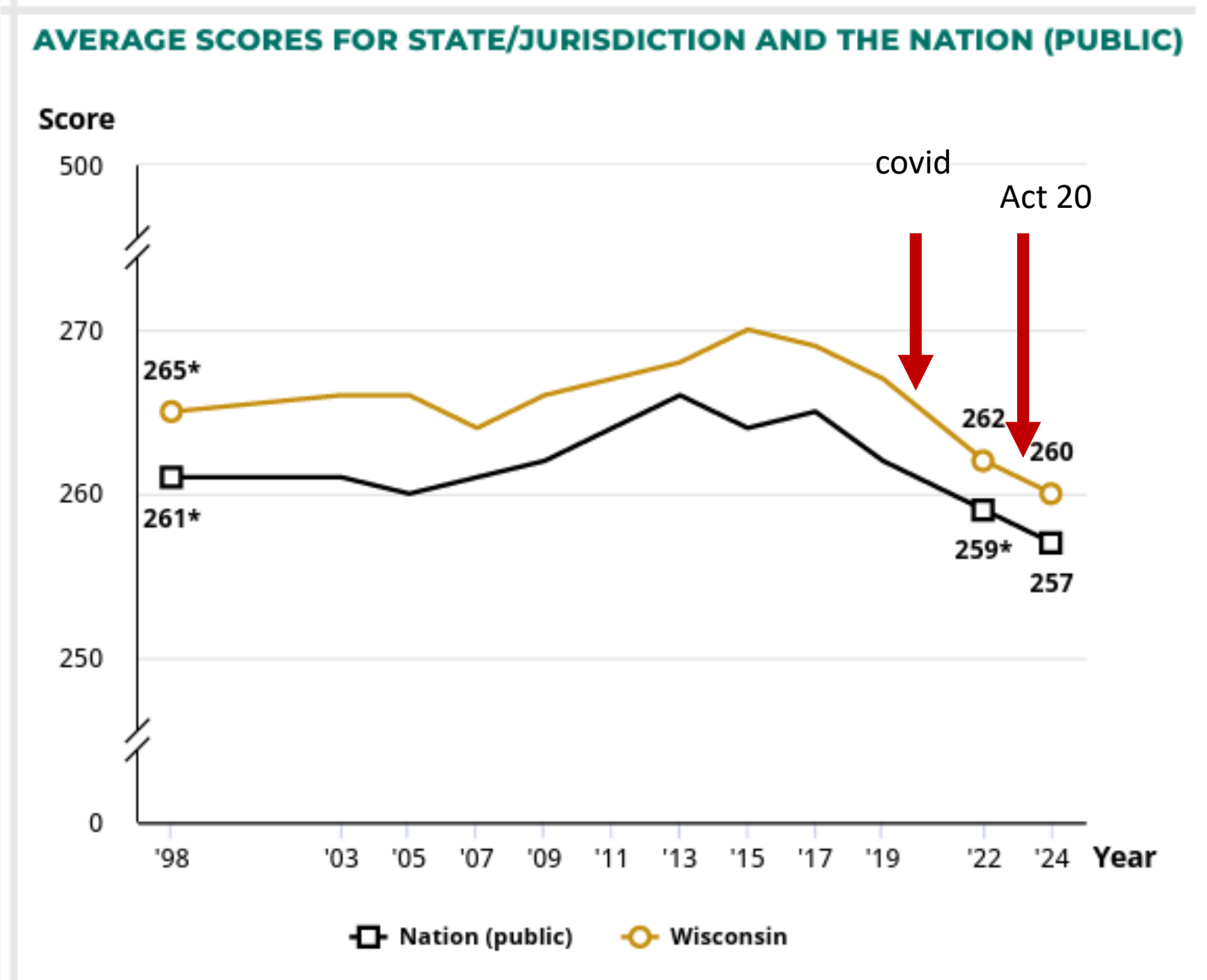



AVERAGE SCORES FOR STATE/JURISDICTION AND THE NATION (PUBLIC
Act 20
Score
500
230
220
210
0
covid
222*
213
217
215
216*
214
'98
'03
'05
'07
'09
'11
'13
'15
'17
'19
'22
'24
Year
Nation (public)
Wisconsin

4th grade

8th grade, Long Term Trend in Reading



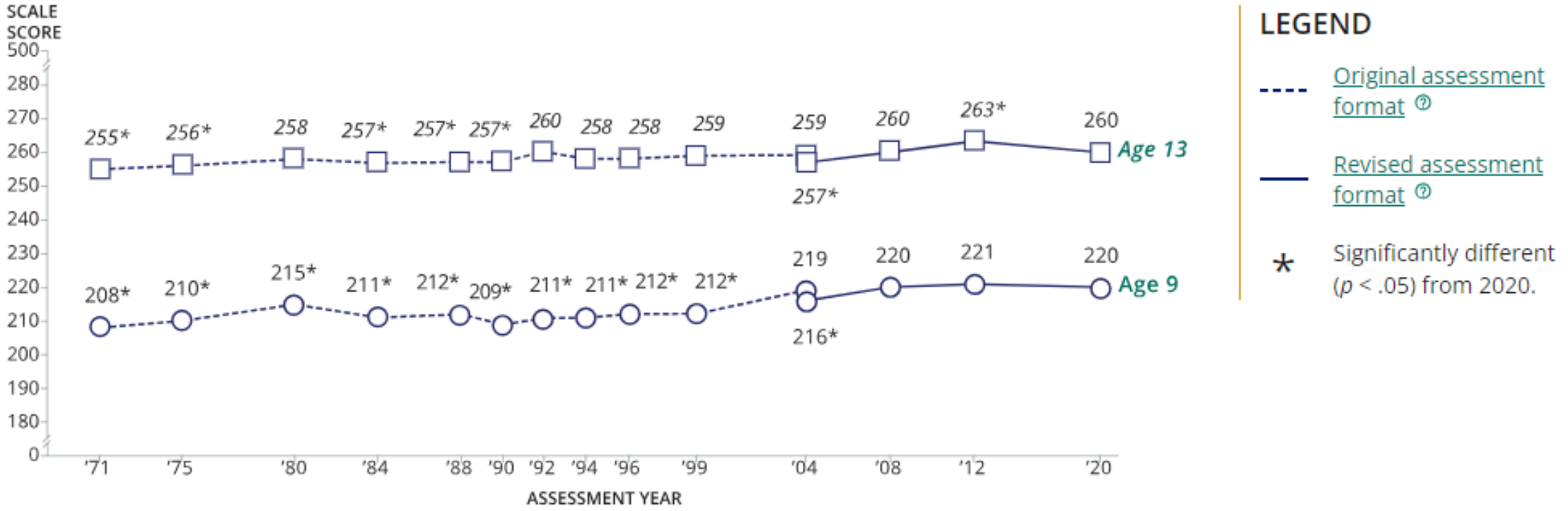

AVERAGE SCORES FOR STATE/JURISDICTION AND THE NATION (PUBLIC)
Score
500
270
260
250
0
covid
Act 20
265*
261*
262
260
259*
257
'98
'03
'05
'07
'09
'11
'13
'15
'17
'19
'22
'24
Year
Nation (public)
Wisconsin

8th grade

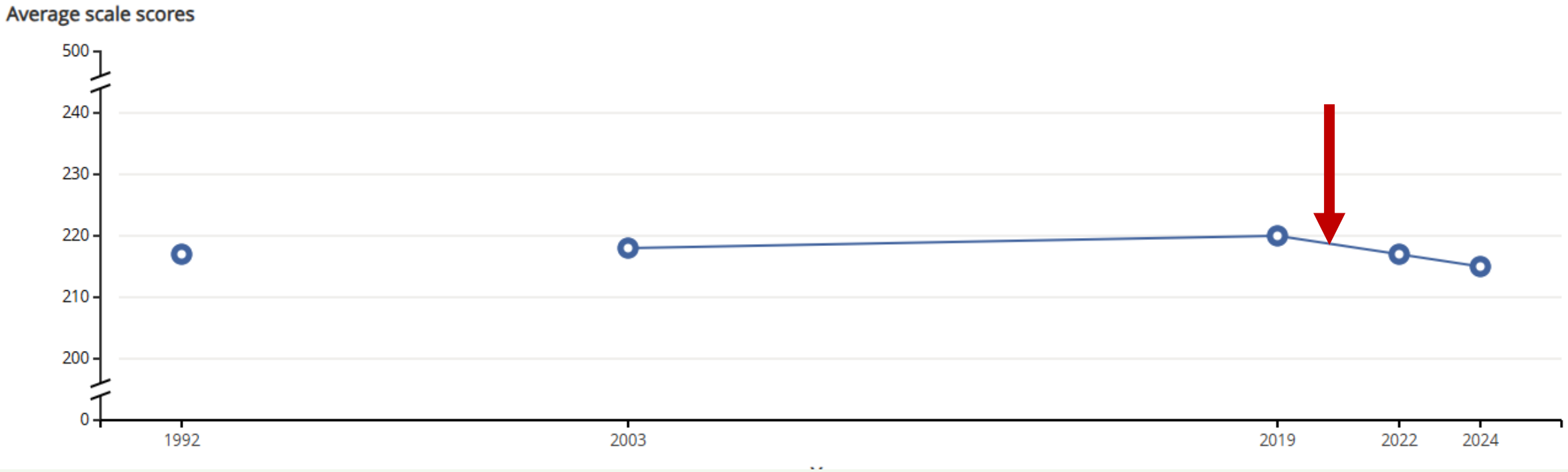
A longer view of things

FIGURE | Trend in NAEP long-term trend reading average scores for 9- and 13-year-old students

DISPLAY AS **GRAPH** TABLE



Average scale scores for grade 4 reading, by All students [TOTAL] for jurisdiction: 2024, 2022, 2019, 2003, and 1992
National

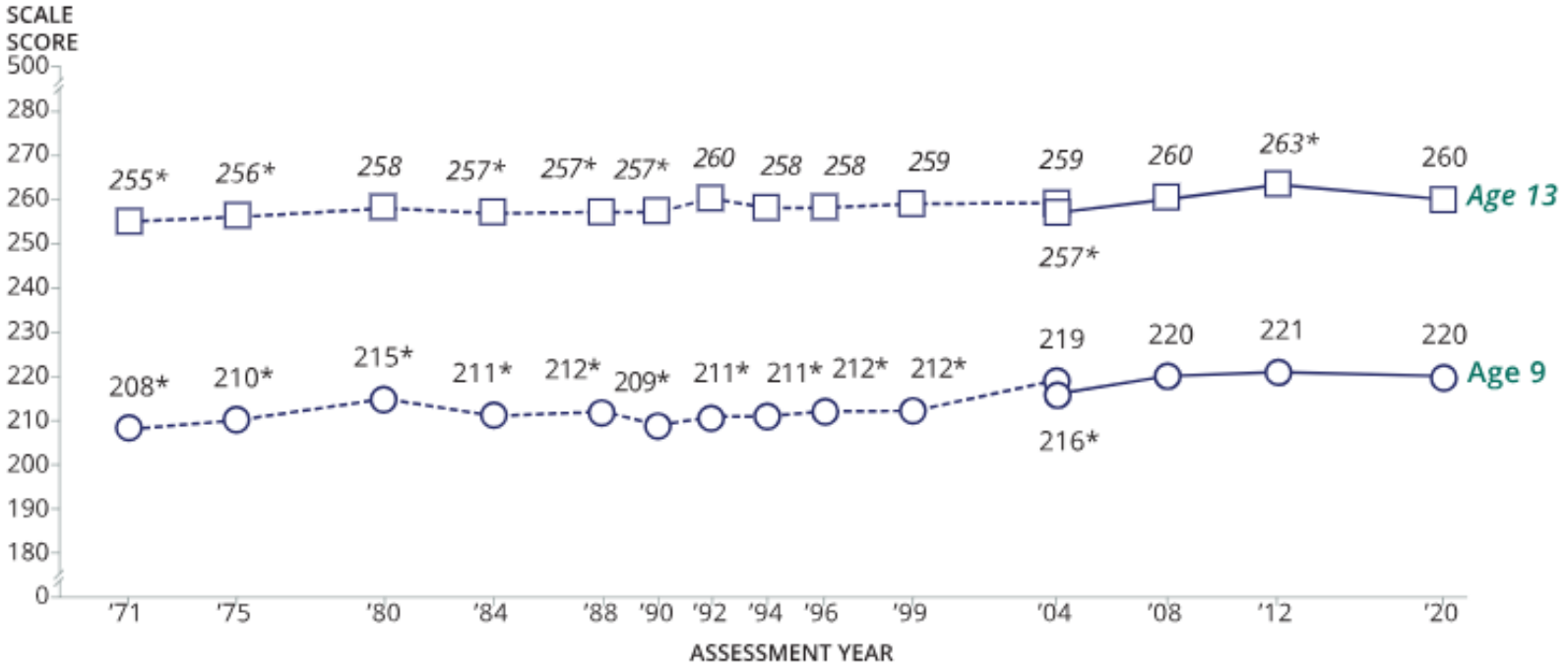


NAEP is one measure

Too early to determine long term trends of Act 20 or The Read Act

FIGURE | Trend in NAEP long-term trend reading average scores for 9- and 13-year-old students

DISPLAY AS **GRAPH** TABLE



LEGEND

---- Original assessment format

— Revised assessment format

* Significantly different ($p < .05$) from 2020.

Some of the variables impacting student achievement –

Real science doesn't randomly assign causality.

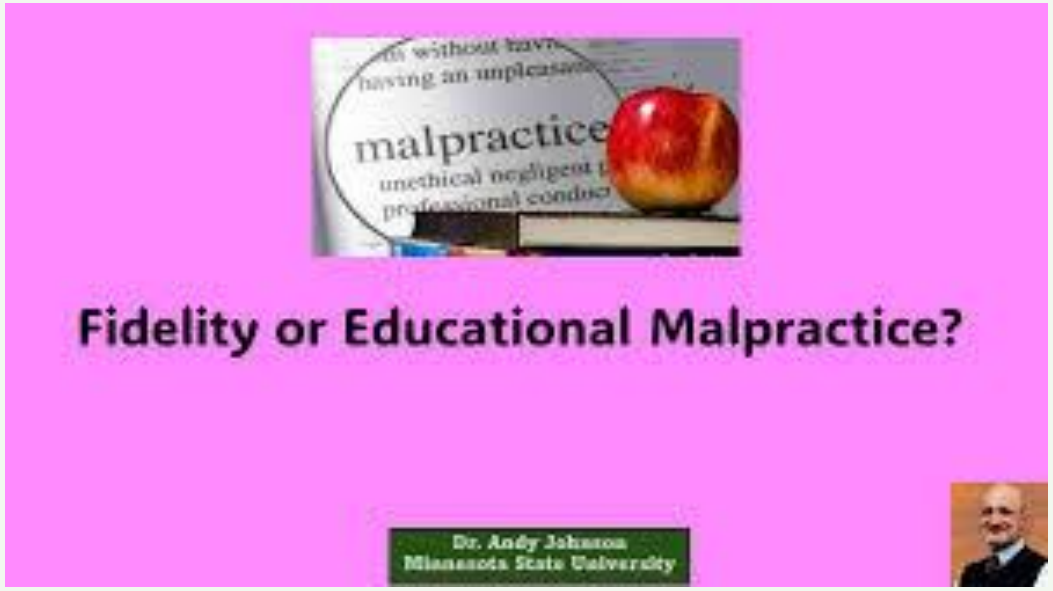
Some variables that can affect student achievement

• parent level of education	• parent SES	• economic base
• class size	• level of technology in classroom	• unemployment rate
• enrolment by grade level	• percent of English language learners	• percent of special education students
• teacher quality/proficiency	• teacher attitude	• class size
• teacher certification	• inclusion vs. segregation	• school size
• legitimate teacher professional development opportunities	• teacher autonomy	• research-based strategies used
• expectations of teachers, parents	• type and amount student writing instruction and opportunities	• gender differences
• number and types of books in classroom and school library	• amount of free reading time	• the use of standardized testing
• diet	• access to health care	• safety at school
• school funding	• stress or anxiety factors	• amount of study time
	• systemic racism	• parent involvement and support
		• implicit bias

Doctors and lawyers are held accountable to their practice (they can be sued for malpractice not maloutcome)

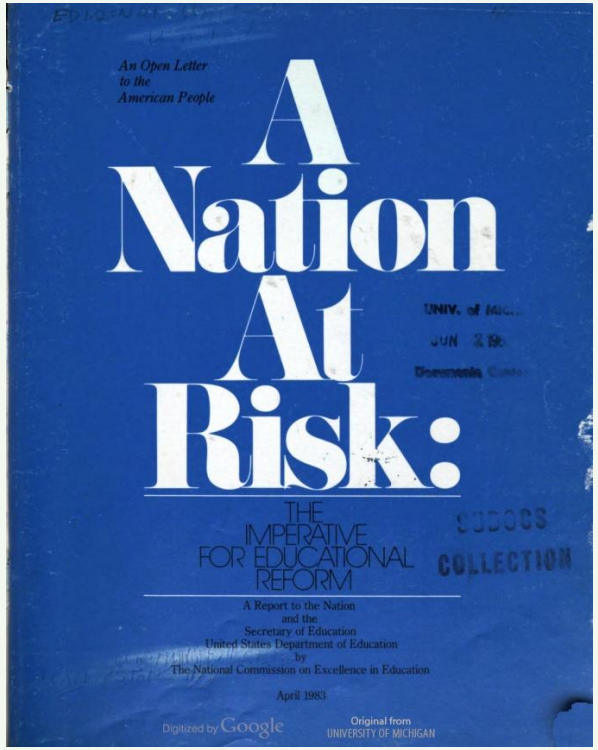
Teachers should be held accountable for their teaching practices not outcomes

Current SoR mandates (Act 20, The Read Act), are forcing teacher to engage in educational malpractice on a daily basis.



II. A Story ....

Once upon a time …



Our nation was at risk!!!

1983

A Nation at Risk (NCEE, 1983), a report written by the National Commission on Excellent in Education

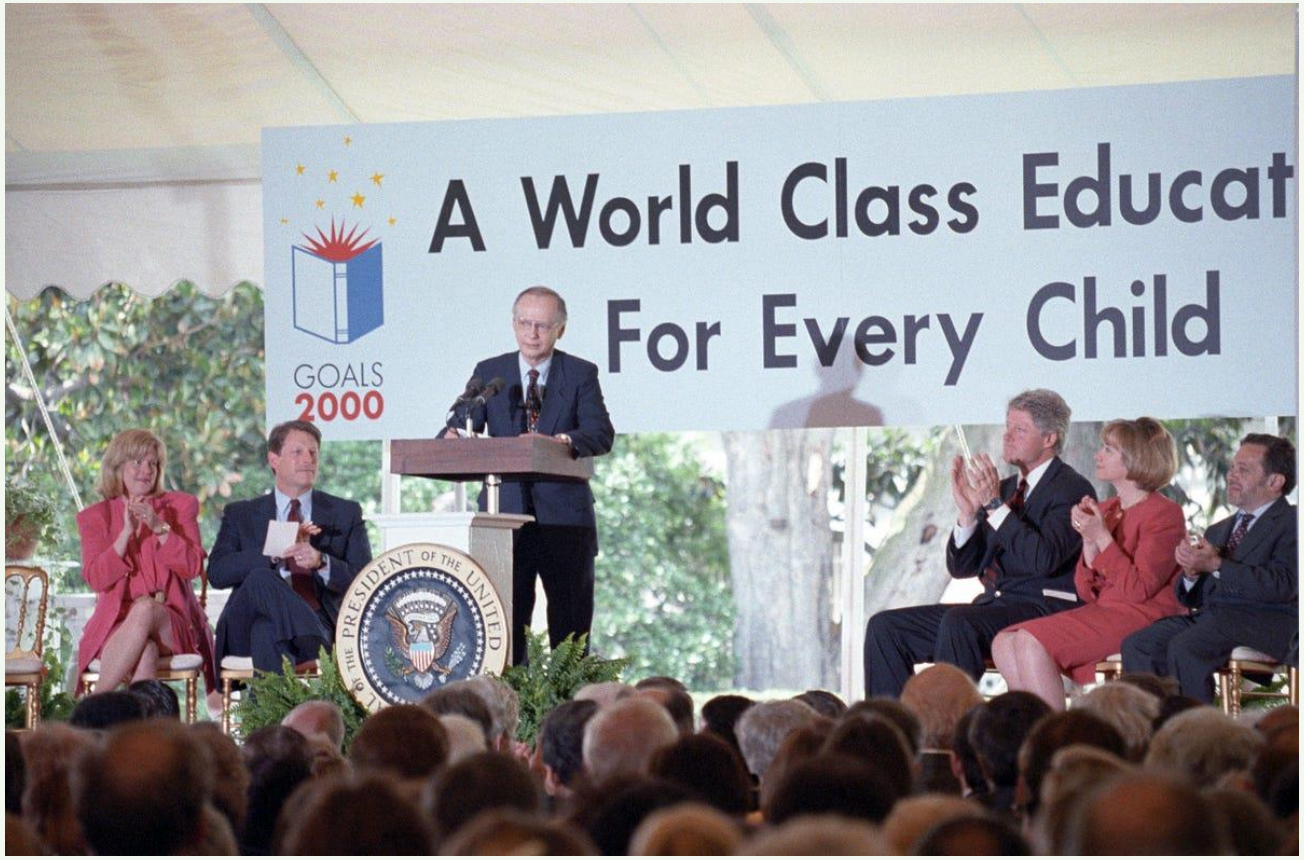
We were saved from economic chaos! Hurray! Hurray! Thank you, Terrel H. Bell!

William Bennet, Secretary of Education

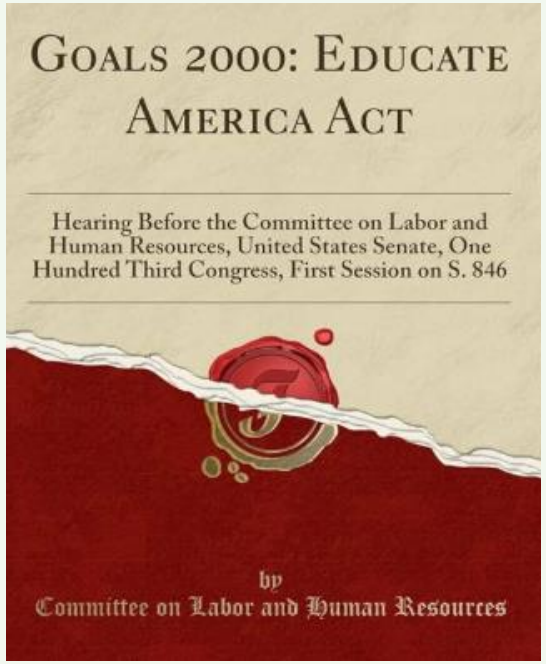
content, character and choice (vouchers)

We were saved from moral decay! Hurray! Hurray! Thank you, Bill Bennet!

1994



Education Reform: Invest More, Demand More



We got outcome-based education! Hurray! Hurray! Now that we have outcomes, we can teach! Thank you, Bill Clinton and Richard Riley!

2002.

No Child
LEFT BEHIND

Look at all the happy smiling people!! The federal government is more involved in education. At last, the problem is solved! Hurray! Hurray!

READING FIRST

The Reading First Initiative. We just need more phonics!
Hurray! Hurray! The reading problem is solved!!

Every Student Succeeds Act

2015

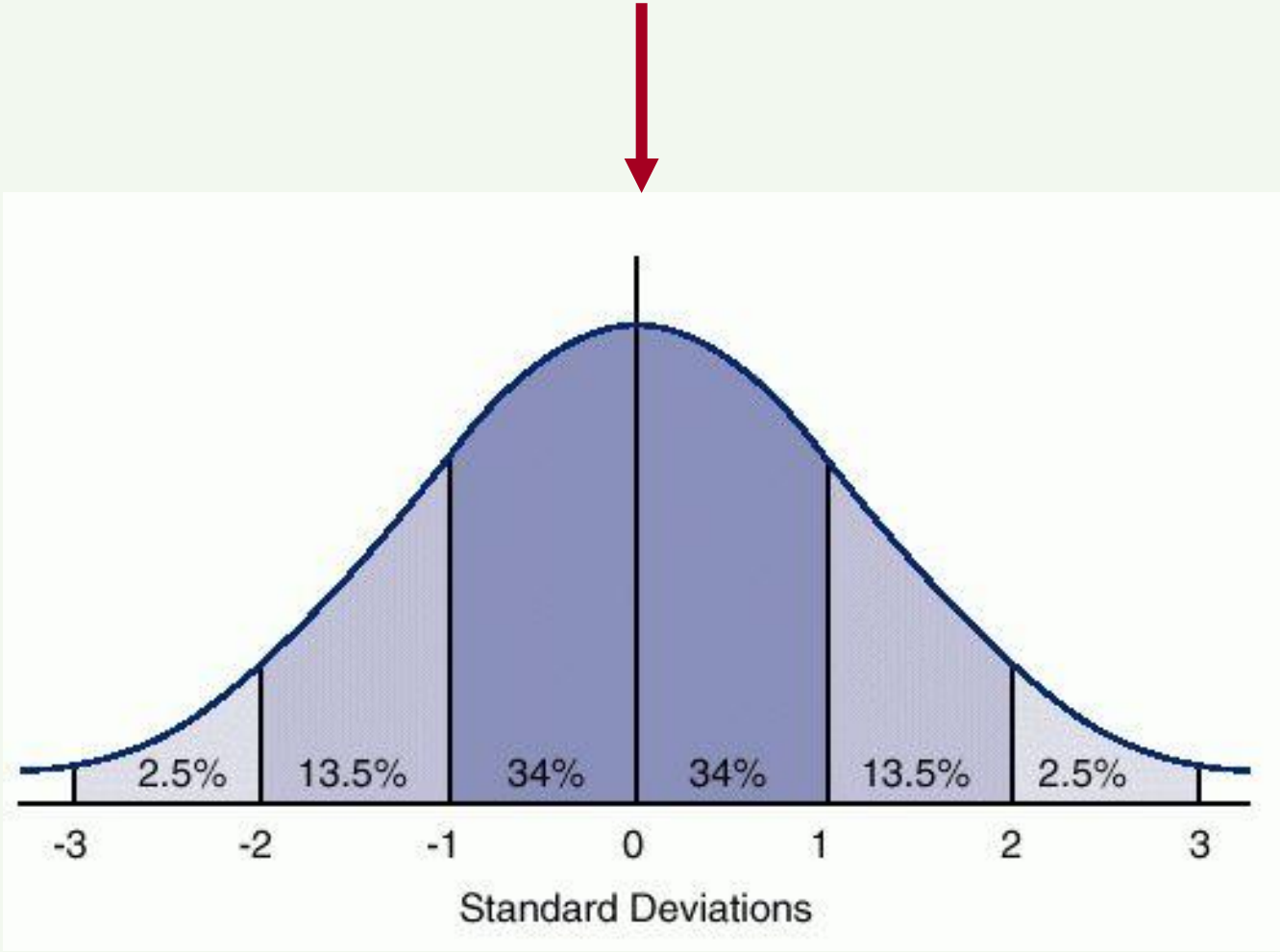
Look at all the happy smiling people!! No Child Left Behind went away. At last, the problem is solved! Hurray! Hurray!

2023

The Read Act in Minnesota. Happy smiling children. Hurray! Hurray! The problem is solved!! Thank you, Representative Heather Edelson and friends at Lexia Learning!

2023

Wisconsin assembly passes reading literacy, contraceptive, and alcohol overhaul bill. Thank God for people outside of education who can finally show us how to teach reading! Hurray! Hurray! All our problems are solved! Thank you, grumpy looking white guys. Now everybody will be reading above average!



Now, everybody's going to be reading above the 50th percentile! Hurray!! Hurray! All our problems are solved!!!

2026?

2030?

2035?

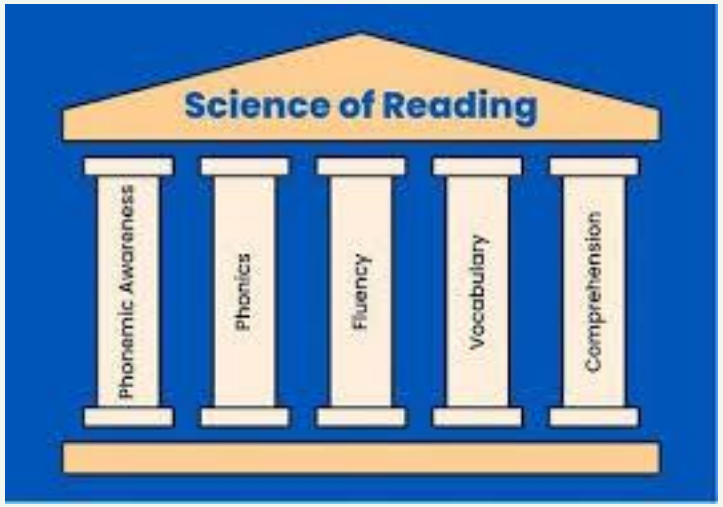
2040?

What will be the next shiny new thing that taxpayers will have to fund?

It's much easier to blame schools, teachers, and parents than to address social issues

- lack of school funding
- tuition affordability
- health care
- lack of nutrition
- poverty
- systemic racism
- economic inequality
- over-crowed classrooms
- gun violence
- climate change
- mental health
- income inequality

III. Pillars: National Reading Panel Pillars vs. Neurocognitive Approaches

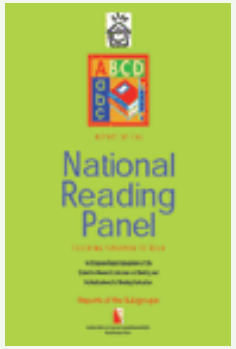


1. In 1997 congress asked the Director of the National Institute of Child Health and Human Development (NICHD) to work with the US Secretary of Education to establish a National Reading Panel.

2. Duane Alexander, the director of the National Institute of Child Health and Human Development, was a medical doctor.

3. Richard Riley, the Secretary of Education, had a degree in accounting.

- A physician and an accountant selected 14 people to serve as the National Reading Panel.
- They were given 18 months to evaluate existing research in order to find the best ways of teaching children to read.
- A very narrow range of research was selected to analyze.
- In 2000 the panel issued their 500-page report (National Reading Panel, 2000).
- This report has been widely cited in books and journal articles related to reading instruction.



Starting assumptions of the panel:

1. Reading is sounding out words.

2. Controlled experimental research is the only way to generate knowledge

3. Controlled experimental research is the only way to determine causal variables

4. All instruction must be based on controlled experimental research, conducted in a classroom using experimental or quasi-experimental design.

5. You can understand the whole by breaking it down into its parts.

6. Sounding-out-word measures capture the act of reading.

7. What is effective for struggling readers is effective for all readers.

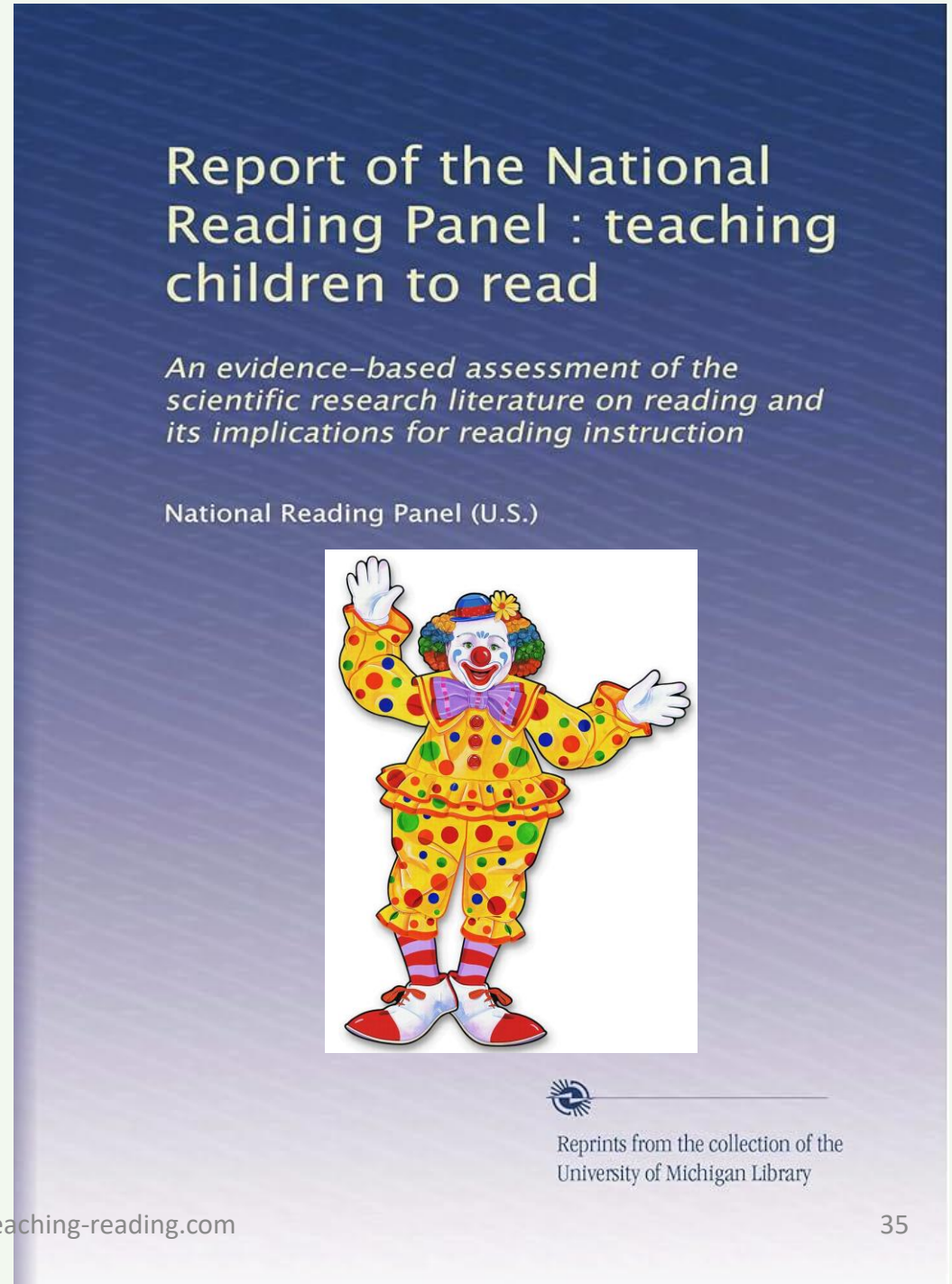
8. What works with one population works with all populations.

The Science of Reading, Phonics Instruction, and the National Reading Panel Report

The National Reading Panel was a political act

Not an academic act

Not a or scholarly act



- In 2000, the National Council of Teachers of English – founded in 1911, had been around for 90 years, had 77,000 members.

- In 2000, the International Literacy Association (formally, IRA) – founded in 1956, had been around for 40 years, had 300,000 members.

Let’s crunch the numbers …

Empirical data related to the National Research Panel.

Organization	Number of individuals	Time Frame	Research Models Considered
NRP	14	18 months	randomized controlled experiments
ILA	300,000	40 years	all
NCTE	77,000	90 years	all

Who decided that the research of these two organizations was ineffective?

Who decide that a government report was needed?

Why was there a need for a panel and a government report?

Who made this decision?

Who decided that information from the ILA and NCTE was not acceptable?

What data was used in making the decision to form a panel?

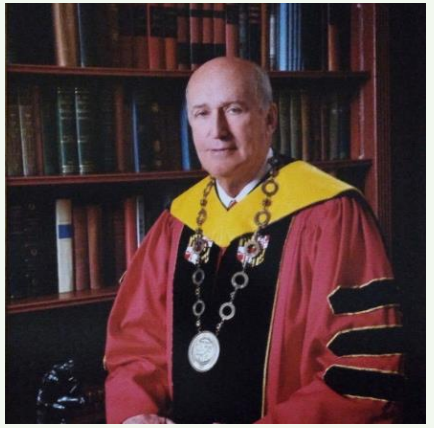
What literacy researchers were consulted in this decision?

Who stood to gain from the report?

Did anything new come from this report?

NRP was a political act, not an academic endeavor.

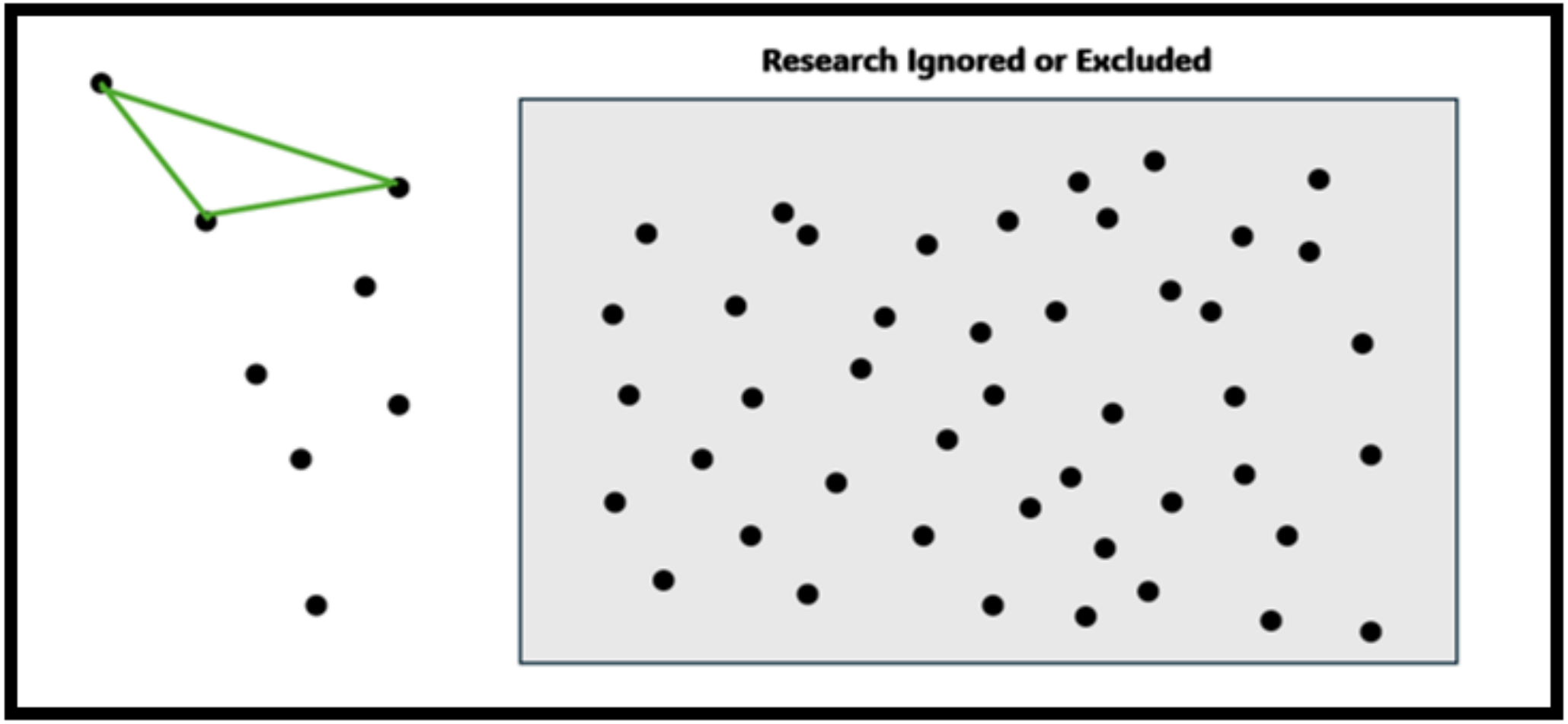
Chair



The chair of the panel was Dr. Donald Langenberg.

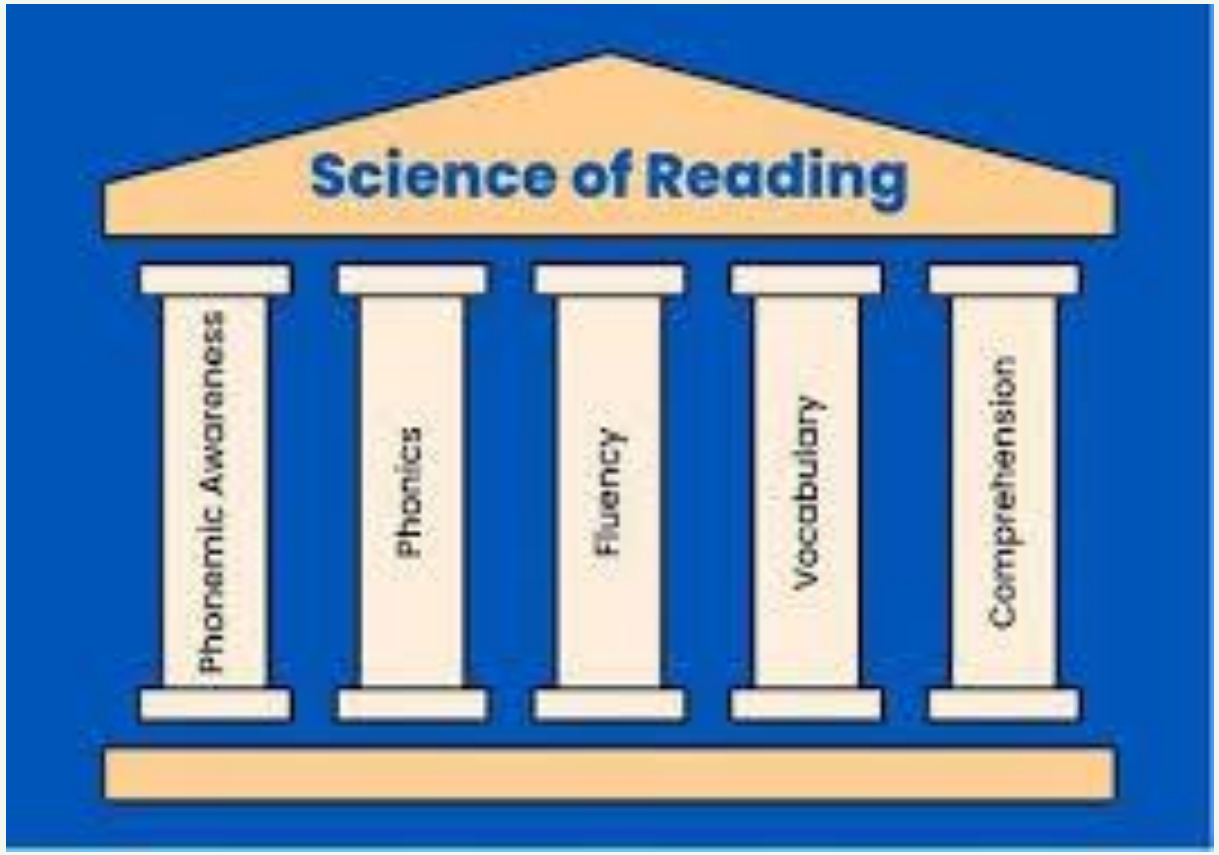
- On his website he is described as being a ground-breaking physicist.
- His B.S., M.S., and Ph.D. degrees are all in the area of physics.
- His research has been in experimental condensed matter physics and materials science.
- Dr. Langenberg was the Chancellor of the University of Illinois at Chicago.
- He's received many distinguished awards, held fellowships, sat on boards on boards, and served on advisory committees.
- He's written books and articles all related to science and physics.
- If I had a physics problem, he'd be the first person I'd call.
- If I was putting together a panel on reading …

The magical transformation of weak theories into robust theories.



The National Reading Panel (NRP) report in 2000 identified five elements that are key to reading success:

- Comprehension
- Fluency
- Vocabulary
- Phonics
- Phonemic Awareness



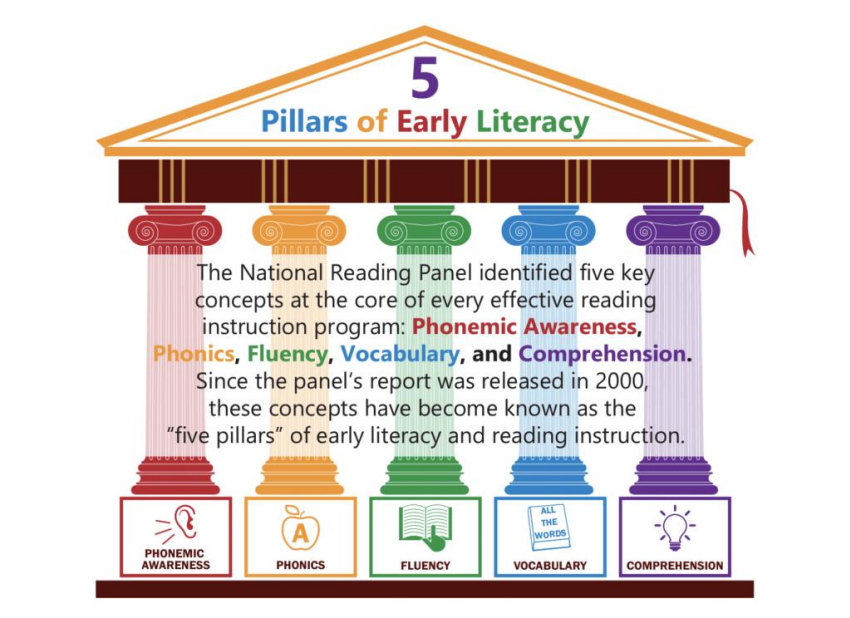
Wow!

Brilliant!

Ground-breaking!

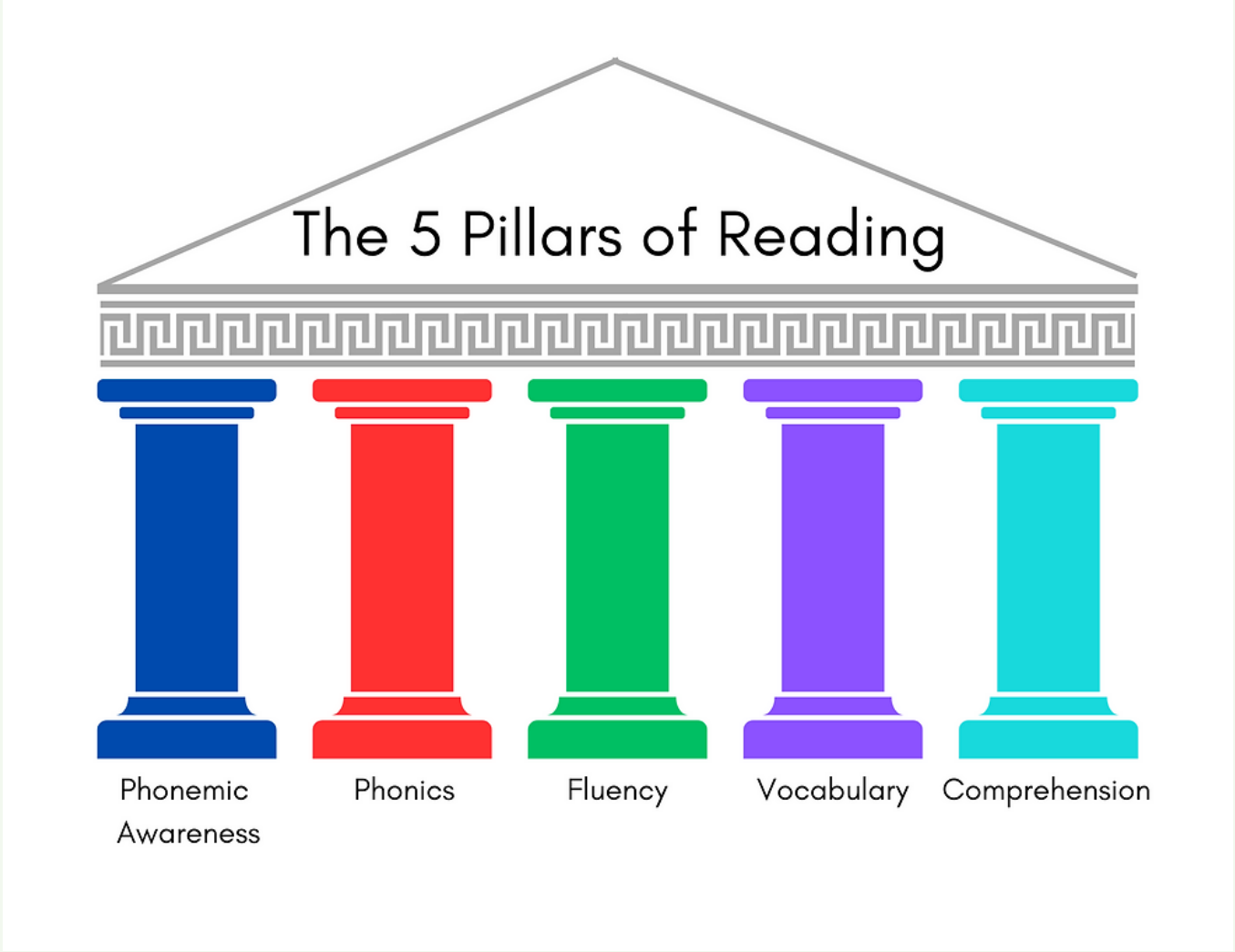
Thank you, National Reading Panel for giving us the key to reading instruction!!

An aside – the National Reading Panel came up with the big 5 pillars of reading instruction because that's what they were looking for. The five pillars didn't arise from their review of the literature. They decided to look for research in each of these five areas.



There was nothing new here. We were doing the 5 pillars long before the NRP came along. Kind of like Columbus "discovering" America.

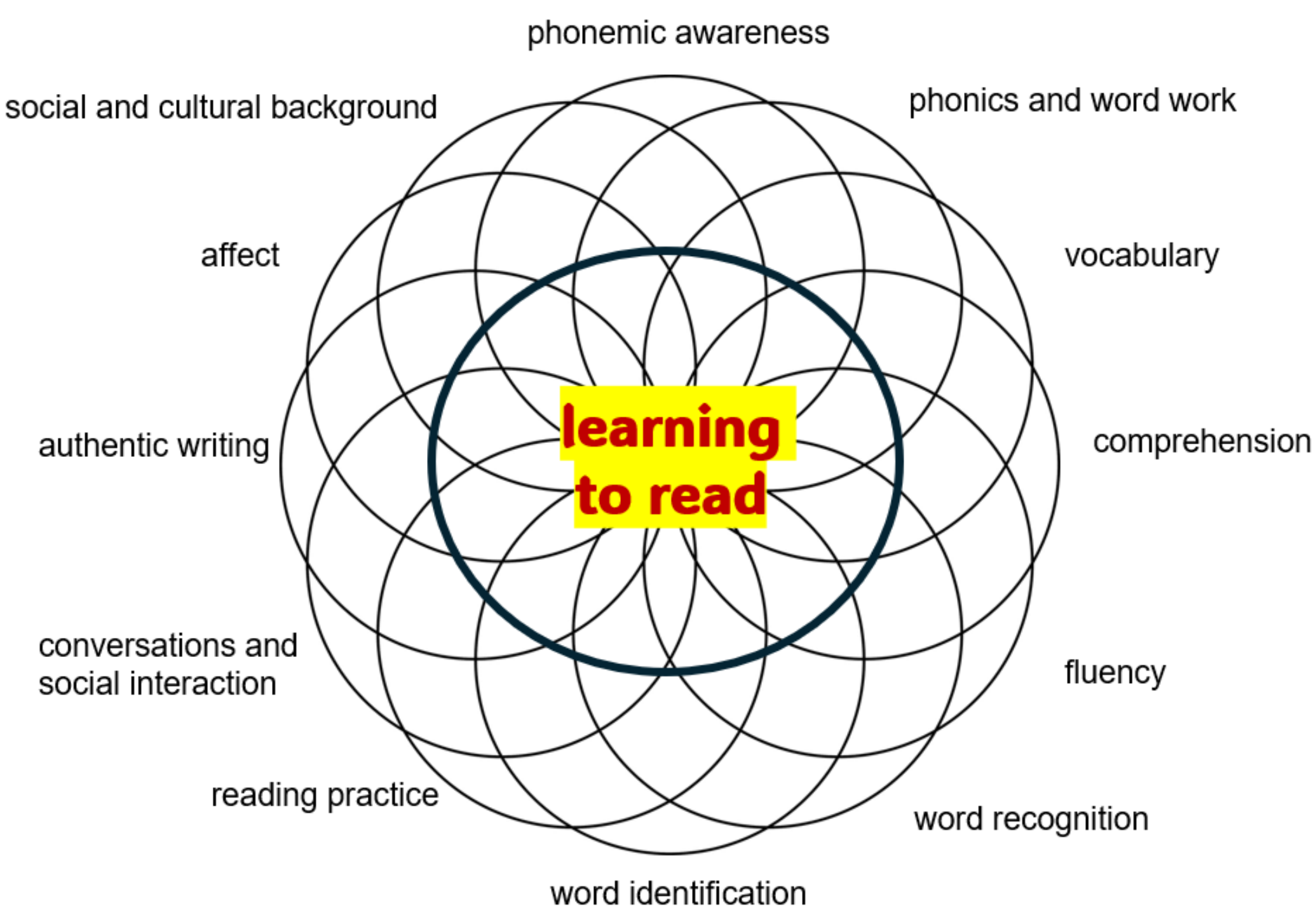
But … the 5 pillars are 7 pillars short of a full load.



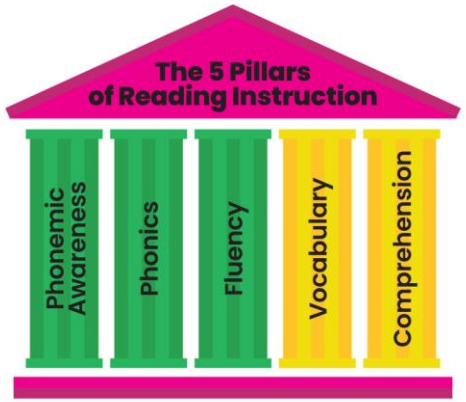
A neurocognitive approach: 12 interacting and interdependent elements.

12 Essential Elements
1. Phonemic awareness
2. Phonics and word work
3. Vocabulary
4. Comprehension
5. Fluency (if needed)
6. Word recognition: semantics, syntax, and phonics
7. Word identification: phonics, morphemic analysis, context, and analogy
8. Reading practice
9. Conversations and social interaction around books.
10. Authentic writing experience
11. Affect: motivation and emotion
12. Social and cultural background.

No algorithms or formulas.


phonemic awareness
social and cultural background
phonics and word work
affect
vocabulary
learning
to read
authentic writing
comprehension
conversations and
social interaction
fluency
reading practice
word recognition
word identification

Which column will enable all students to achieve their full literacy potential?

Comprehensive Literacy	The 5 Pillars	Science of Reading
1. Phonemic awareness 2. Phonics and word work 3. Vocabulary 4. Comprehension 5. Fluency (if needed) 6. Word recognition 7. Word identification: phonics, morphemic analysis, context, and analogy 8. Reading practice 9. Conversations and social interactions around books 10. Authentic writing experiences 11. Affect: motivation and emotion 12. Social cultural background +1. bi/multilingual learners need metalinguistic awareness	1. Phonemic awareness 2. Phonics and word work 3. Vocabulary 4. Comprehension 5. Fluency 	1. Phonemic awareness 2. Phonics and word work 

IV. A Neurocognitive View of Reading

Creating Meaning

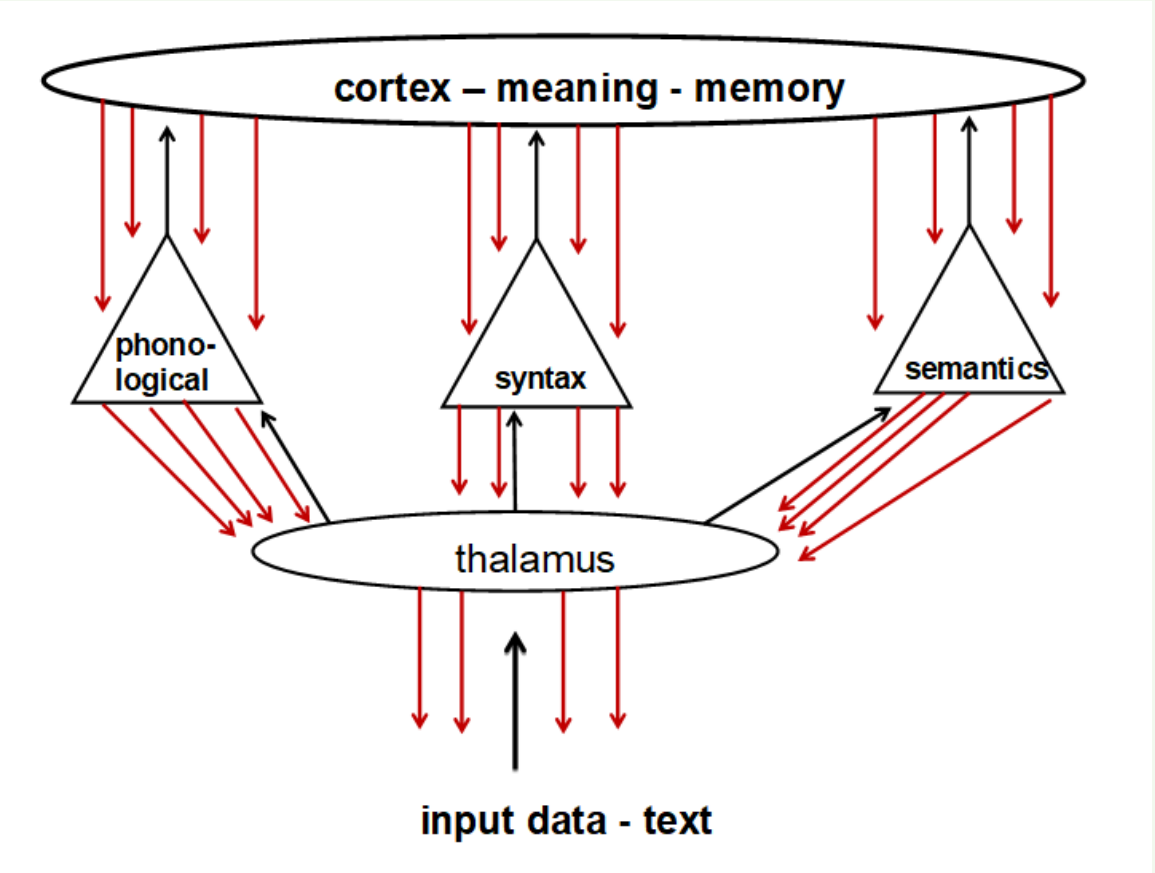
1. Reading is creating meaning with print

a. not sounding out words

b. not identifying words

c. not recognizing words

d. not decoding



Without understanding, you are not reading.

Read this:

Lectio significationem cum impressis creat. Non simpliciter verba sonantia. Si sensum non creas, non legeris. Tantum stimulis respondes. Haec est humili gradu peritia.

Reading is creating meaning with print. It is not simply sounding out words. If you are not creating meaning, you are not reading. You are merely responding to stimuli. This is a very low-level skill.

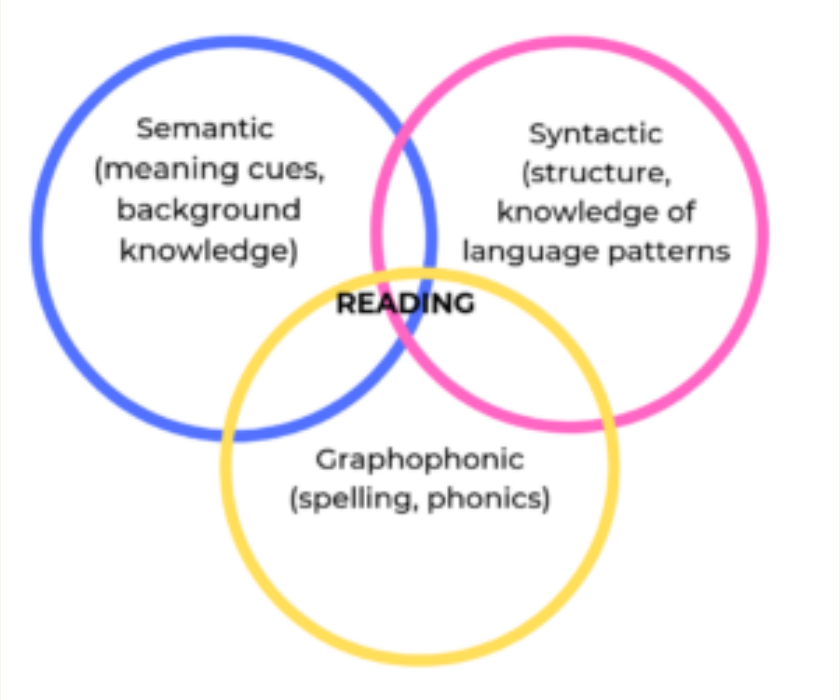
2. We use what's in our head to create meaning

a. with print

b. with the world

What's in our head helps us both perceive and understand reading and reality

3. Recognizing words is one part of reading - the brain uses 3 systems to recognize words during reading



Systems – various part of the brain work together.

4. Three cueing - developing what the brain does naturally to enable it to recognize words automatically and create meaning more efficiently

a. it is not teaching a skill to students

b. it is not a teaching strategy

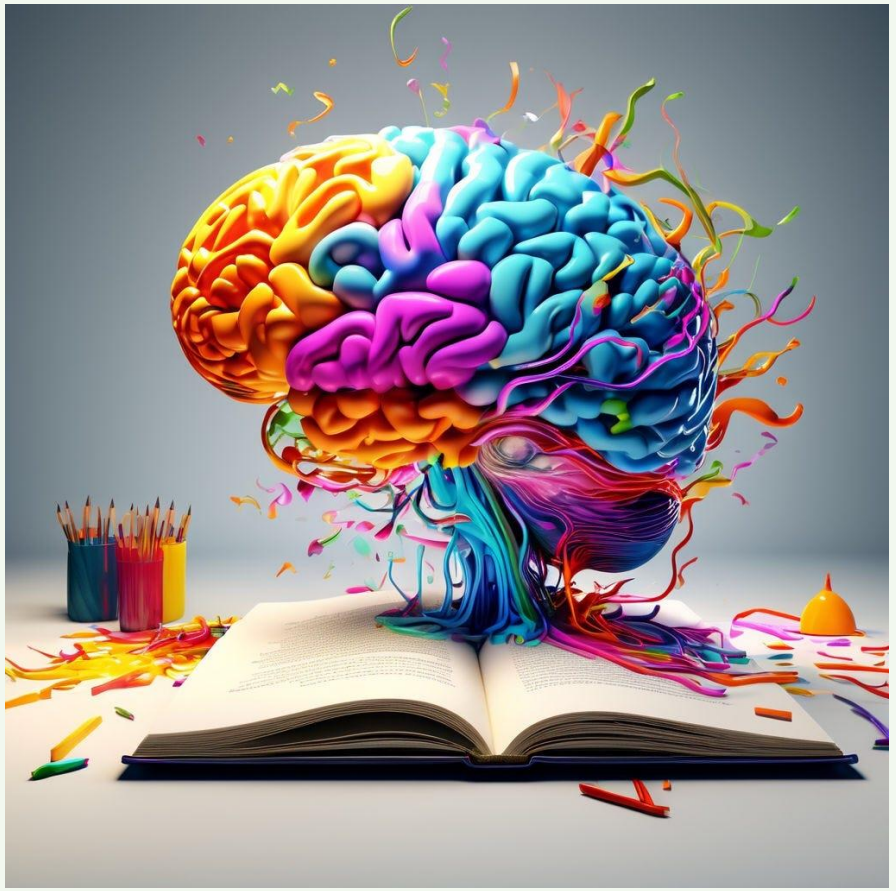
c. it is not an approach to teaching reading

d. it includes phonics instruction

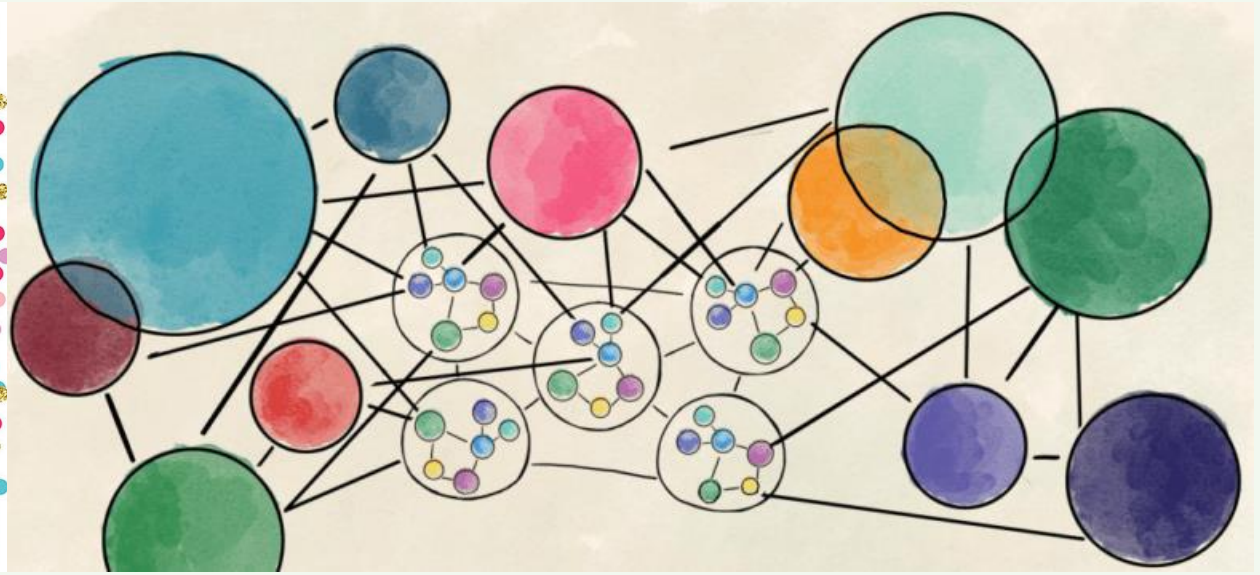
e. it does not teach children to guess as words

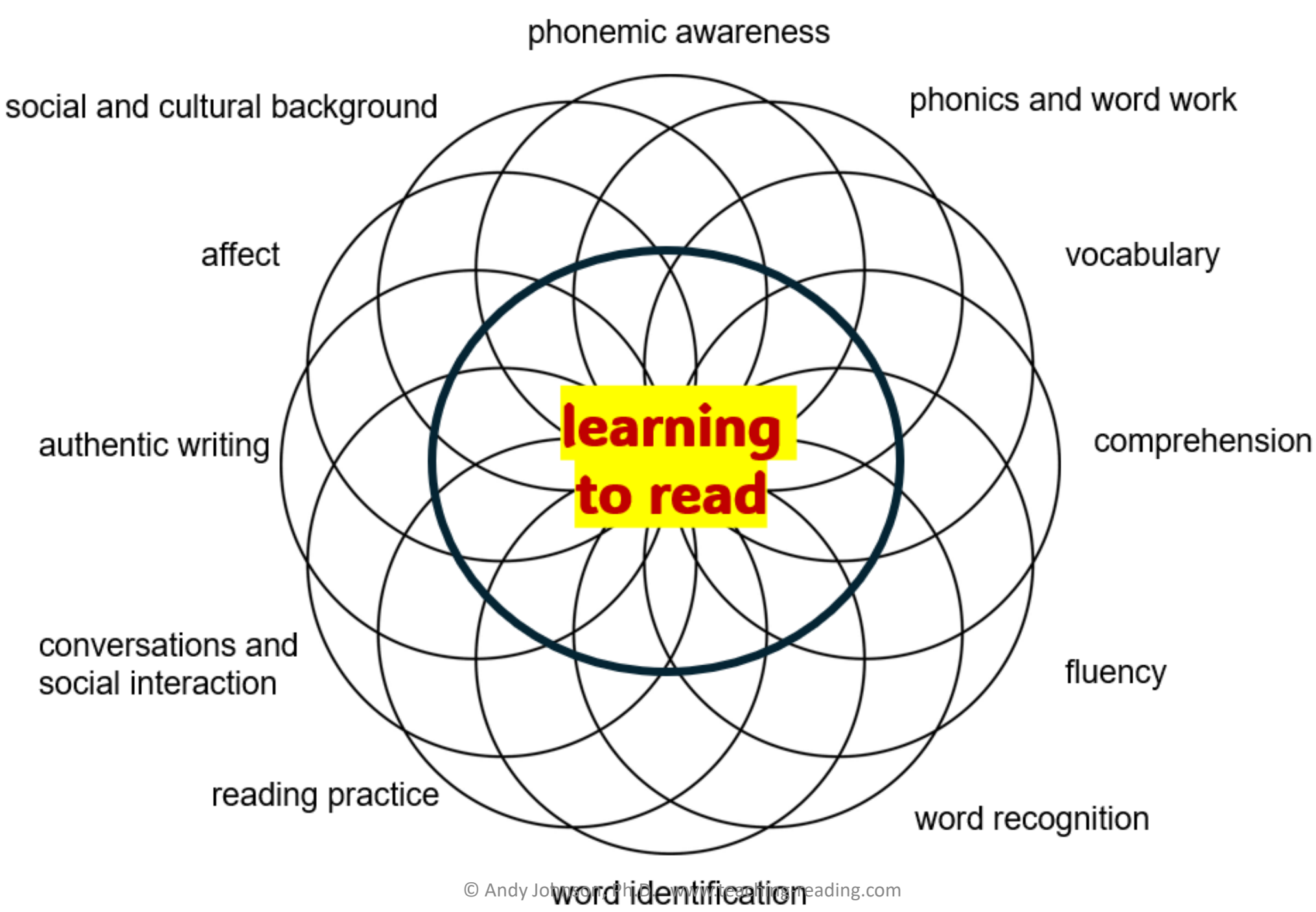
f. it does not teach children to look at pictures

g. it is not a communist plot to destroy America



V. A Neurocognitive Approach: 12 Interacting and Interconnected Elements




phonemic awareness
social and cultural background
phonics and word work
affect
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learning
to read
authentic writing
comprehension
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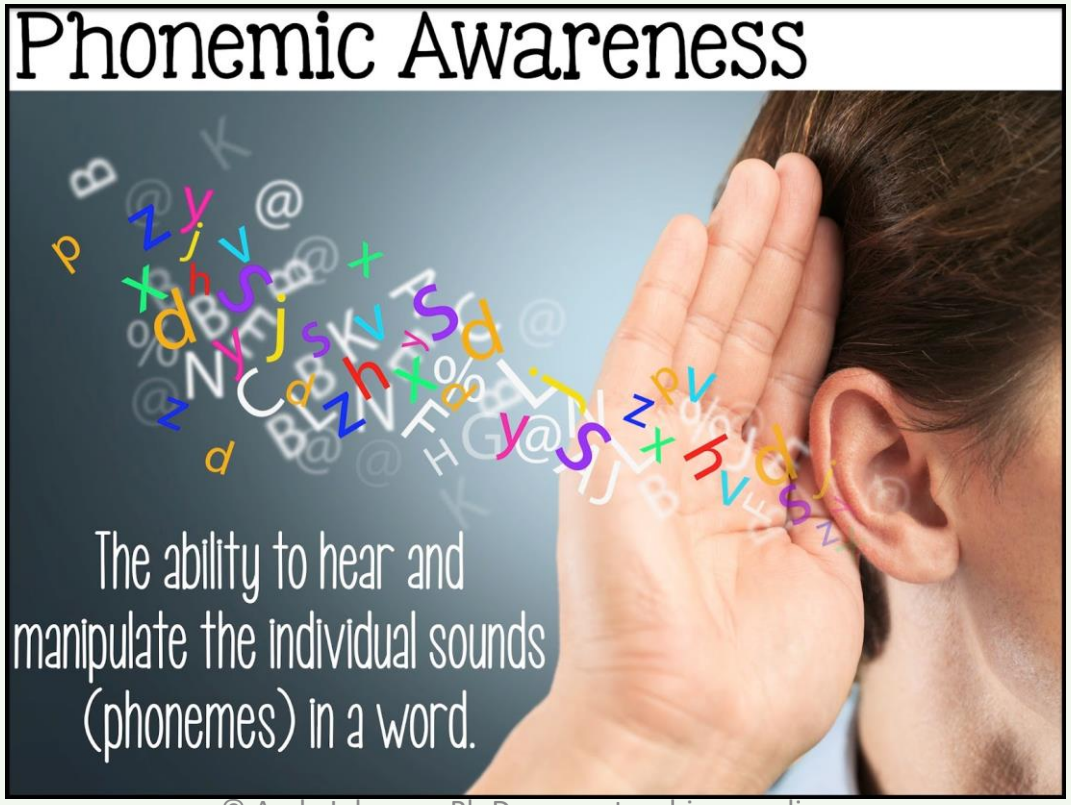
social interaction
fluency
reading practice
word recognition
word identification

1. Phonemic Awareness



1. Phoneme means sounds. Phonemic awareness has to do with the ability to identify and manipulate sounds within words.

2. High phonemic awareness scores are correlated with higher levels of achievement.

a. correlation does not infer causation

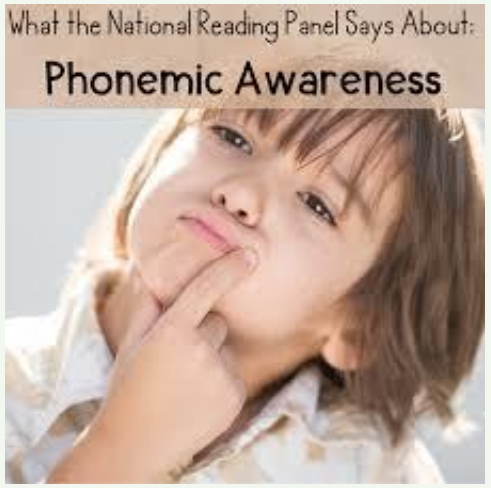
b. NRP research is correlational

3. Research may show that a certain amount of something to be effective for a certain group, at a certain level, for a certain purpose – but this does not mean that it applies universally to all students at all levels for all purposes

a. simplistic, naive understanding of research

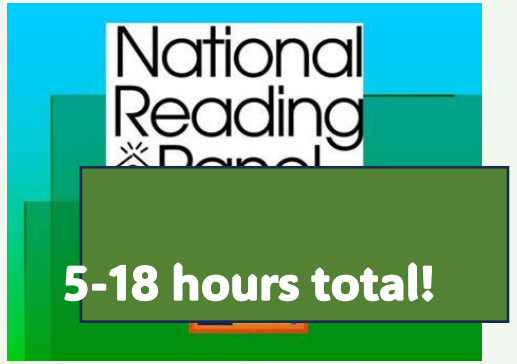
Expertise is important. I am sure Emily Hanford is a very good radio journalist. But why would we assume that she has the ability to put information related to reading instruction into a meaningful context or to accurately understand and translate reading research? Being on the radio does not make one an expert on anything other than being on the radio.

4. If a little of something is good, that does not mean that more of something is better.



The National Reading Panel report, "*In the NRP analysis, studies that spent between 5 and 18 hours teaching PA yielded very large effects on the acquisition of phonemic awareness*" (NRP, 2000, page 2-41).

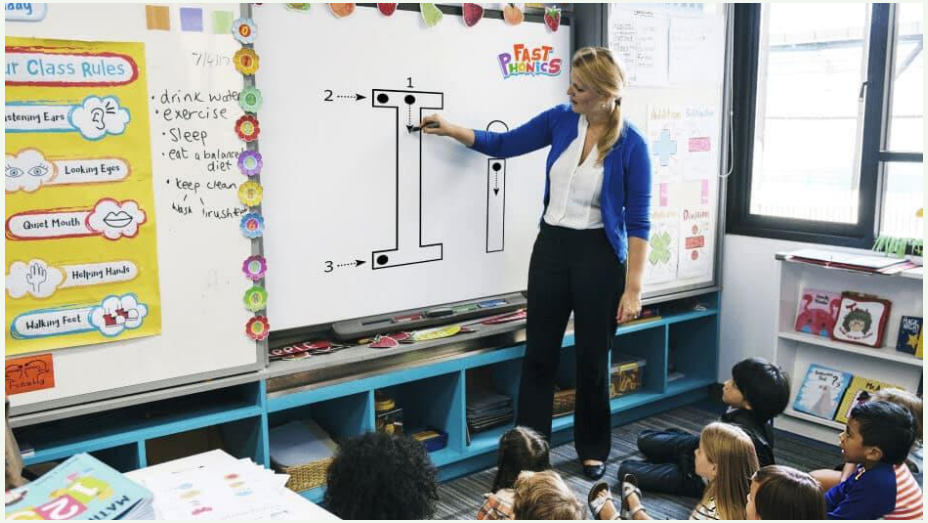
"Transfer to reading was greatest for studies lasting less than 20 hours" (NRP, 2000, page 2-42).



2. Phonics Instruction and Word Work

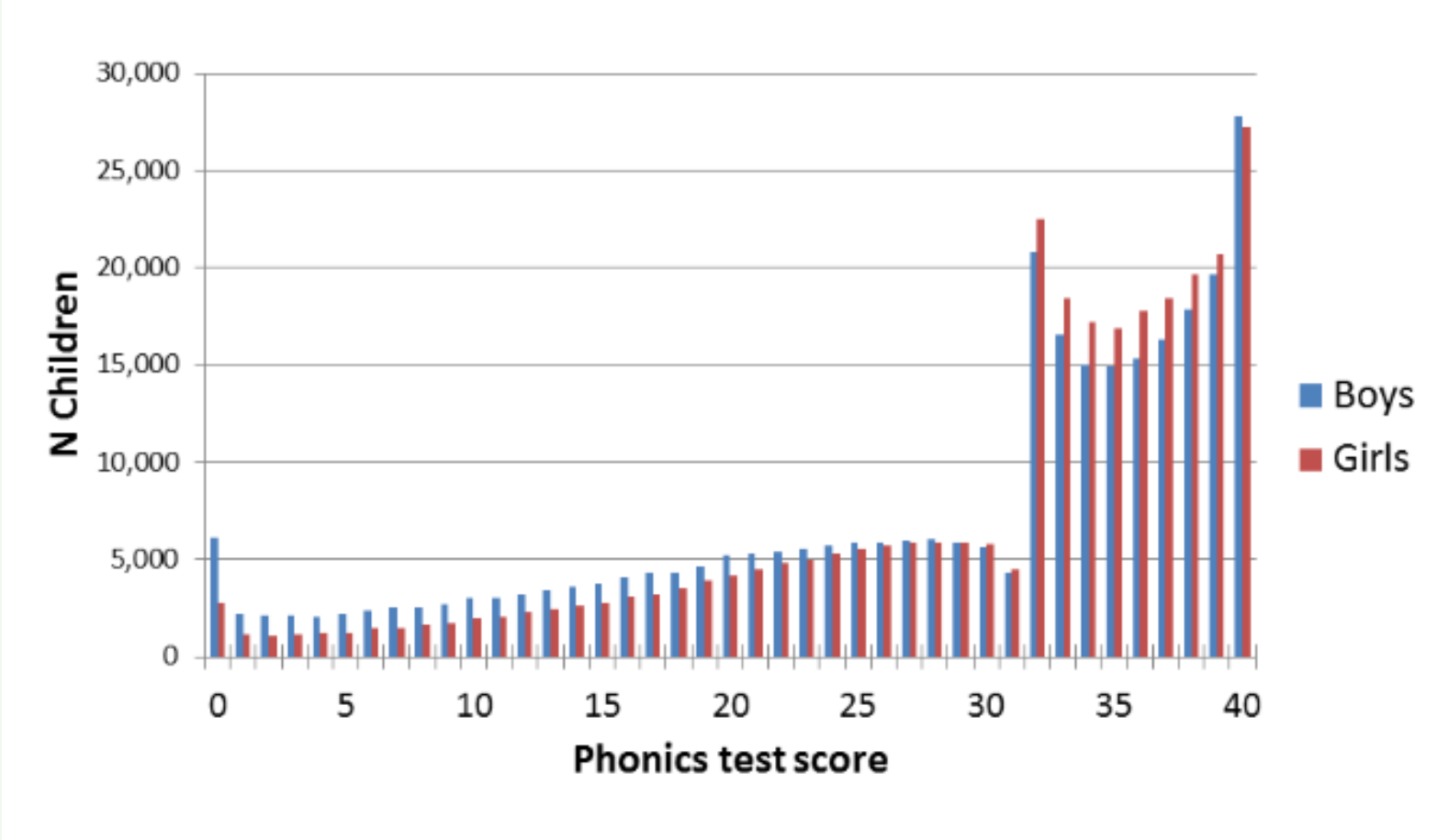
1. Everybody believes in phonics instruction

2. It's not the 'what' of phonics instruction, it's 'how' and 'how much' of phonics in which there are varying views.



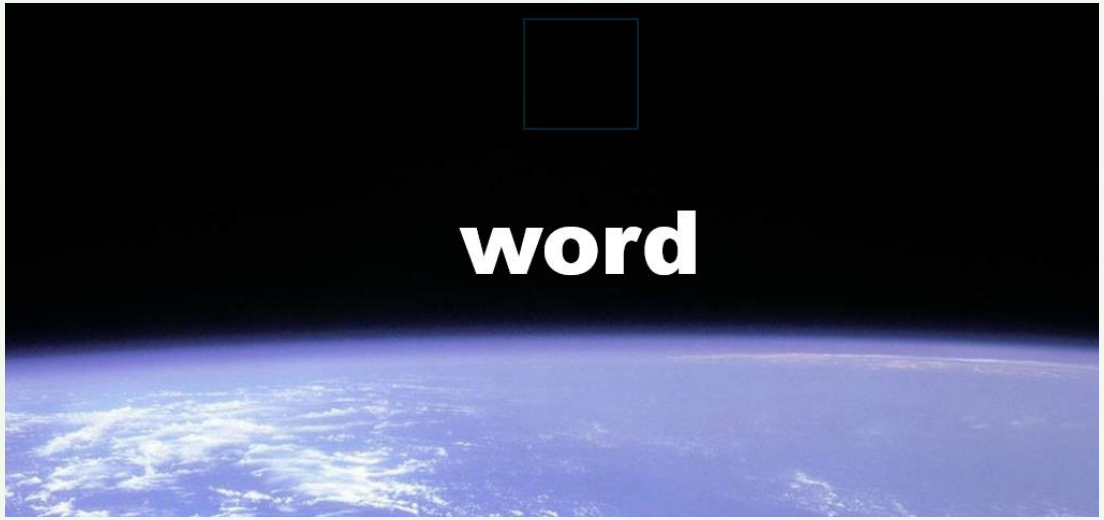
3. Phonics instruction has shown to be very effective in raising scores on measures of phonics.

Duh!

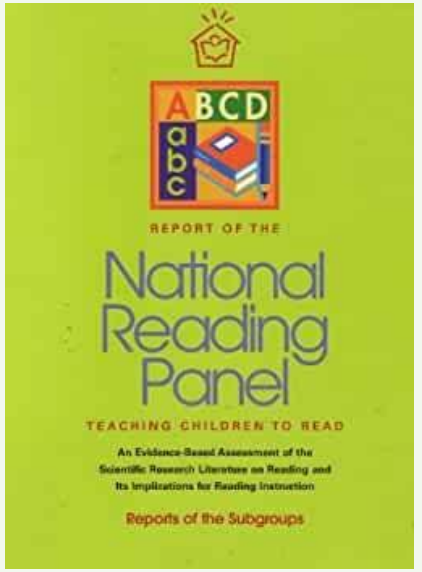


4. If reading were merely sounding out word, this finding might be significant.

But it's not and it's not.



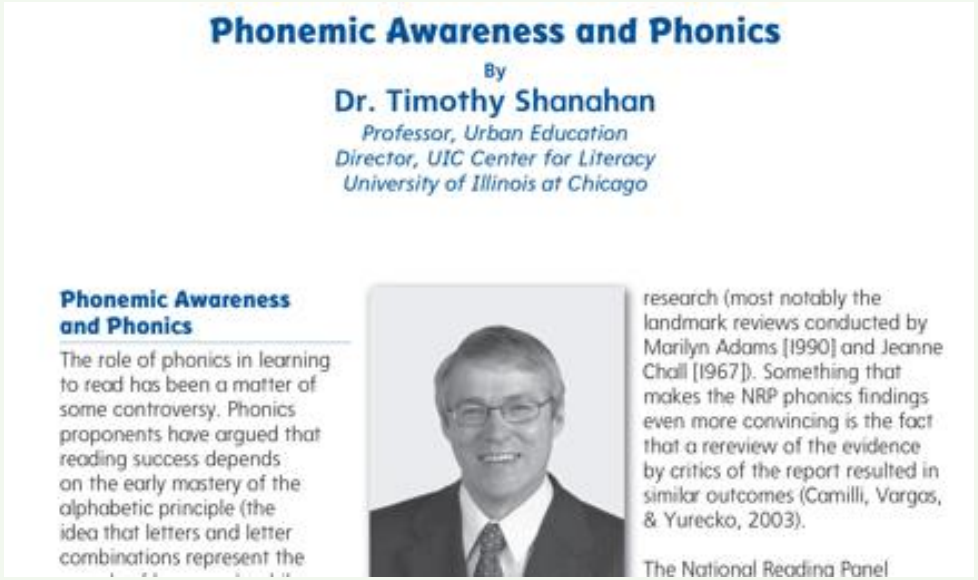
Common SoR claim: The National Reading Panel Report provides irrefutable evidence that phonics should be at the center of all reading instruction.



Some NRP findings related to phonics instruction:

- Systematic phonics instruction is more effective in helping students read single words out of context and pseudowords than unsystematic phonics or non-phonics instruction.

(Something produces better results in something than nothing does.)



Phonemic Awareness and Phonics

By

Dr. Timothy Shanahan

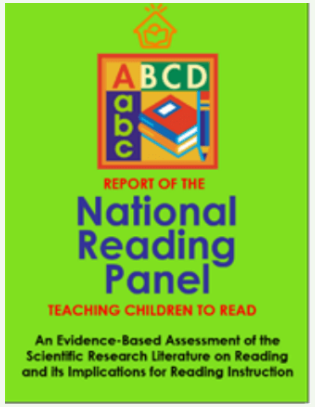
Professor, Urban Education
Director, UIC Center for Literacy
University of Illinois at Chicago

Phonemic Awareness and Phonics

The role of phonics in learning to read has been a matter of some controversy. Phonics proponents have argued that reading success depends on the early mastery of the alphabetic principle (the idea that letters and letter combinations represent the

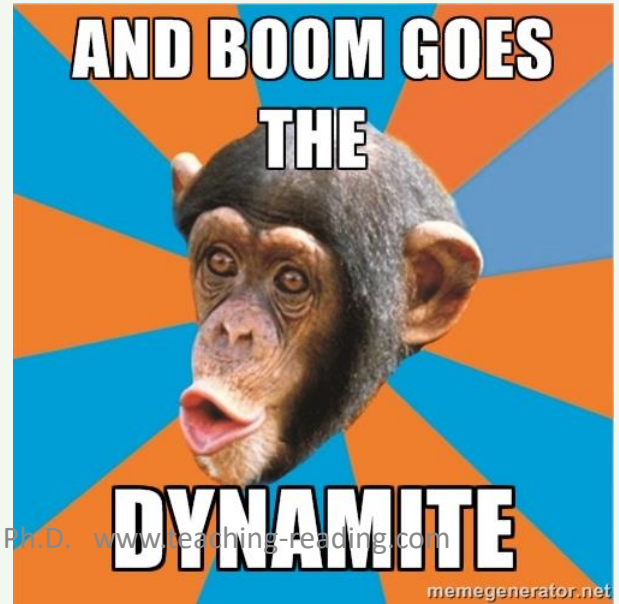
research (most notably the landmark reviews conducted by Marilyn Adams [1990] and Jeanne Chall [1967]). Something that makes the NRP phonics findings even more convincing is the fact that a rereview of the evidence by critics of the report resulted in similar outcomes (Camilli, Vargas, & Yurecko, 2003).

The National Reading Panel



Limited Impact of Phonics

- The impact of phonics on comprehension is limited.
- Phonics instruction contributed only weakly, if at all, in helping poor readers apply these skills to read actual text.
- There were insufficient data to draw any conclusions about the effects of phonics instruction with normally developing readers above 1st grade.
- Phonics instruction fails to exert a statistically significant impact on poor readers in 2nd through 6th grade.

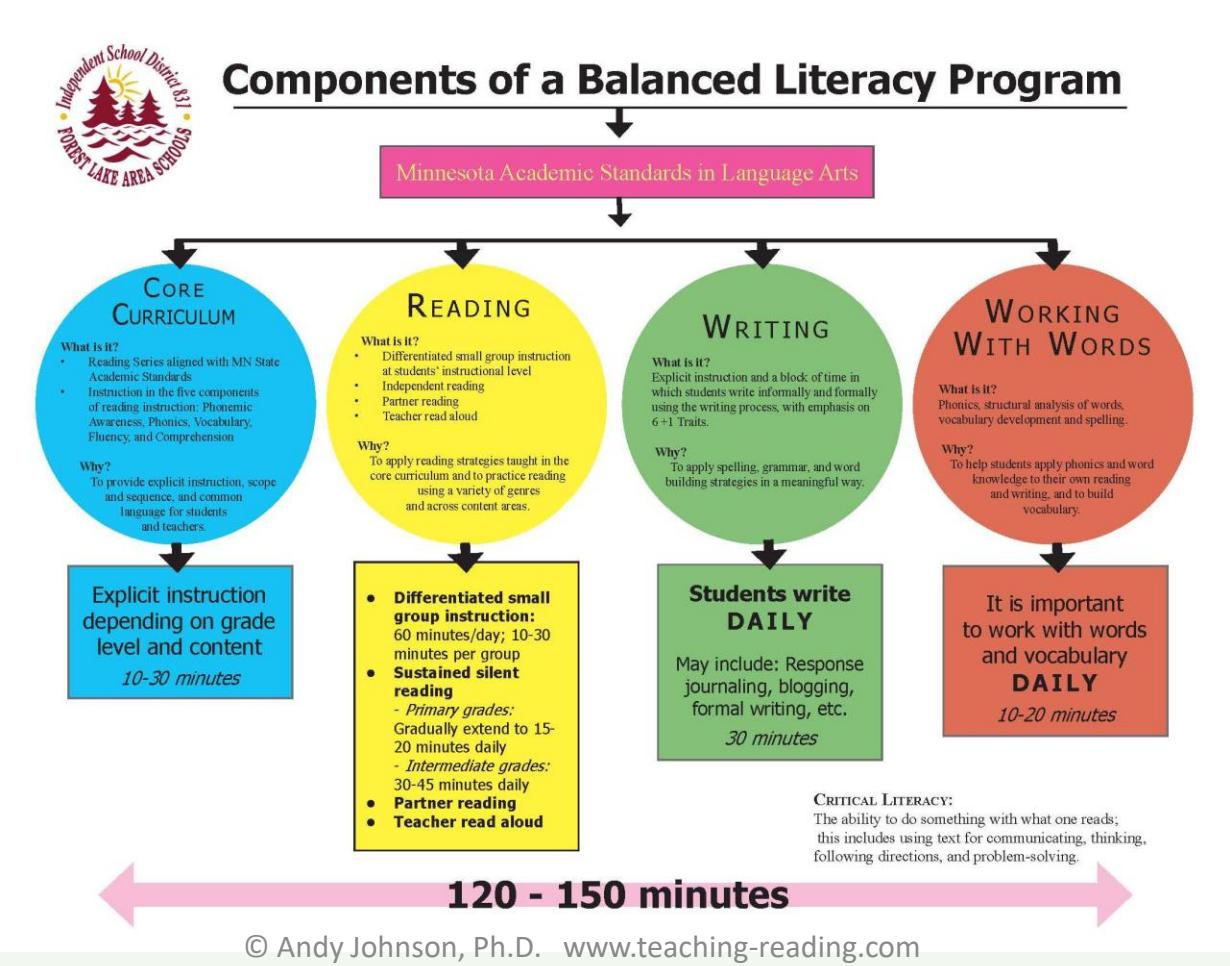


There are several ways to teach phonics. ***Each is equally effective***.

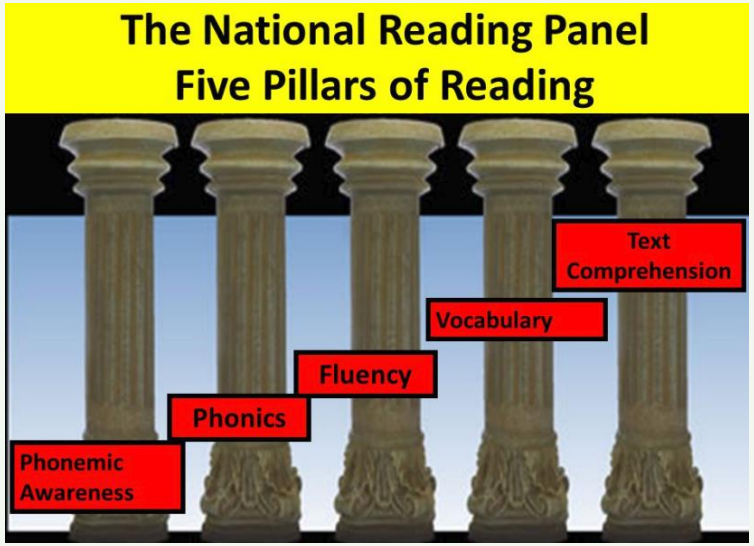
- ***synthetic phonics***
- ***analytic phonics***
- ***embedded phonics***
- ***analogy phonics (large unit phonics)***
- ***onset-rime phonics***
- ***phonics through spelling***

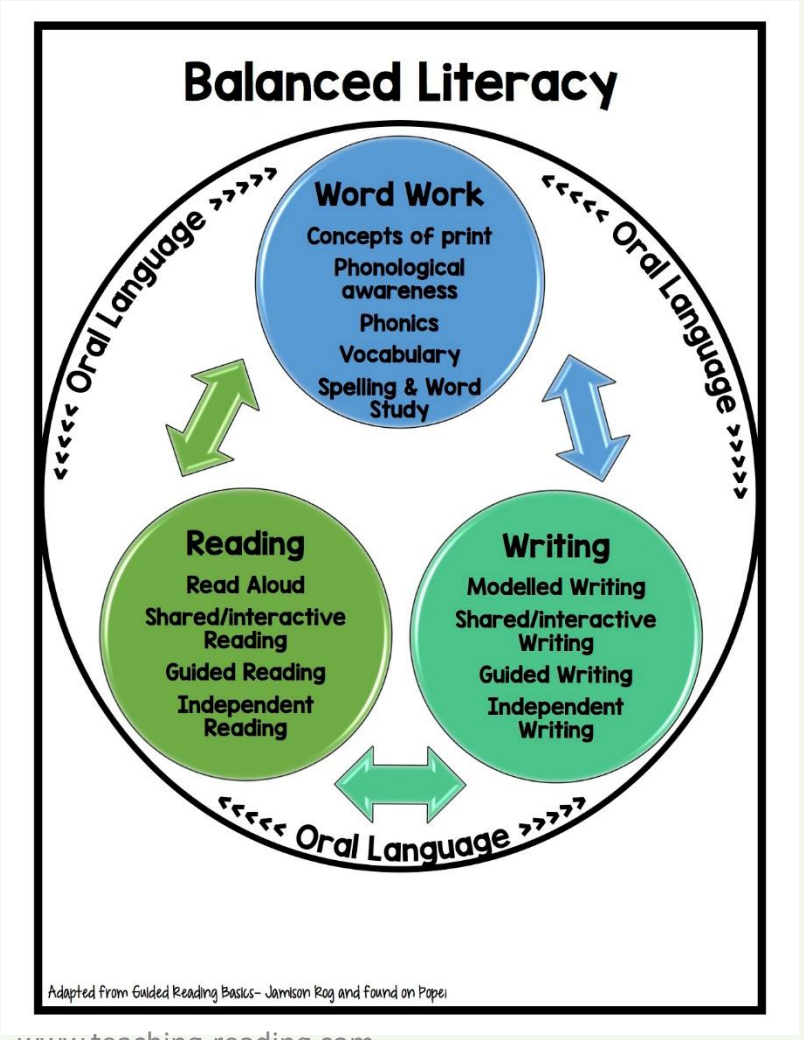
Common SoR claim: A balanced approach to literacy instruction does not include direct, systematic and explicit phonics instruction.

1. Balanced literacy is not a singular approach.



2. Skills-based instruction must be balanced with experiences to practice those skills in authentic reading and writing context.





3. A sliding continuum. One size does not fit all.

A Balanced Literacy Program

There is a balance between skills instruction and authentic reading and writing.

continuum

Skills-based

Meaning-based

There is not standardized approach or method called "balanced instruction".

Looks a little different in every teachers' classroom.

4. What is considered “balanced” varies.

12 Essential Elements
1. Phonemic awareness
2. Phonics and word work
3. Vocabulary
4. Comprehension
5. Fluency (if needed)
6. Word recognition: semantics, syntax, and phonics
7. Word identification: phonics, morphemic analysis, context, and analogy
8. Reading practice
9. Conversations and social interaction around books.
10. Authentic writing experience
11. Affect: motivation and emotion
12. Social and cultural background.

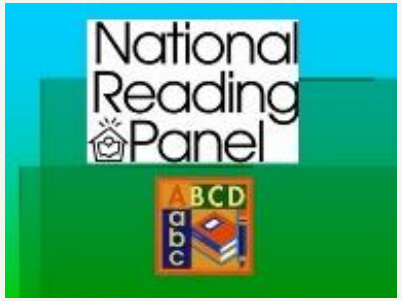
NRP on Balanced Literacy Instruction

- Programs that focus too much on the teaching of letter-sounds relations and not enough on putting them to use are unlikely to be very effective. Students need to apply their skills in daily reading and writing activities.

- Program that focus too much on phonics with little time spent practicing reading (books) are likely to be ineffective.

- "Systematic phonics instruction should be integrated with other reading instruction to create a **balanced reading program**" (p. 2-97).

- "Phonics should not become the dominant component in a reading program, neither in the amount of time devoted to it nor the significance attached" (p. 2-97).



3. Activities to Develop Word Knowledge (Vocabulary)

1. What does vocabulary instruction look like?

2. Children learn between 3,000 and 5,000 words a year.

General Principles

1. Promote wide reading.

2. Model sophisticated word usage.

3. Provide contextual and definitional information

Graphic organizer for 6PV lesson.

<table>
<tr><td colspan="2">Context: Present the target word in the context of a sentence or paragraph.</td></tr>
<tr><td colspan="2">Infer: Ask students to make at least three inferences or informed guesses based on the context.
1.
2.
3.</td></tr>
<tr><td colspan="2">Definition: Define the word used simple, kid language.</td></tr>
<tr><td>Synonyms or descriptors: Students list at least words or phrases that would be synonyms or descriptors.
1.
2.
3.</td><td>Associations: List at least three things that would be related to or associated with the word.
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4. Connect new to the known.

Synonyms and associations.

The football player was very **aggressive**. He ran hard and fast.	
Aggressive: Doing something forcefully or with strong energy.	
SYNONYMS	**ASSOCIATIONS**
violent hostile hard action forceful belligerent strongly assertive forward angry energy combative - willing to fight	MMA fighters tornados hungry tigers angry arguments pushing and shoving rushing to the front of the line bullies

5. Provide multiple exposures

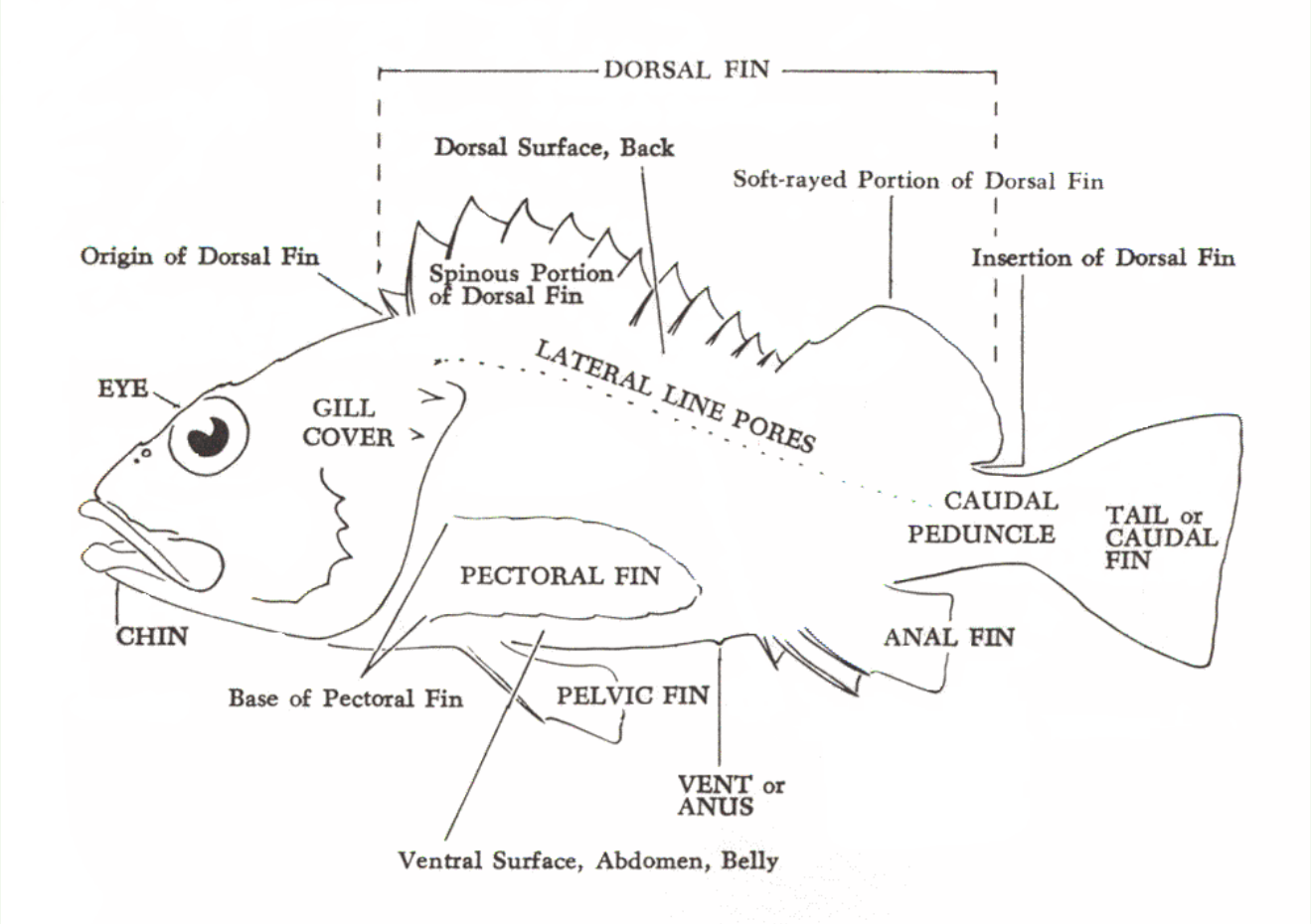
6. Promote active, in-depth processing of words.

a. associative level - students make connections between one word and another through synonyms and association.

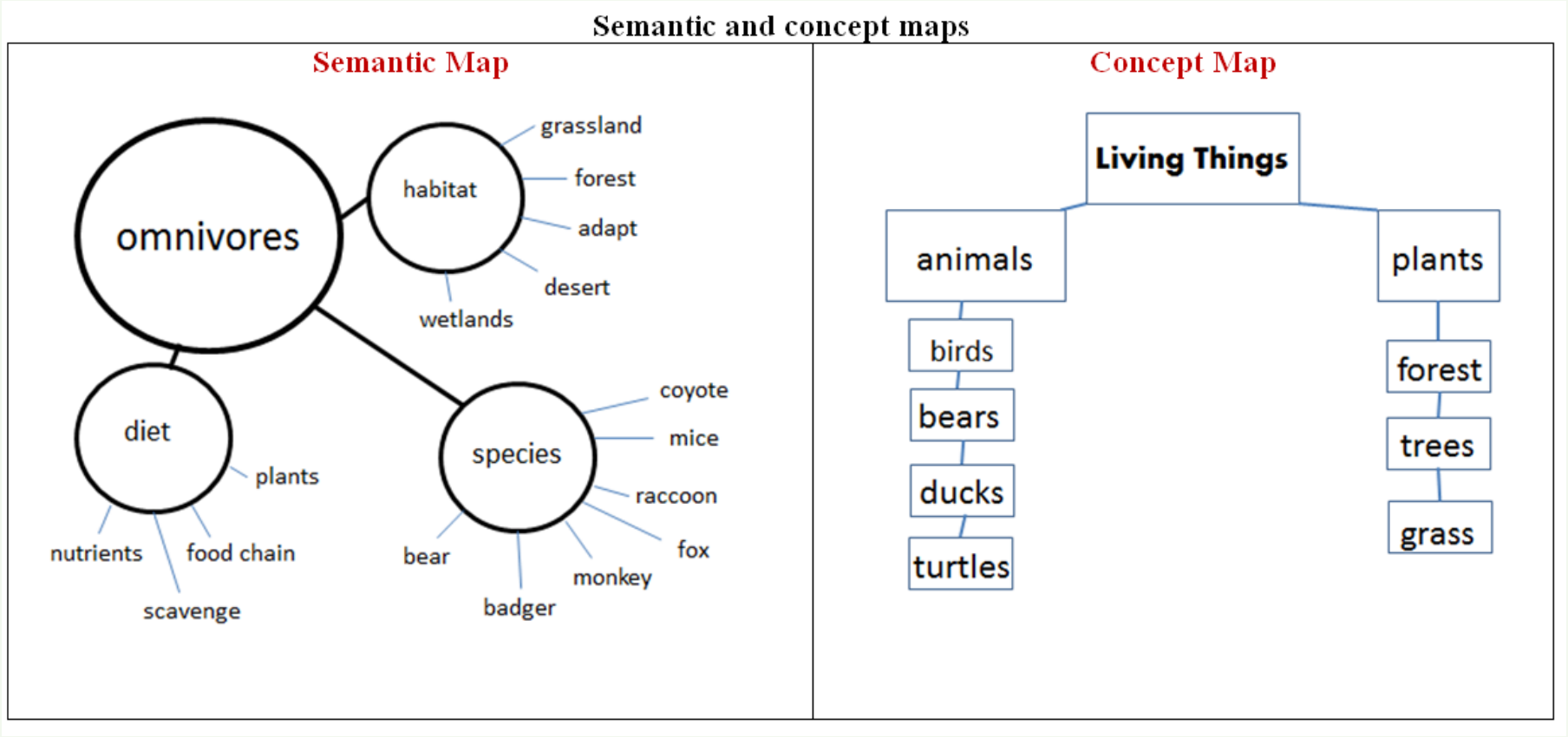
b. comprehension level - students demonstrate their understanding of a word.

c. generational level - students use a word in new way.

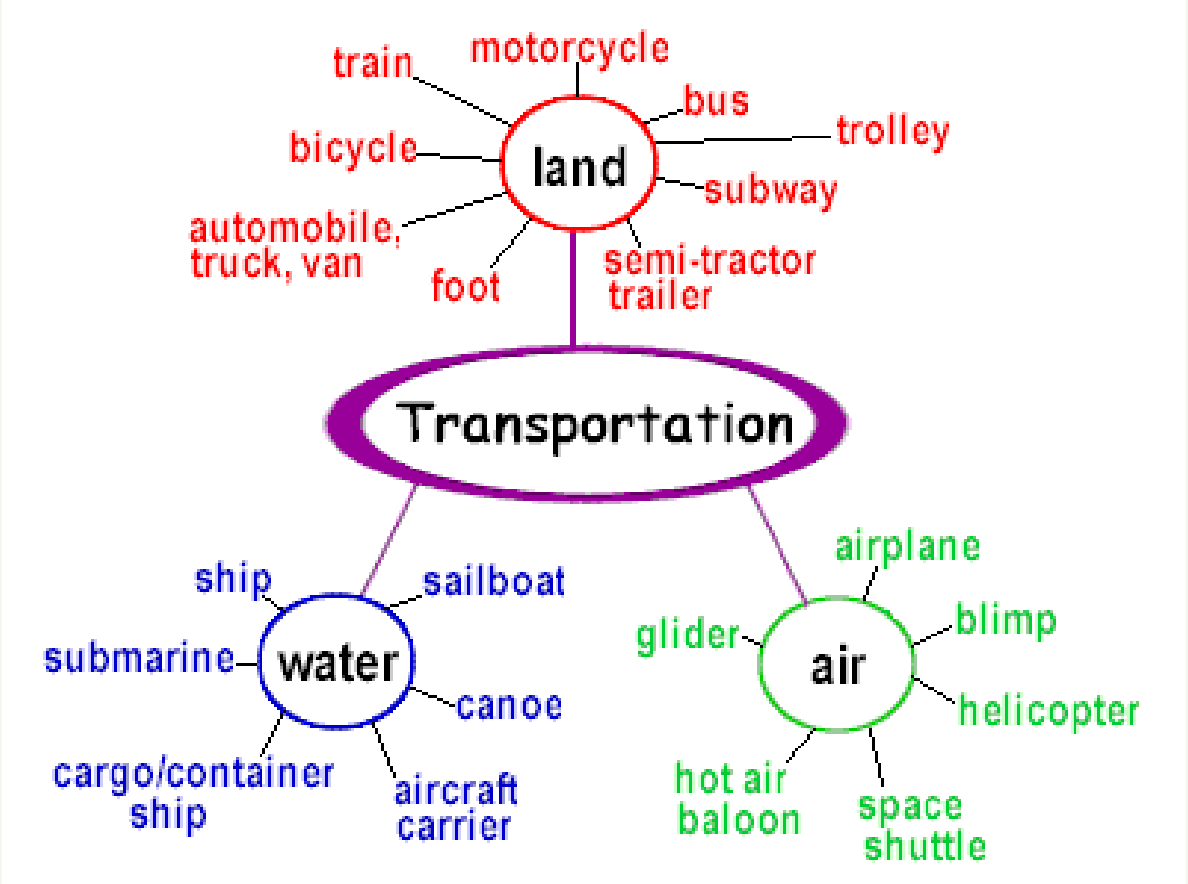
7. Connect word learning to concept learning



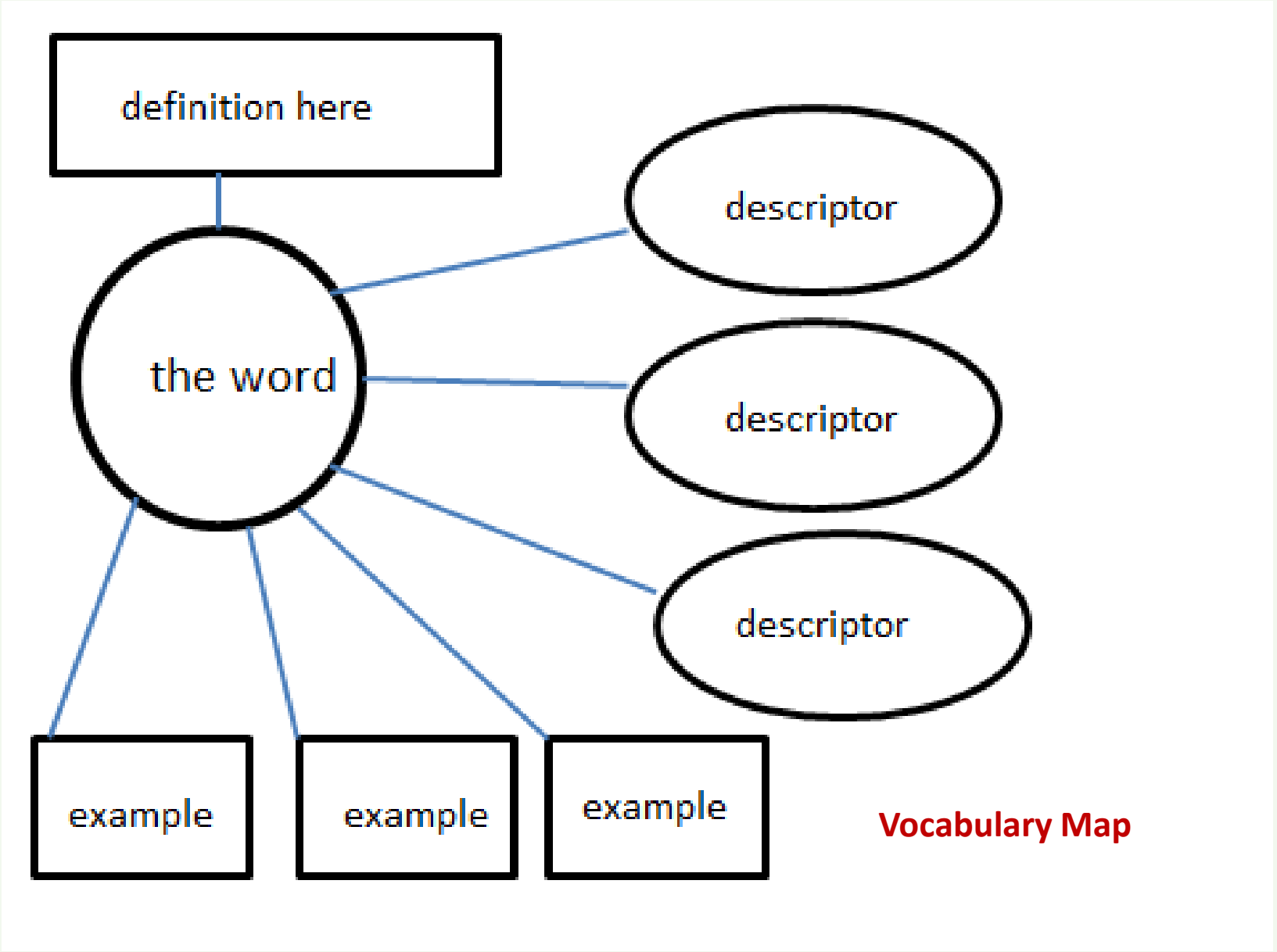
- **Semantic maps and concept maps**
- **Pre-post for reading or lesson**



Context – vs. words in isolation



Context – vs. words in isolation



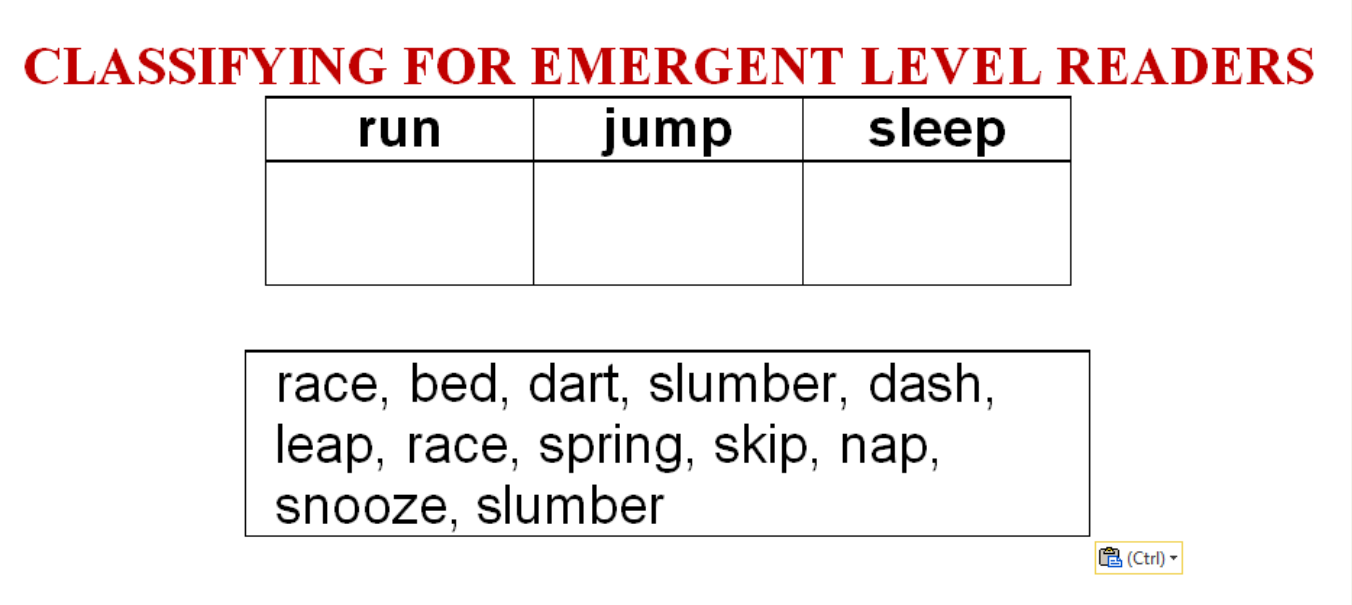
Vocabulary Map

Classifying

1. Students are given words related to one of the target words: synonyms or associations

2. Students put words into the correct category (use 3x5 cards for younger students)

3. Can create posters

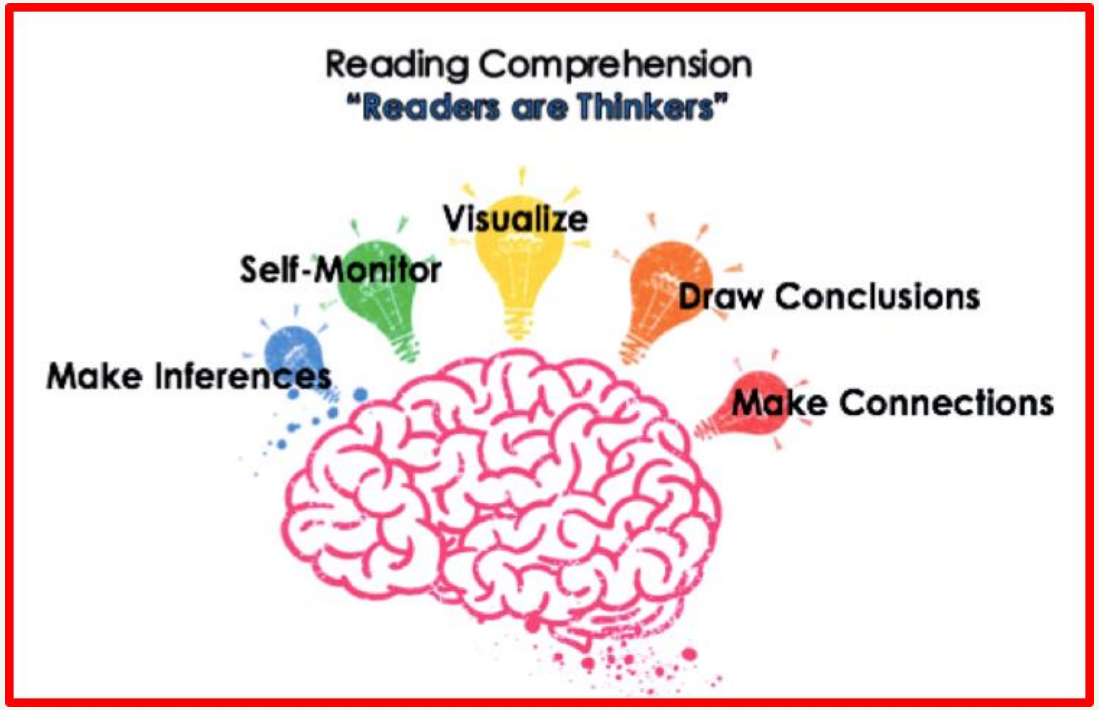


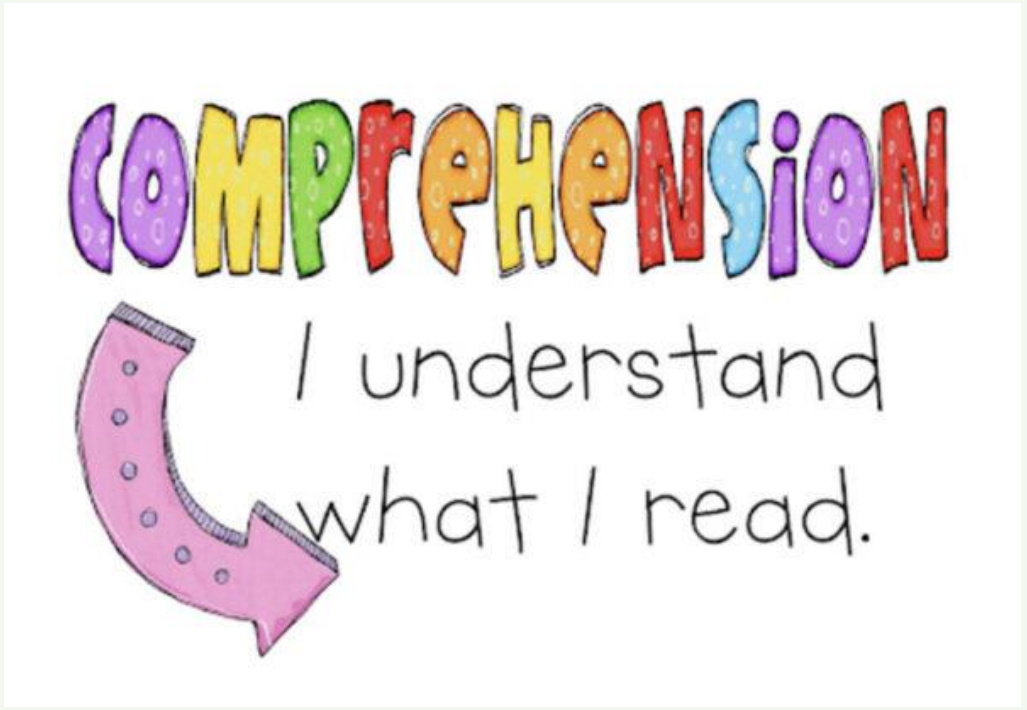
CLASSIFYING FOR BEGINNING LEVEL READERS AND ABOVE

eat	sit	roll	jump	run	hunt	sleep
feed dine swallow munch	rest take a seat perch settle	turn whirl spin	leap spring skip	race dash dart	stalk look for chase	dose nap snooze slumber

feed, nap, snooze, slumber, dine, swallow, race, dash, dart, stalk, look for, chase, munch, rest, take a seat, spring, skip, turn, whirl, perch, settle, spin, leap, dose

4. Comprehension Instruction





* We read for two purposes – (a) to enjoy good stories or (b) understand text).

* There are two parts to comprehension.

Part 1. Develop Cognitive Processes Related to Narrative Text

1. Comprehension involves thinking (cognition)

2. Improve comprehension by improving thinking

a. teach the process to develop the skill

Cognitive processes related to effective comprehension

1. compare	7. problem solve	13. predict
2. respond aesthetically	8. analyze	14. recognize story grammar
3. infer	9. evaluate	15. reflect: metacognition
4. identify important ideas	10. make connections	16. visualize
5. Identify supporting details	11. order	17. question
6. identify cause-effect relationships	12. inductive analysis	18. summarize

3. Automaticity (cognitive process) is the goal

1. compare	7. problem solve	13. predict
2. respond aesthetically	8. analyze	14. recognize story grammar
3. infer	9. evaluate	15. reflect: metacognition
4. identify important ideas	10. make connections	16. visualize
5. Identify supporting details	11. order	17. question
6. identify cause-effect relationships	12. inductive analysis	18. summarize

Cognitive Processes

- **Thinking processes -- Cognitive operations – steps**

- **High level thinking – not automatic**

4. Efficient readers approach narrative and expository text differently

5. Effective teachers design different types of activities for narrative and expository text

Provide prediction question up front. Students then read with purposeful intent.

Predict-O-Graph **What do you think will happen when …**	Page #
Clues 1. 2. 3.	
Your predication:	

Provide inference question up front. Students then read with purposeful intent.

Infer-O-Graph **Inference Question:**	Page #
Clues 1. 2. 3.	
Your inference:	

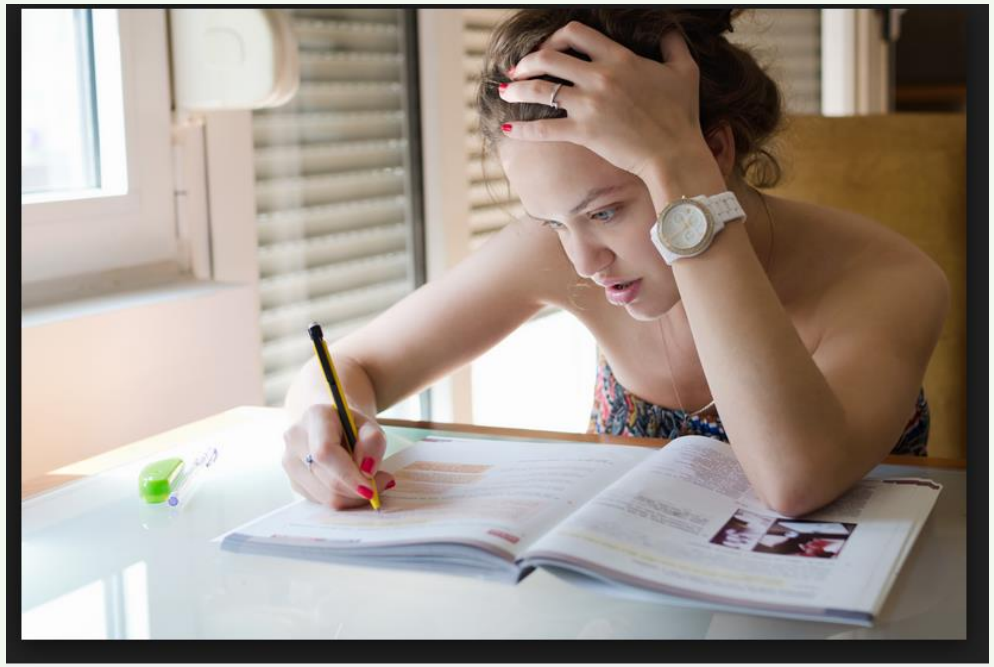
Provide cause or effect up front. Students read with purposeful intent.

CAUSE	EFFECT	Page #
Bob stood up on the bus		
Space aliens grabbed Bob		

CAUSE	EFFECT	Page #
	Bob was slammed to the floor.	
	The spaceship dropped Bob.	

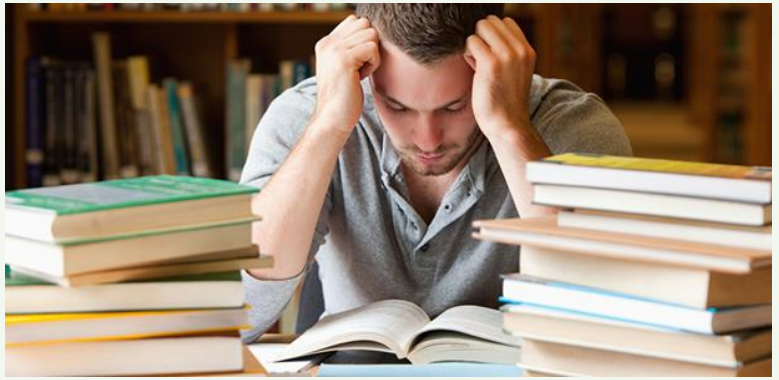
Part 2: Teach Study Skill Strategies Related to Comprehension

Study skill strategies are thinking processes consciously employed by student



5-step basic note-taking strategy.

1. Write the title of the article or chapter on top of the page
2. Write the name of the heading (underline it).
3. Select only the most important ideas from each paragraph
4. Record the idea using short, abbreviated (incomplete) sentences
5. Recording supporting ideas below sentences
   - ***a. use numerals for main ideas***
   - ***b. use small letters for supporting ideas***
   - ***c. less confusing than official "outlining" format***



2. Read, dot, and note.

Dot and Notes

1. Read a paragraph.
2. Put dot next to important ideas
3. Finish chapter
4. Take notes using outline and headings

Put up a poster with 2 or 3 study skill strategies

Poster ideas for study skill strategies.

Take Notes

1. Record heading
2. Read a paragraph.
3. Record important ideas
4. Use numbers and letters

Dot and Notes

1. Read a paragraph.
2. Put dot next to important ideas
3. Finish chapter
4. Take notes using outline and headings

Preview/Overview

1. Look at the title and headings.
2. Read the first paragraph and last paragraphs.
3. Read the article/chapter.
4. Take notes.

Read and Pause

1. Read a paragraph.
2. Pause and check. (Do I understand?)
3. Return or resume.

Paragraph Re-Read

1. Read each paragraph quickly.
2. Re-read to find important sentences or ideas.
3. Continue.

3'x5' Card

1. Put a card on top/bottom of sentence
2. Move slowly ahead as you read

Article Re-Read

1. Quickly skim read the article/chapter.
2. Re-read the article/chapter.
3. Note or record important ideas.

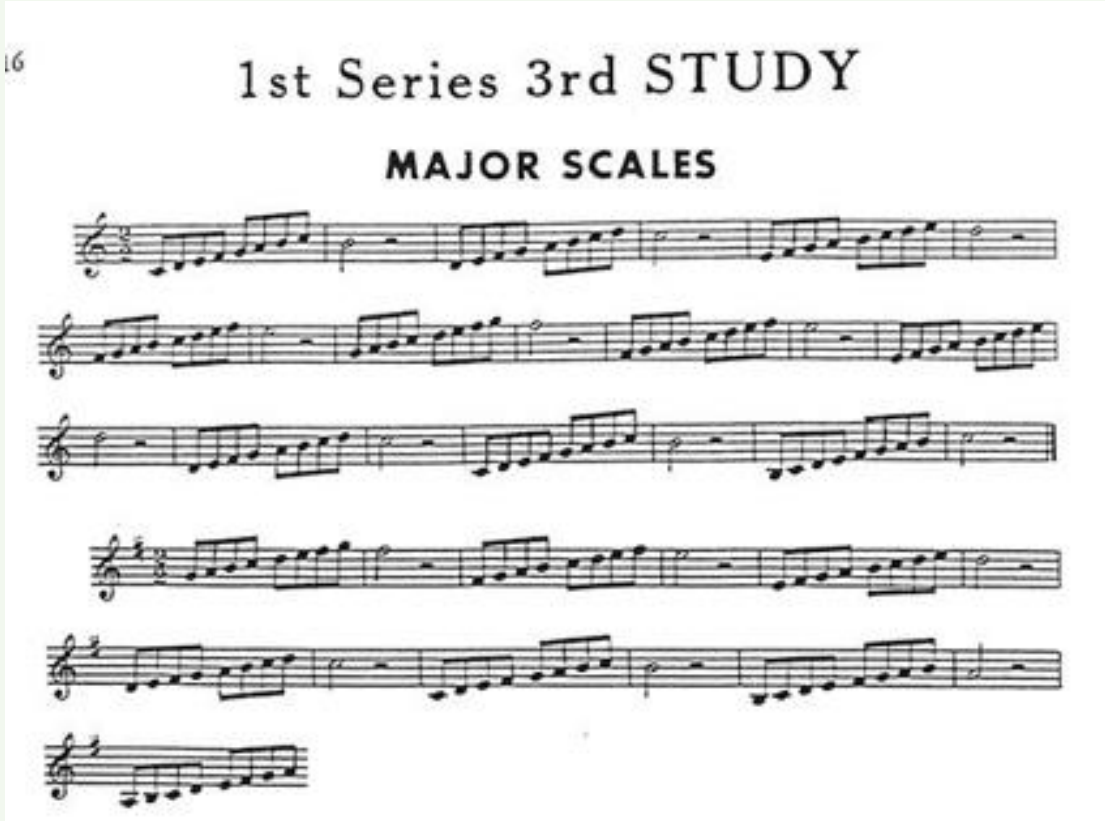
5. Fluency

** Only for those who need it.*

1. Ability to process text quickly

c. WPM vs. WCPM –

2. Like practicing scales



3. Wide reading is the best.

4. A variety of repeated reading activities.

5. Short Passage Fluency

It was morning. Biff was getting ready to go to school. He was packing a lunch. Sam came in the kitchen. "Hello Biff," he said.

"Hello Sam," Biff said.

"**What** are you doing?" asked Sam.

"I am going to **school**. I am packing my lunch."

Short Passage Fluency

1. Read the section aloud to students

a. student times you

2. Student reads to target word (30 or 40 words)

a. you time students – record times

3. Repeat – total of three times

4. Student records times on a line graph

Self-efficacy – student sees times getting faster

SPF Basics

1. 4 to 8 minutes a day

2. Supplements reading instruction, home reading practice

Expression vs. prosody

Prosody – oral reading sounds like speaking - correct pauses and inflection

Expression – good for theater

The Rest of the Load

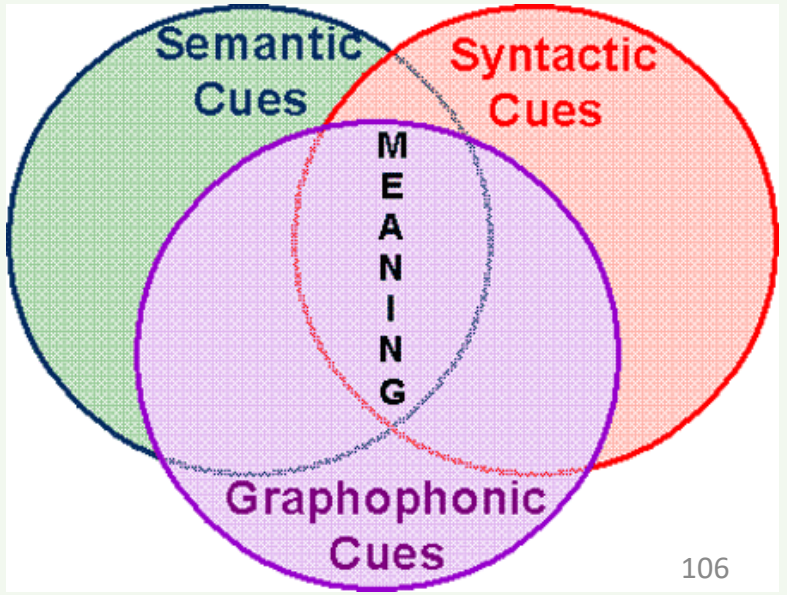
6. Activities to Develop Word Recognition

1. Word recognition – ability to automatically recognize a during reading

2. Word identification (below) – It's in your lexicon, but you don't recognize it.

a. must consciously employ a strategies.

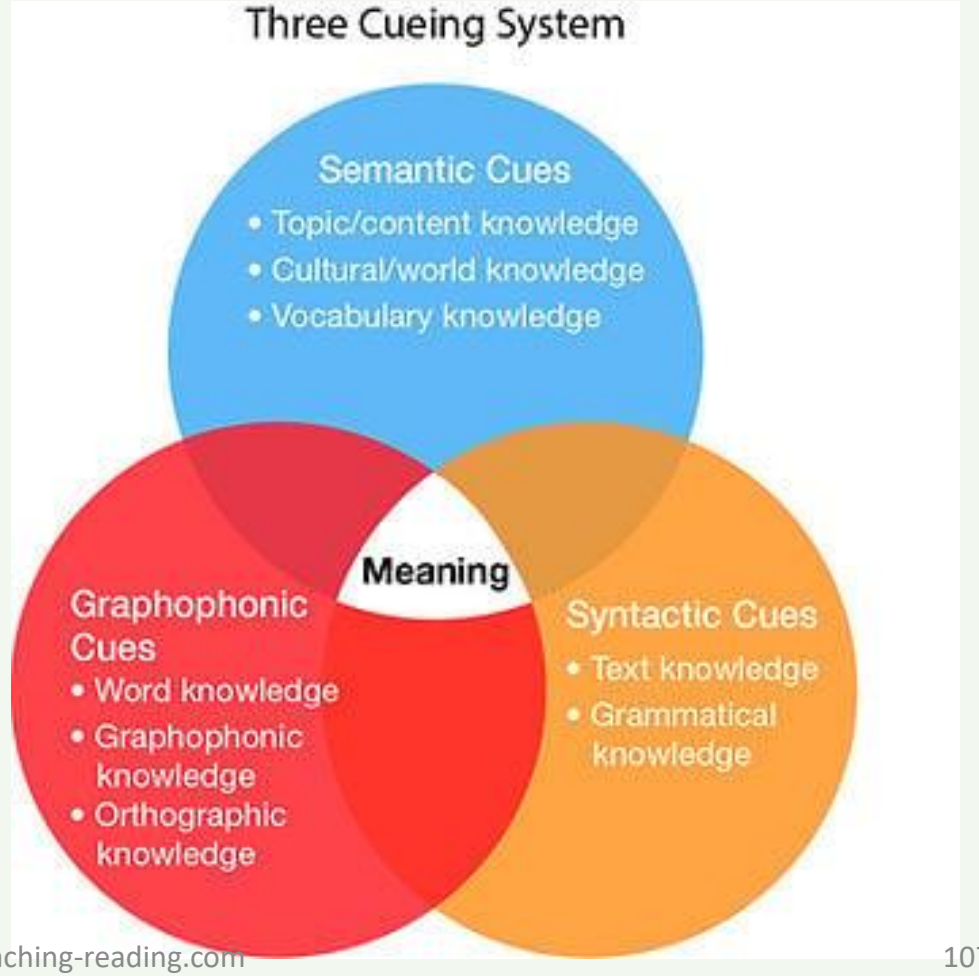
3. Activities to develop all three cueing systems



1. Phonics – Letter sounds, letter pattern activities, direct instruction, word sorts, word building.

2. Semantics – cloze and maze activities

3. Syntax – writing, sentence anagram



Experiment #2

Read these 110 words as quickly as you can.

Billy was traveling from Minnesota to California. As he was driving through South Dakota, he stopped at a rest stop to stretch his legs and buy a can of pop. When he got out of his car, he saw a herd of buffalos off in the distance. He was very interested. Billy started walking toward the buffalos so that he could take a picture to send to his friend, Molly. Suddenly, there was a loud bang! Somebody at the rest stop had thrown a large firecracker into the air. The buffalos started to stampede toward Billy. Billy ran as fast as he could, jumped in his car, and drove away.

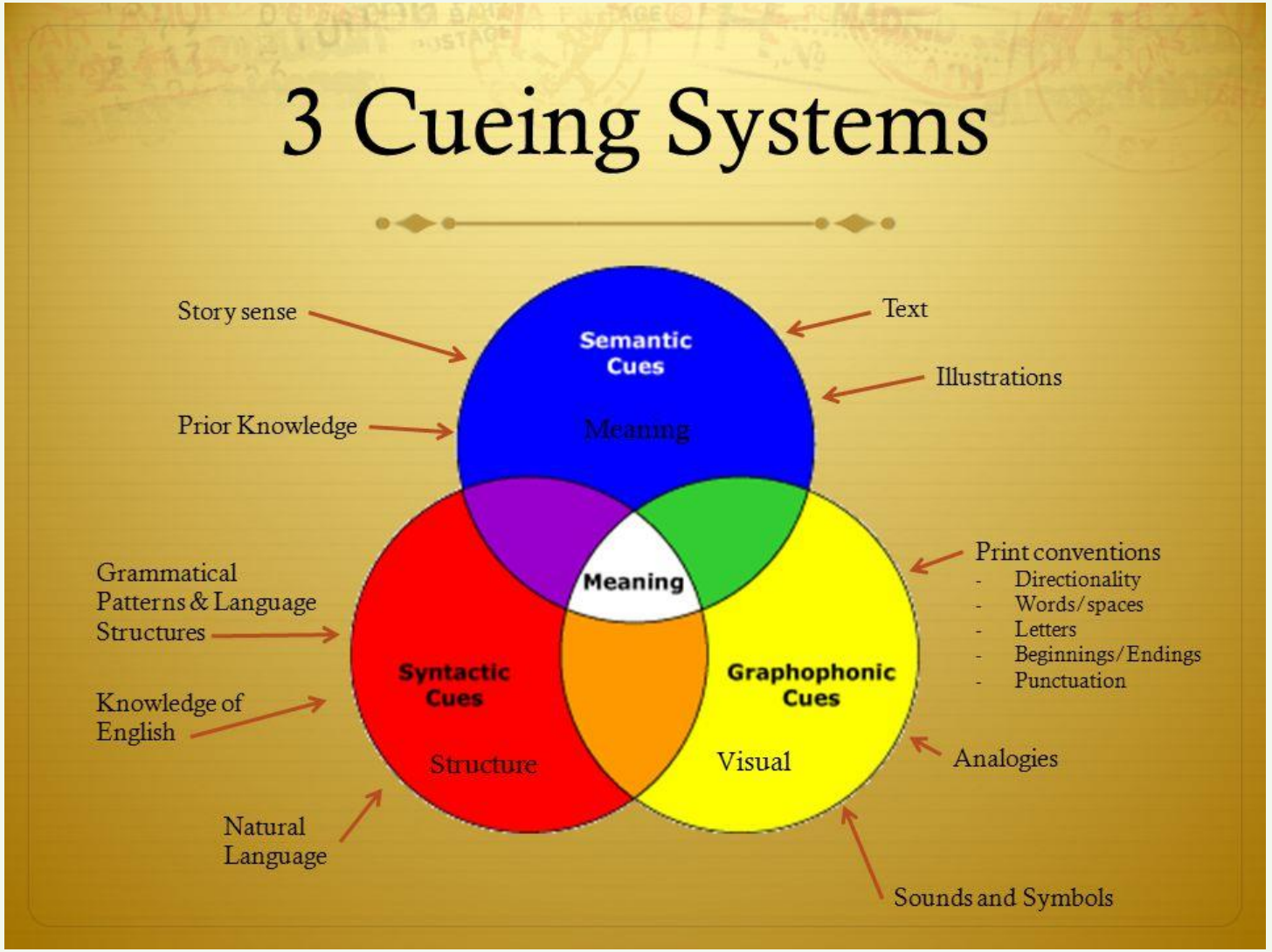
Read these same 110 words. You should be able to read them faster this time.

FASTER

Away drove and car his in jumped could he as fast as ran Billy. Billy toward stampede to started buffalos the. Air the into firecracker large a thrown had stop rest the at somebody. Bang loud a was there suddenly. Molly friend his to send to picture a take could he that so buffalos the toward walking started Billy. Interested very was he. Distance the in off buffalos of herd a saw he car his of out got he when. Pop of can a buy and legs his stretch to stop rest a at stopped he Dakota South through driving was he as. California to Minnesota from traveling was Billy.

What did you notice about:

- **Speed?**
- **Fluency?**
- **Eye movement?**



7. Word Identification: Phonics, Morphemic Analysis, Context, And Analogy

1. Word identification = see a word in print, it's in your lexicon, but you don't recognize it.

2. Consciously apply the strategy

3. There are four basic word identification strategies:

(a) analogy (word families or large unit phonics)

(b) morphemic awareness [a form of large unit phonics based on prefix, suffix, affix, root]

(c) context clues [semantics]

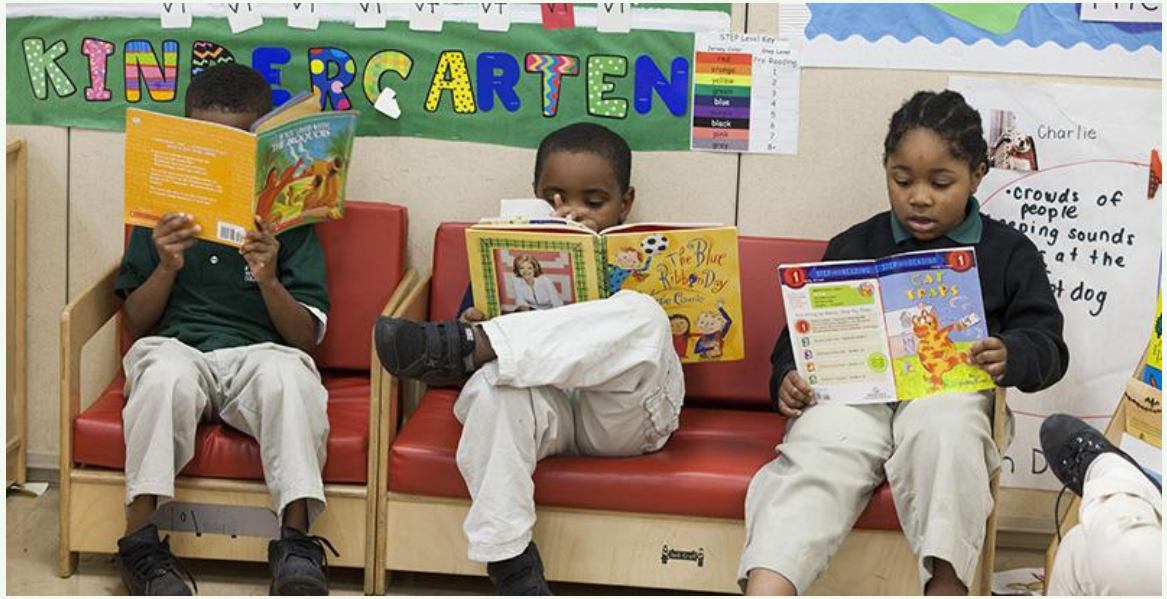
(d) phonics or decoding

4. Teach the strategy to develop the skill

8. Reading Practice

1. Like choir practice or volleyball practice or wrestling practice.

2. All students at all levels need practice reading books that they have selected.

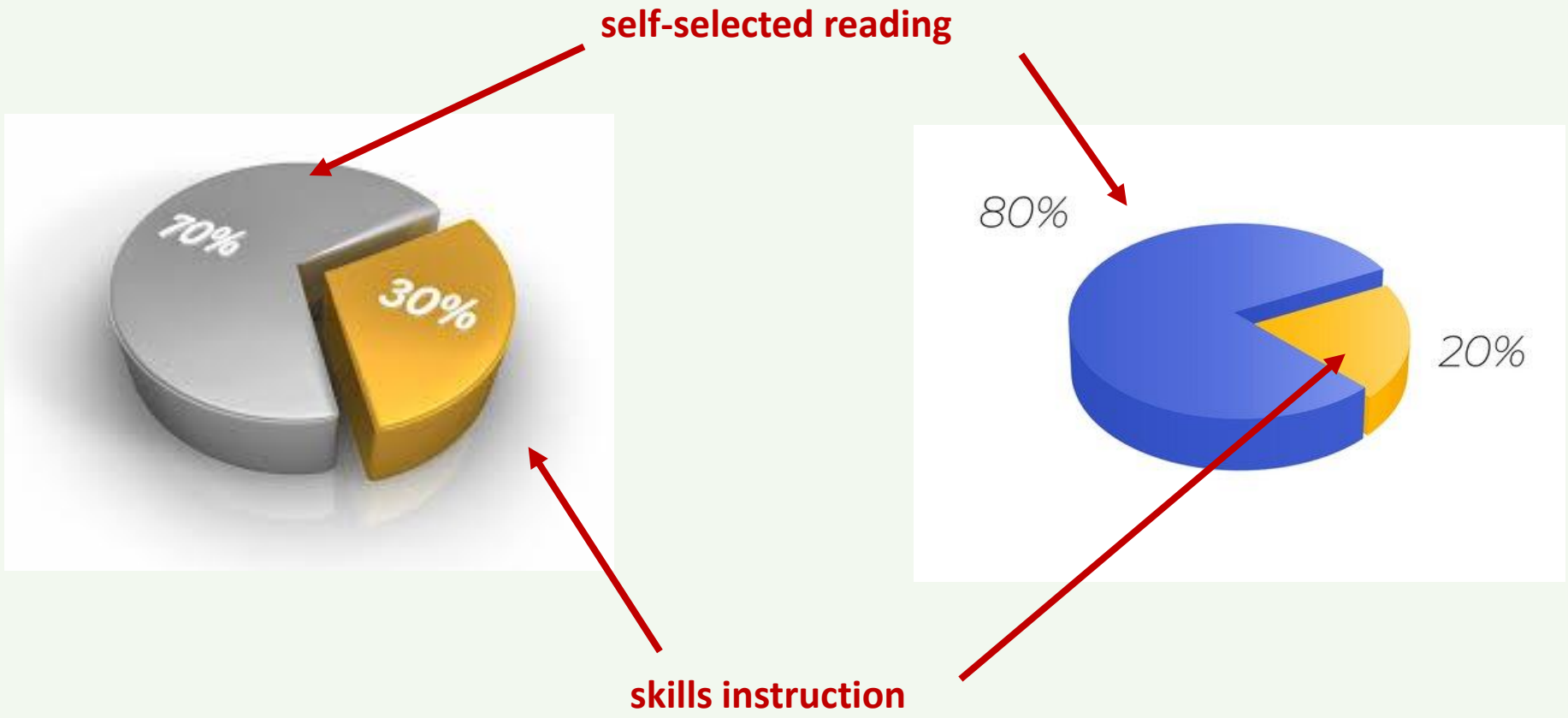


3. Reading widely is one of the best methods to use to enhance students' comprehension, word identification, and fluency skills as well as vocabulary and conceptual knowledge (Allington, 2012; Krashen, 2004).

4. Also, reading practice enables students to practice newly learned skills in authentic reading contexts.

5. Nancy Atwell (1998) recommends that 70% to 80% of reading class be used for self-selected reading practice and 20% to 30% be used for skills work.

6. It's okay to read easy books.



9. Conversations and Social Interactions Around Books

1. Literacy is a social process.

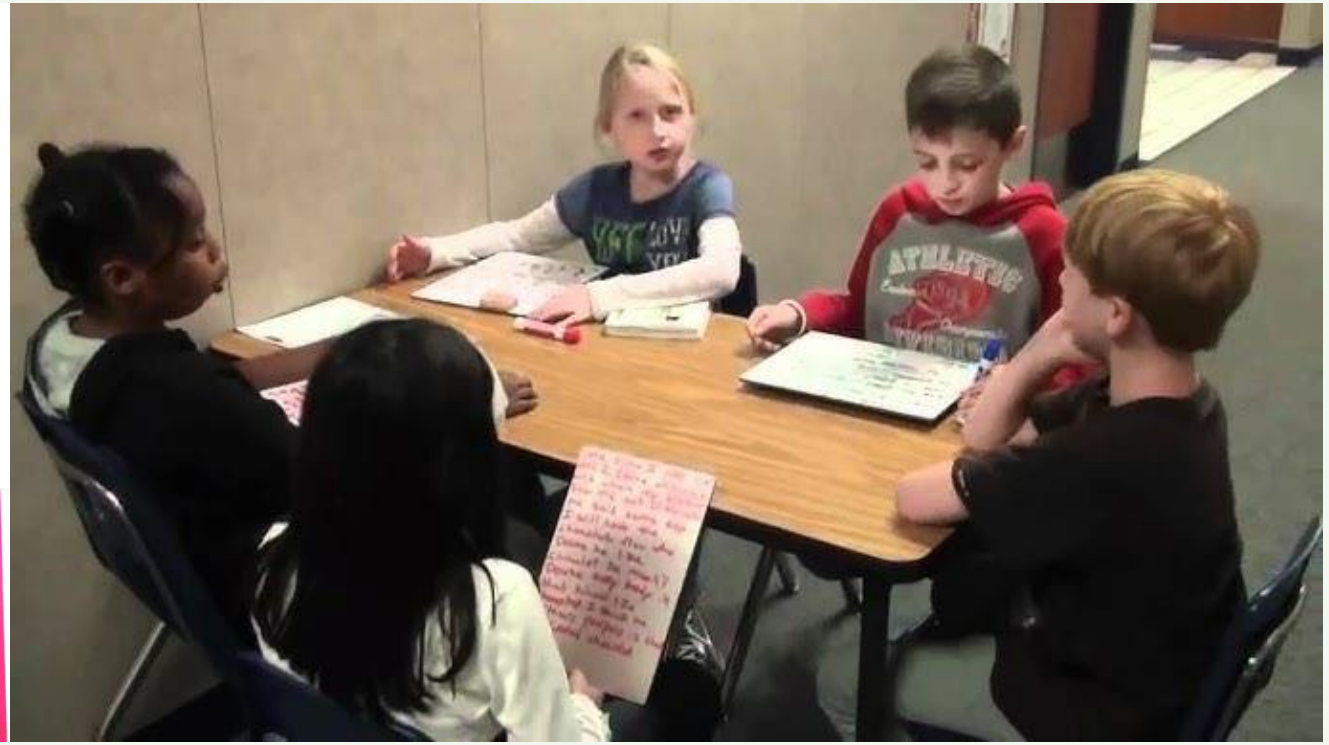
2. Social interaction around books and writing enhances high-level thinking, literacy learning, and enables students to learn content knowledge more deeply.

3. Social interaction could involve a variety of activities including:

- book talks
- literature circles
- book clubs
- book evaluations and critiques
- top-ten lists
- journal entries and responses
- planned discussions

4. These experiences need not be long, but they should be planned and purposeful.

5. Literature circles



10. Authentic Writing Experiences

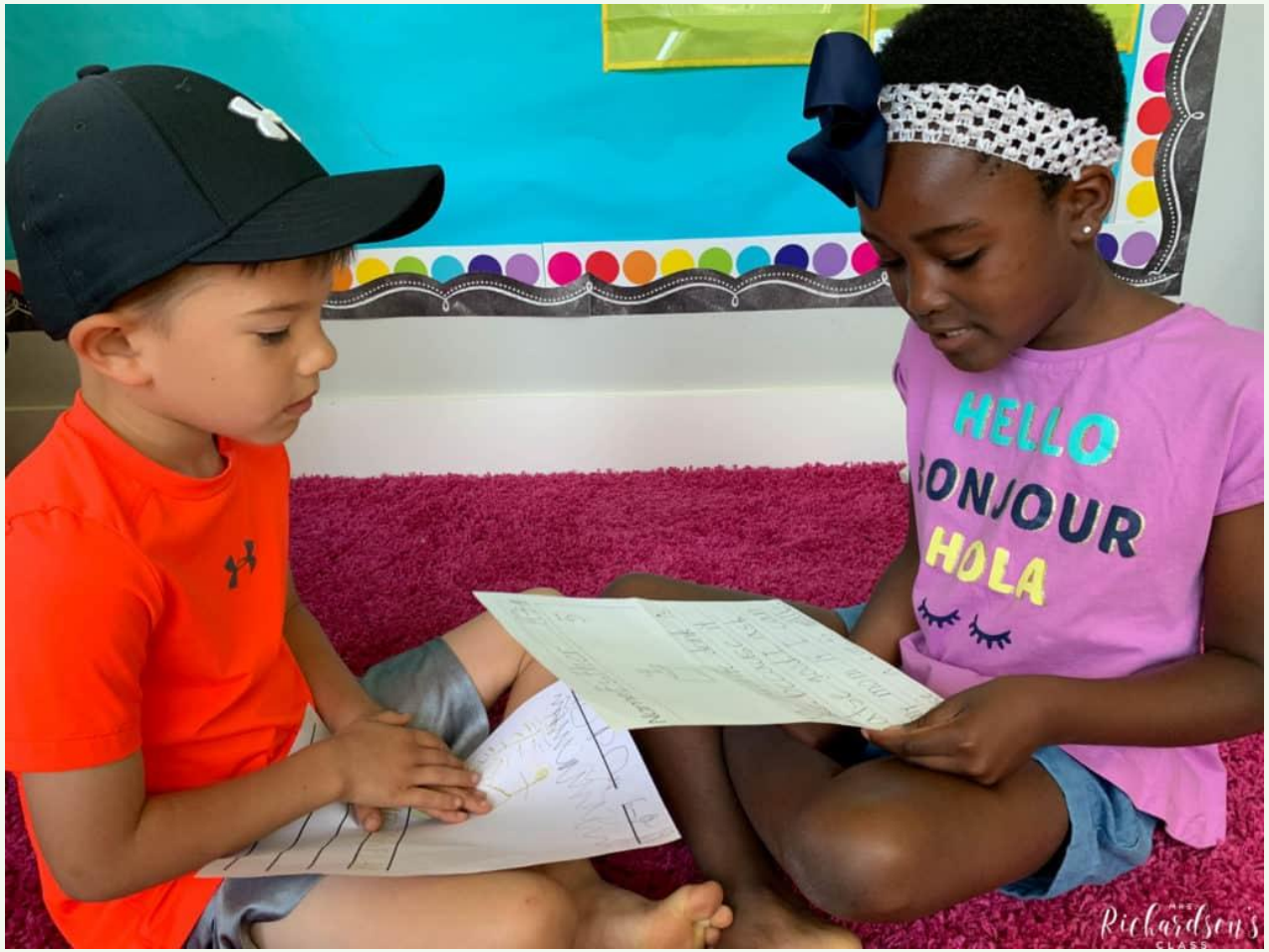
1. The reading-writing connection has been established.

2. Authentic writing = students are asked to use writing to describe, express, and share their ideas and experiences.

3. Need not be long

a. 3-10 minutes, draft and share.

4. Needs to be daily.



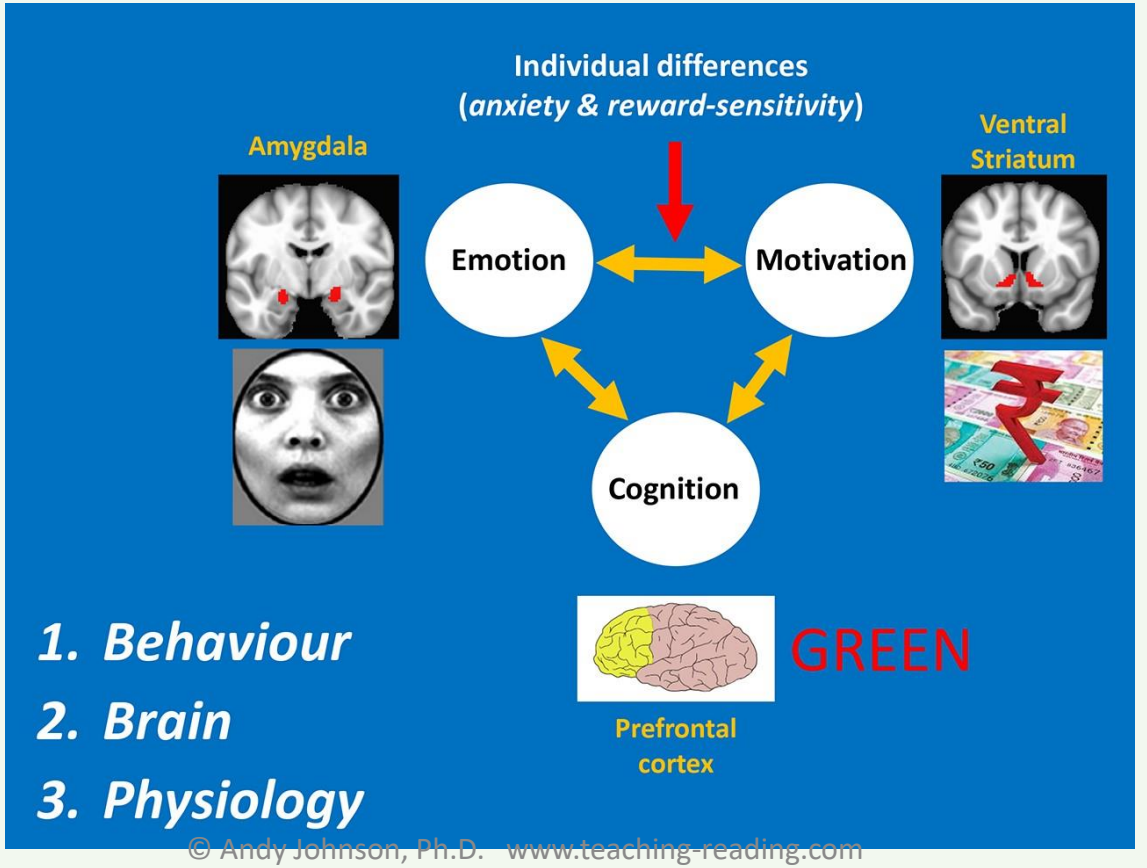
5. Post-reading activities

6. Prompts designed to reinforce letter sounds or patterns

7. Writing to express an idea, record an experience, be silly, be creative … it doesn't matter, just write

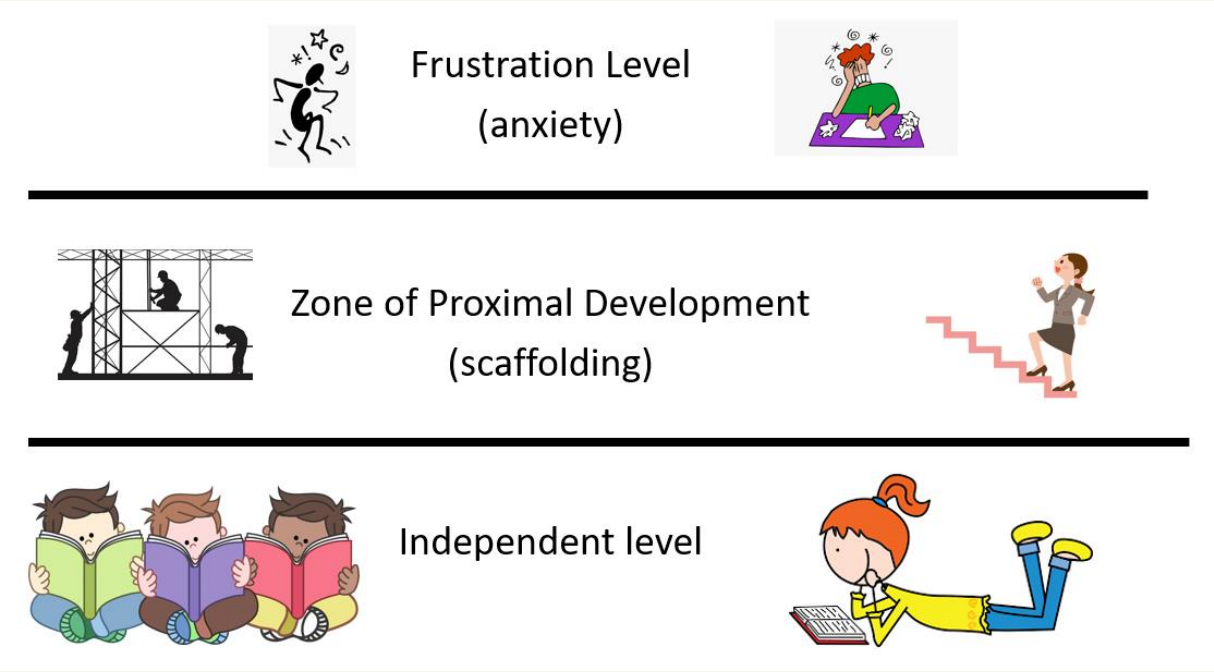
11. Affect: Motivation and Emotion

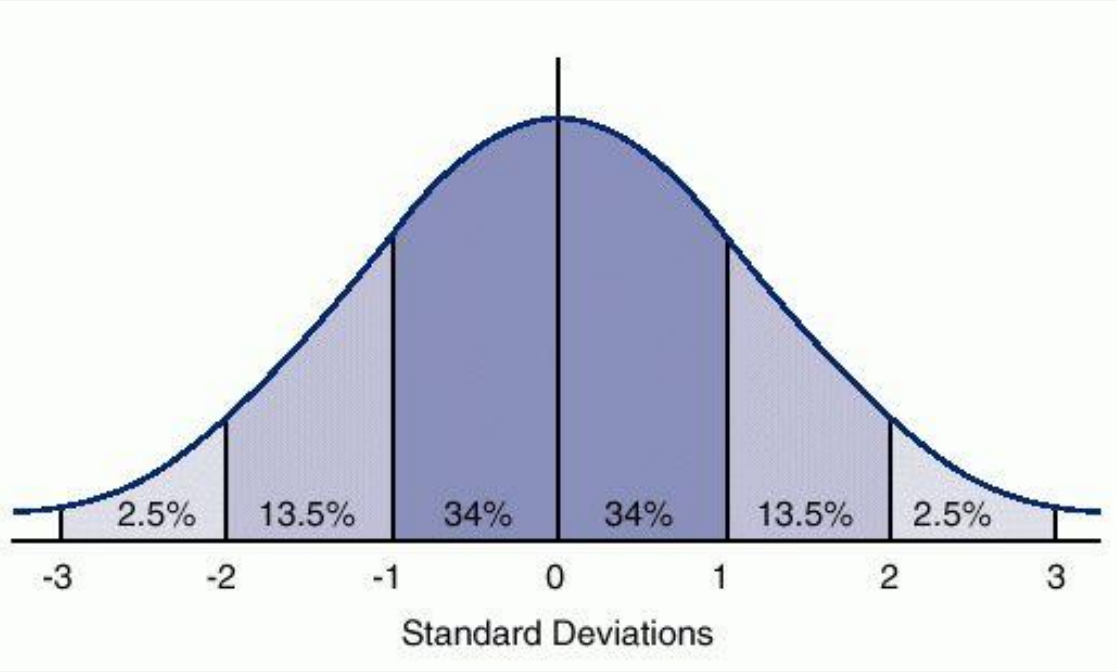
1. A teacher's #1 job is to help students fall in love with books.



2. A teacher's #2 job is to not frustrate, humiliate, bore, or overwhelm students.

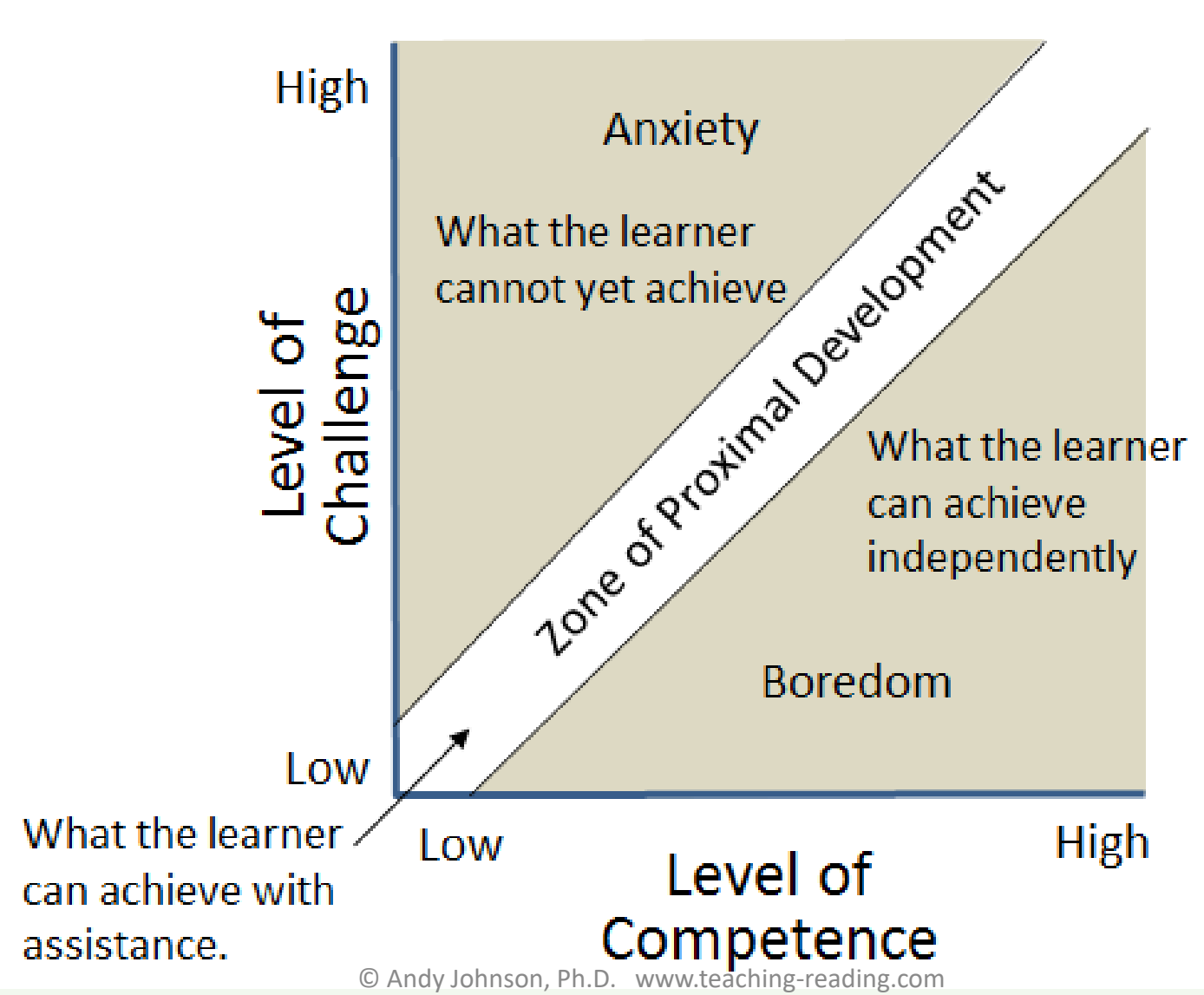
a. one-size-fits-all instruction be definition frustrates or bores 40 to 60 percent of your students.





teach within the Zone of Proximal Development

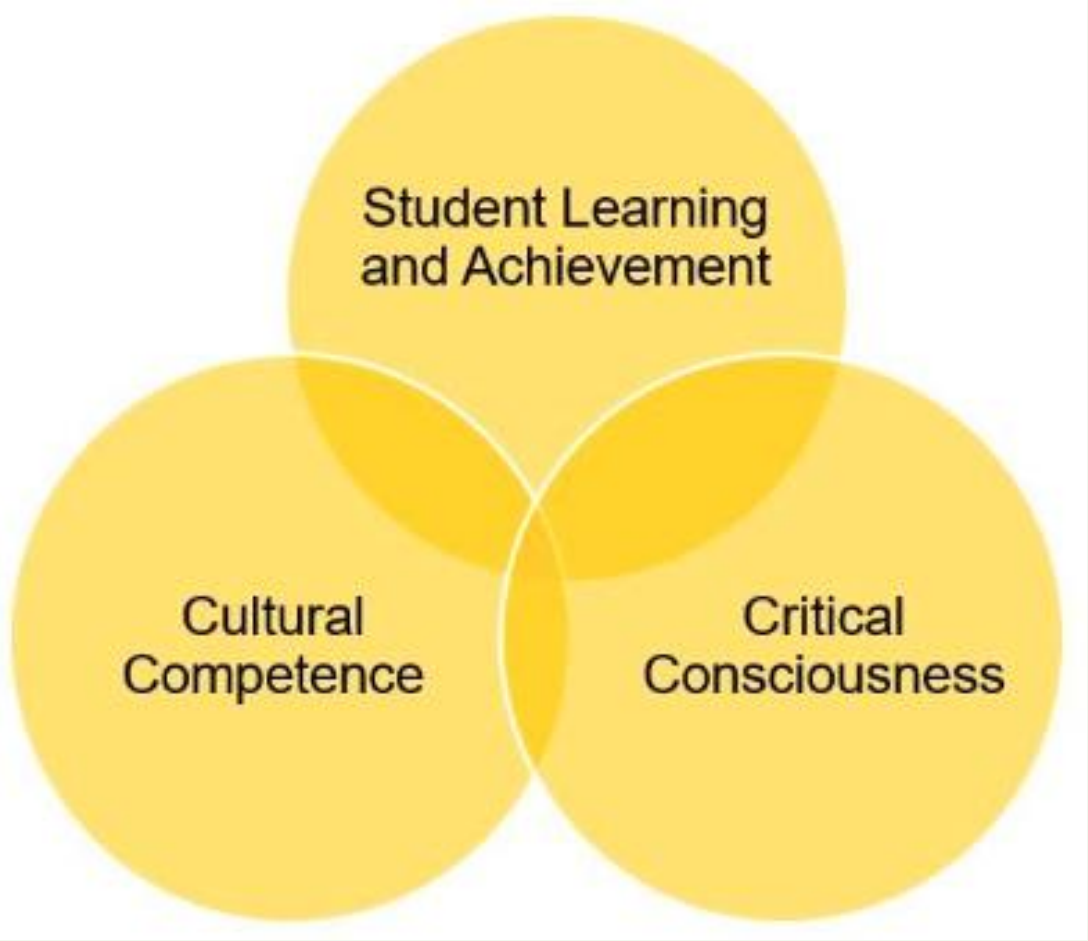
How do you teach within the ZPD with one-size-fits-all reading programs?



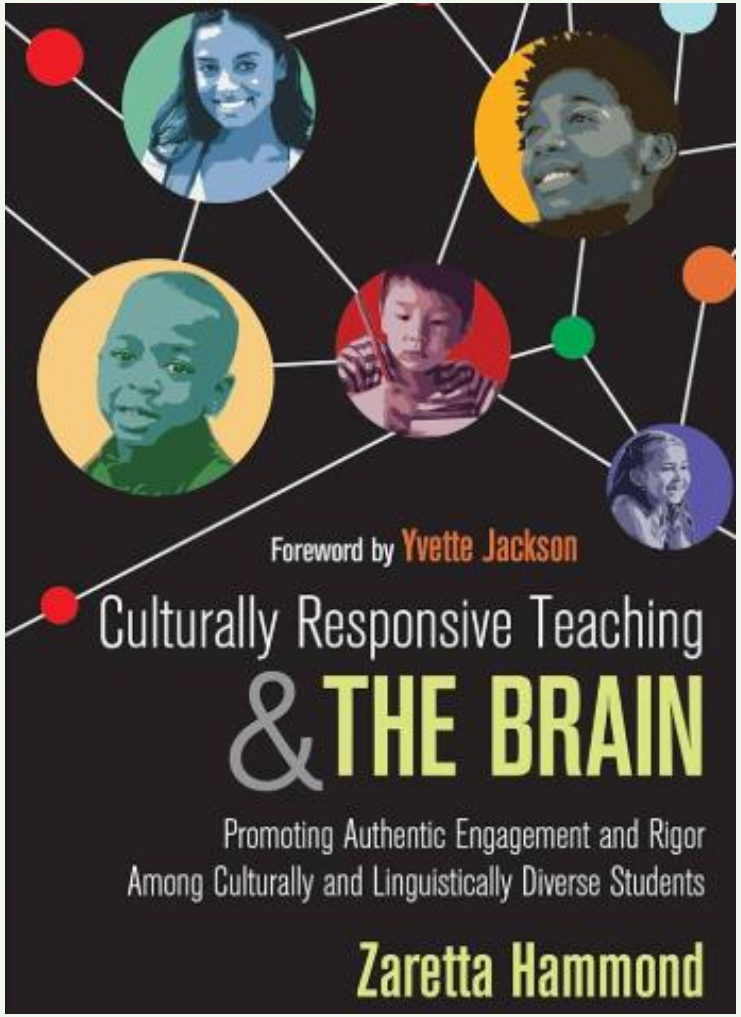
12. Social Cultural Background

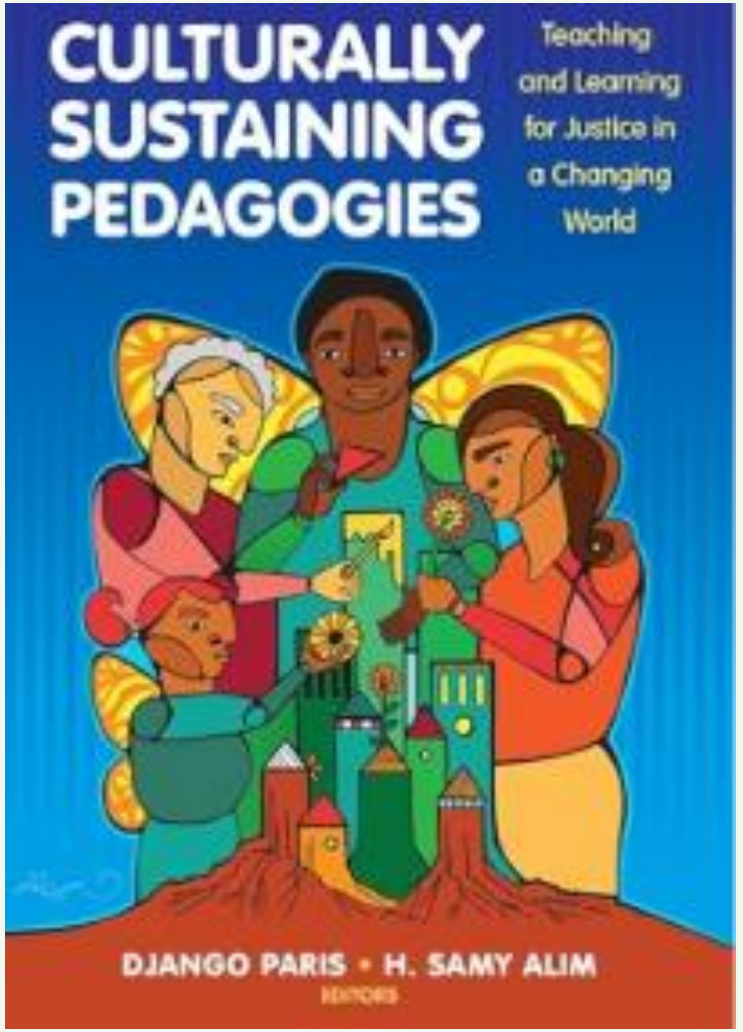
1. Culturally sustaining pedagogy

Dr. Gloria Ladson-Billings



2. Include students' culture, experiences, sand strengths and as the basis for literacy instruction





3. We reject culturally superiority

4. We view through an acorn lens not a deficit lens

THE FOUR BLOCKS LITERACY MODEL

A block of time set aside for literacy.

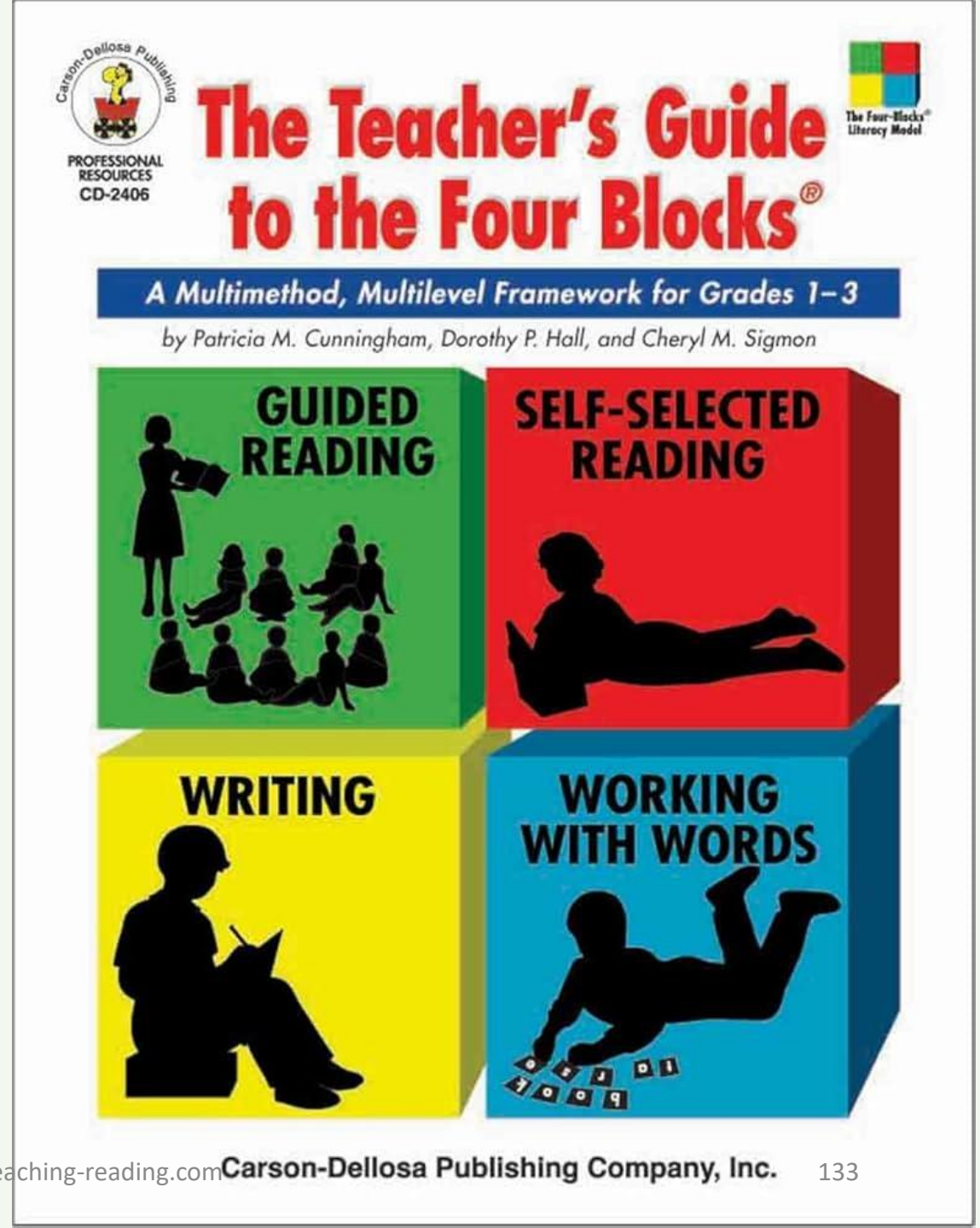
Each block gets an equal amount of time.

1. Guided or shared reading – large group

2. Self-selected reading – reading workshop

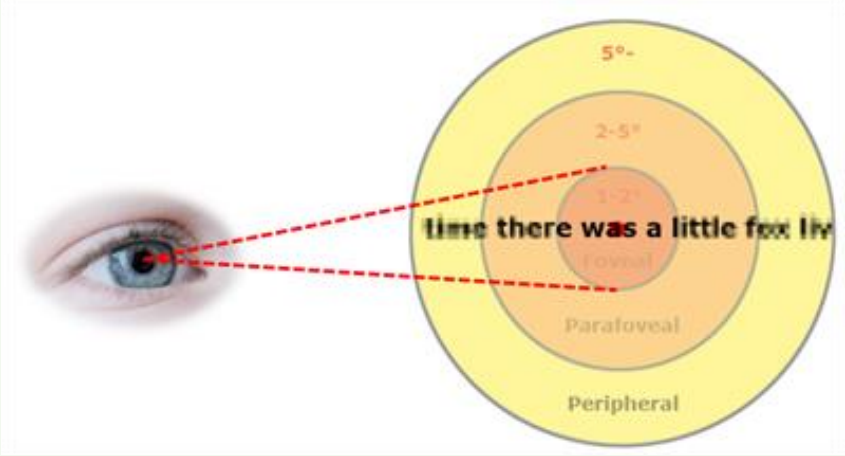
3. Writing – writing workshop

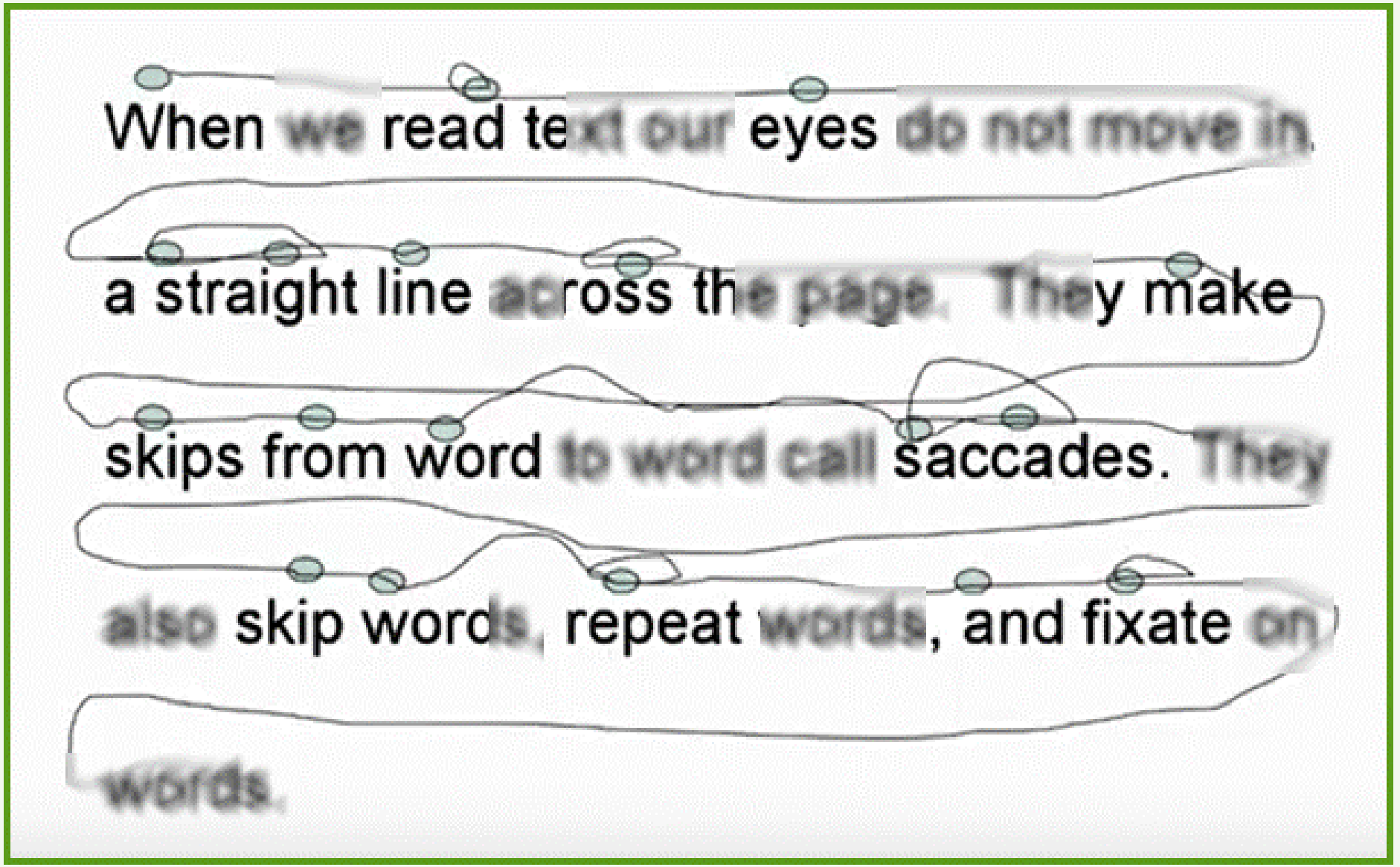
4. Word work – large group, flexible groups, individually



If time ...

EYE MOVEMENT



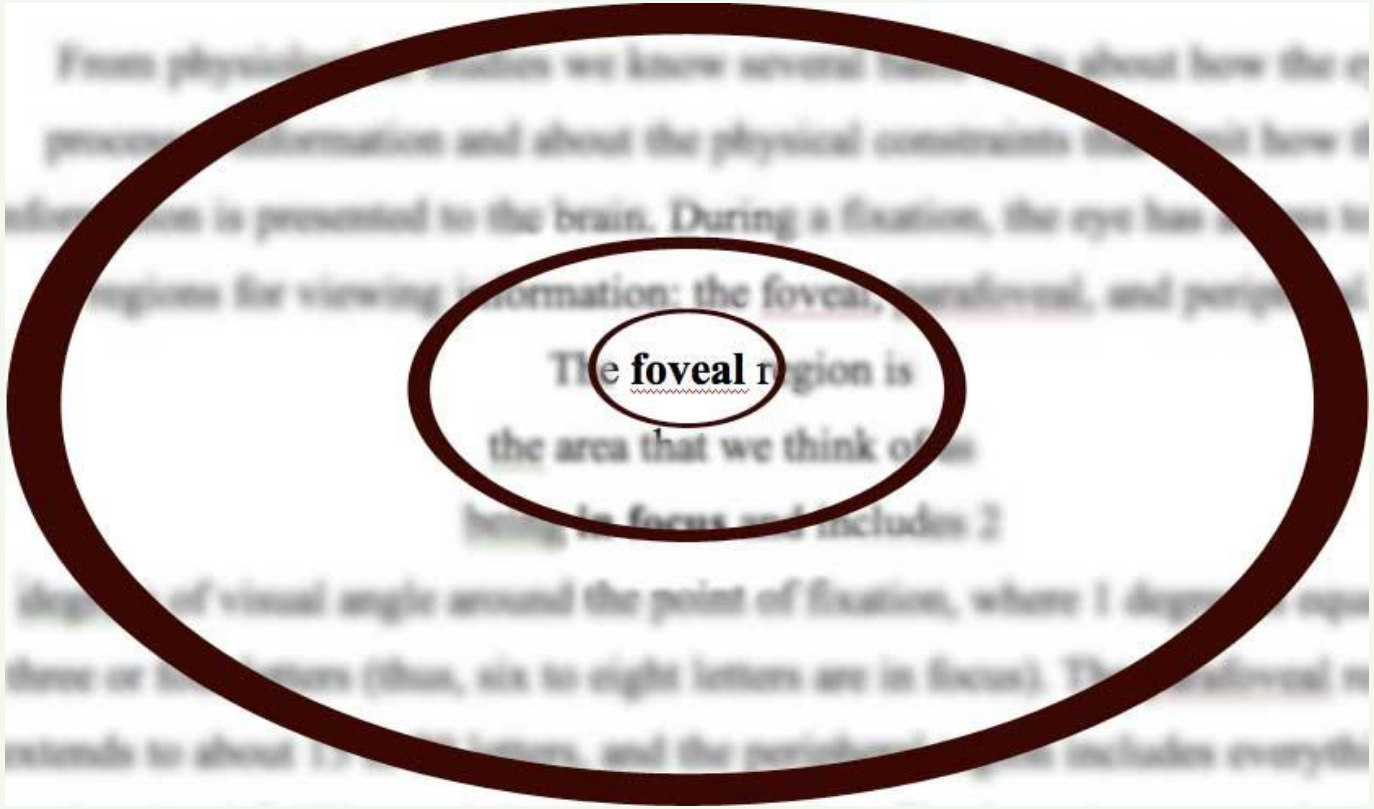

When we read text our eyes do not move in
a straight line across the page. They make
skips from word to word call saccades. They
also skip words, repeat words, and fixate on
words.

Perception - three visual regions

foveal

parafoveal

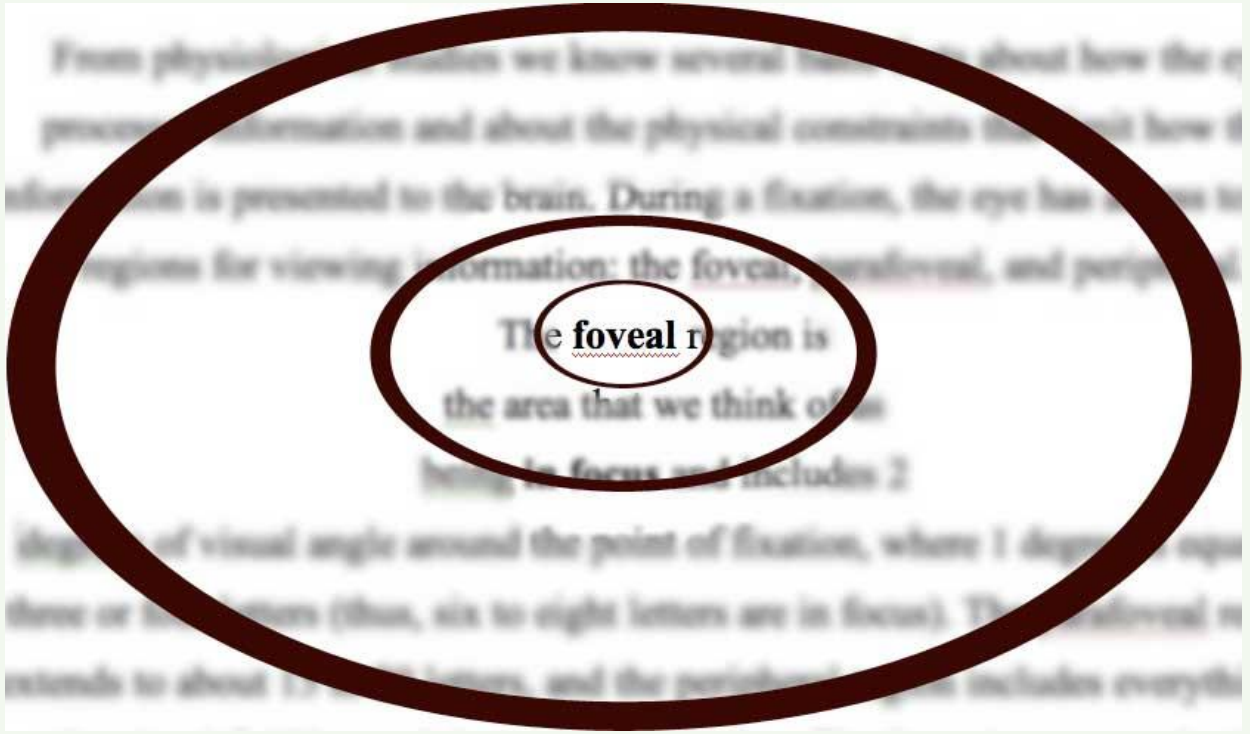
peripheral



The foveal - takes up only 1% to 2% of your total vision - 3 to 6 letters

The *parafoveal* – 24 to 30 letters – not very clearly.

The *peripheral* region is everything else.

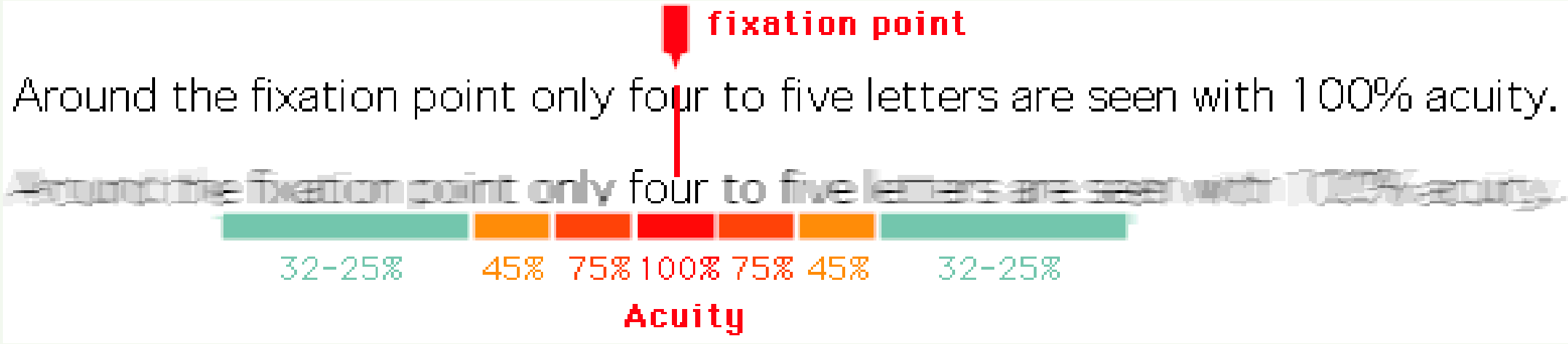


foveal

parafoveal

peripheral

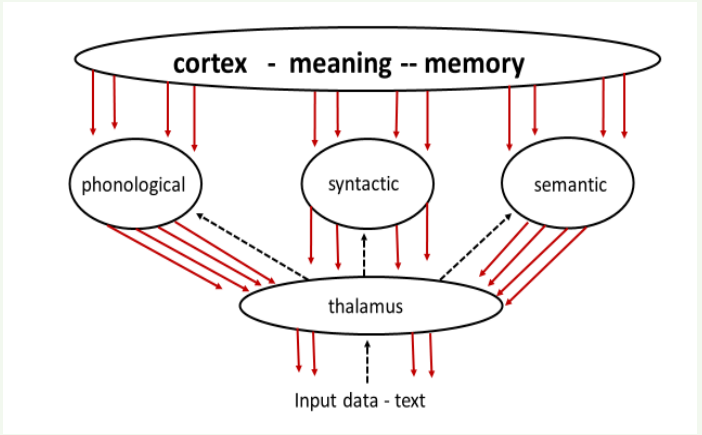
Question: With the very small in-focus viewing area how is anybody able to read more than 10 words per minute?

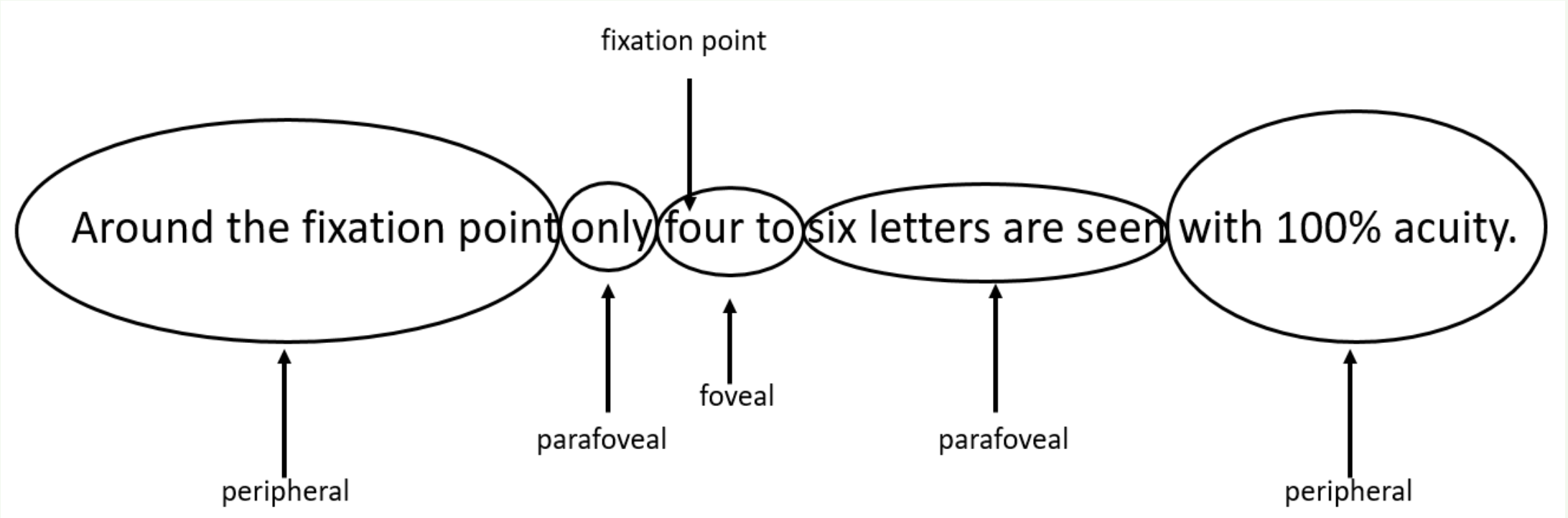


Answer: Efficient readers are able to read quickly because of the top-down flow of information as depicted in the transactive model.

Answer

- perceive 3-6 letters
- brain fills in blanks.
- uses phonics, semantics, and syntax to predict
- brain is a meaning-making, predicting machine
- not a sounding-out words machine

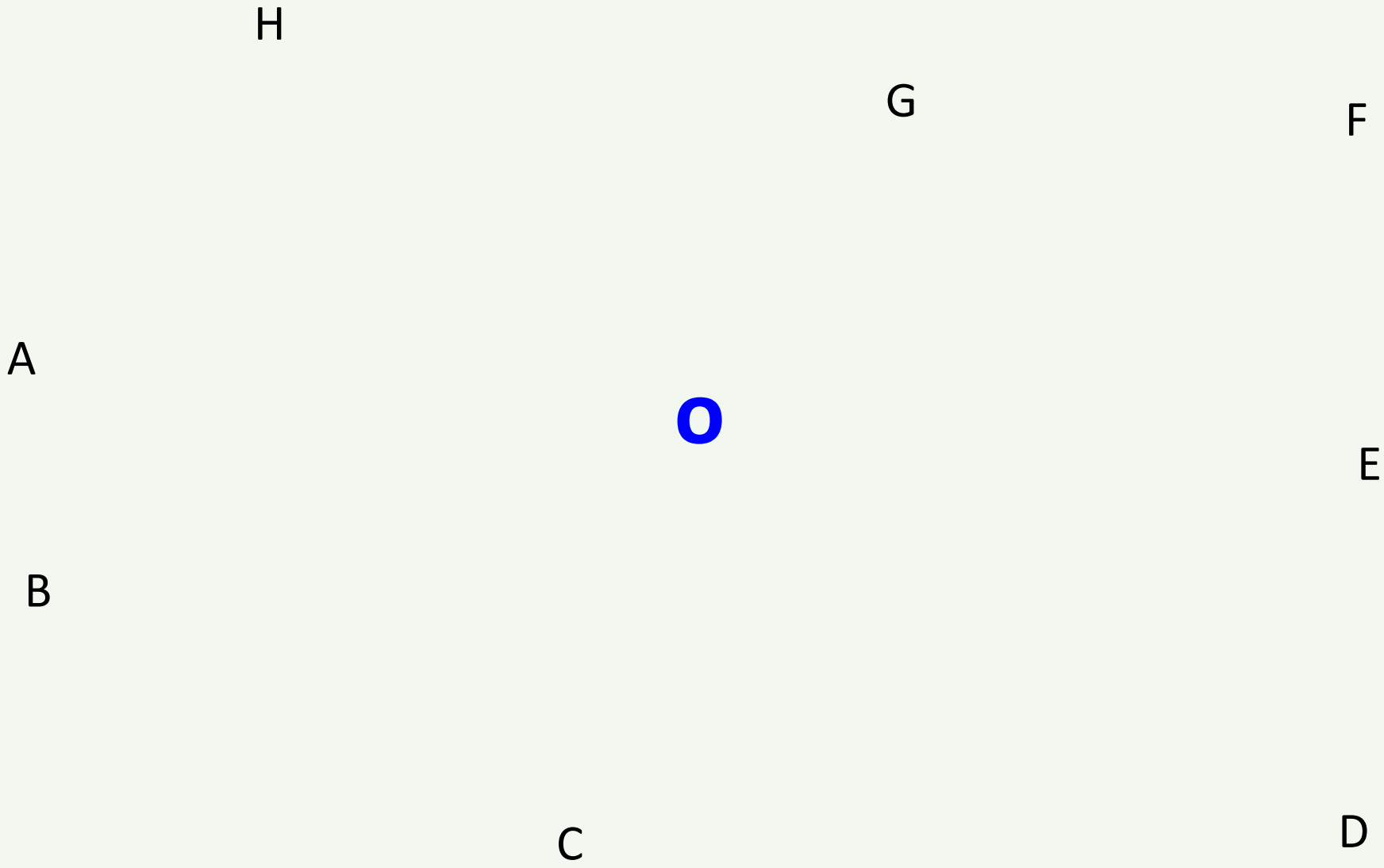




Scanner

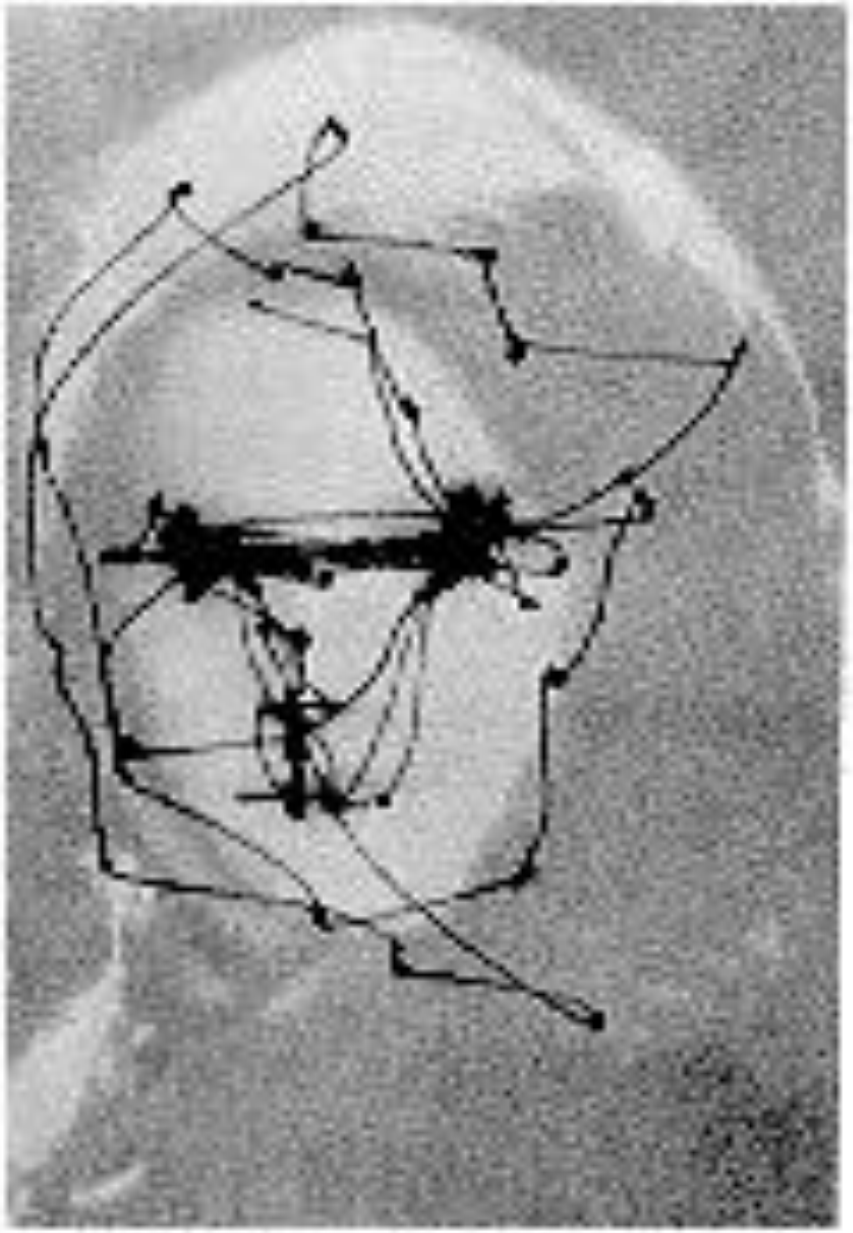
1. Eyeballs need to move – grocery store scanner – to create images

EXPERIMENT #5



Look at this picture.

What path do your eyeballs take?



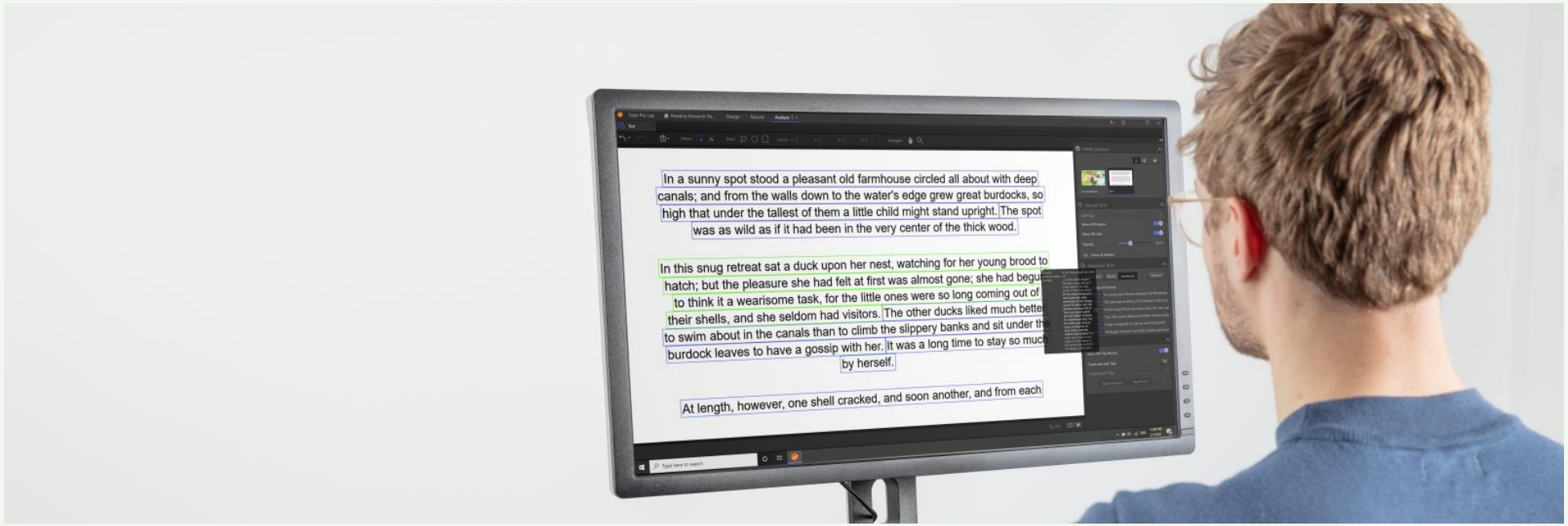
Eyeballs never stay still

Fixations – little snapshots

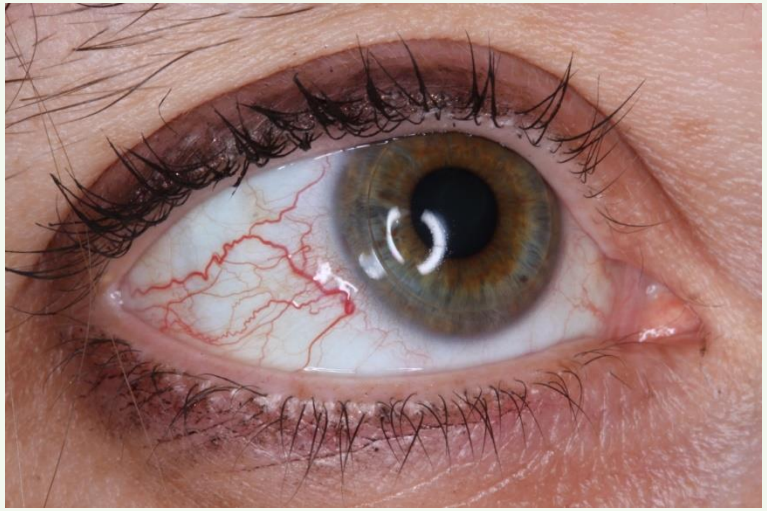
Create a picture of reality based on little snapshots

You are not looking straight ahead even when you think you are.

EMMA: Eye Movement and Miscue Analysis



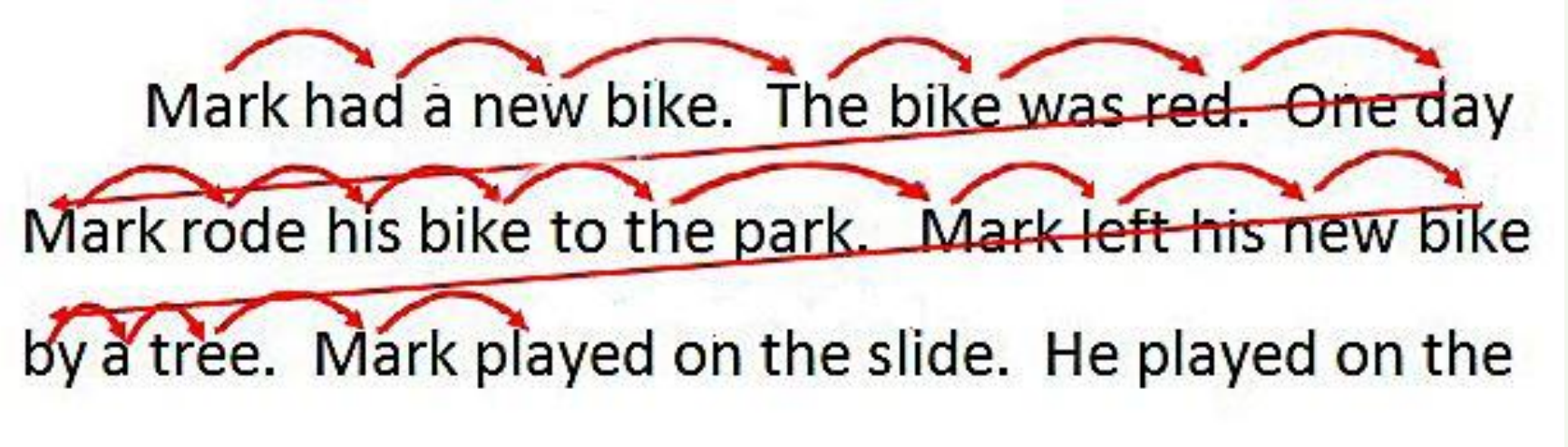
1. Get used to watching the eyeballs of your readers as they read.



2. Saccades – the skips the eyeballs make

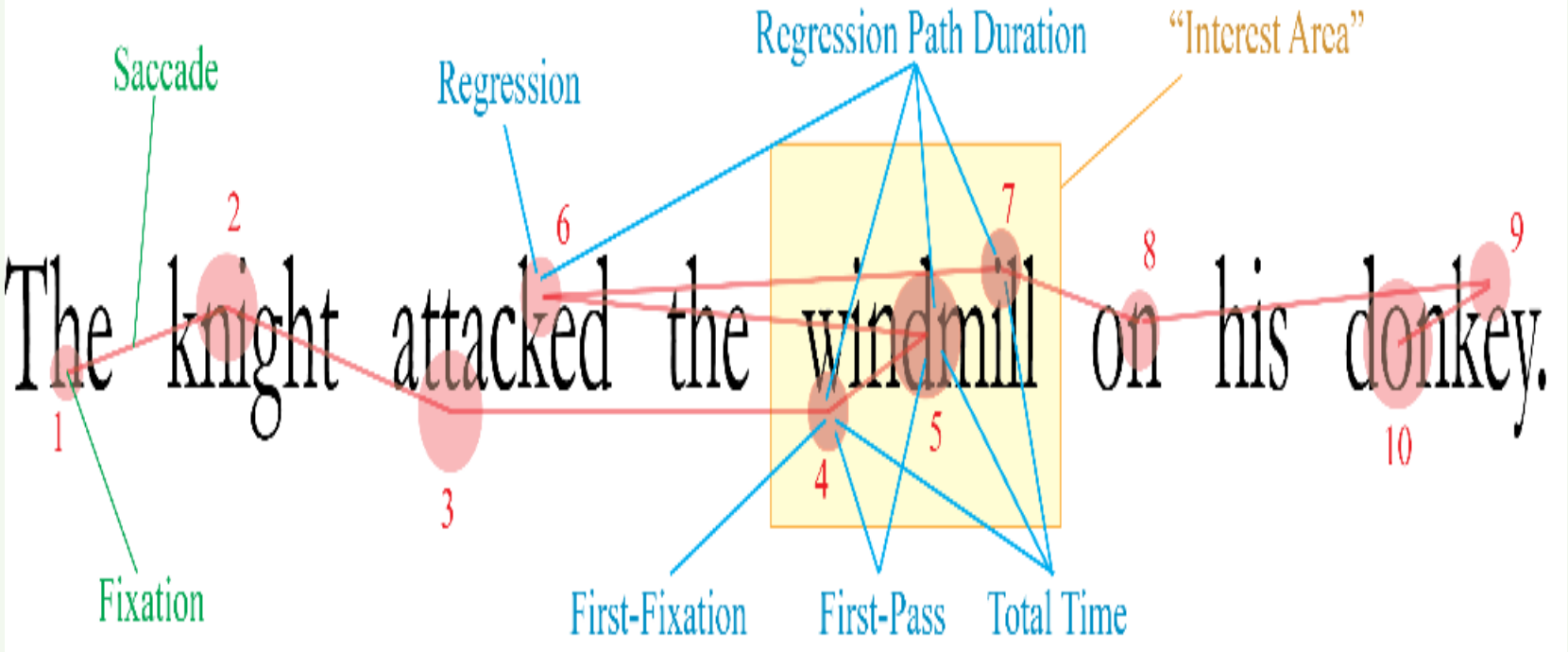
3. Fixations – eyes stopping on a word

4. Regressions – eyes going back



5. We don’t fixate on every word

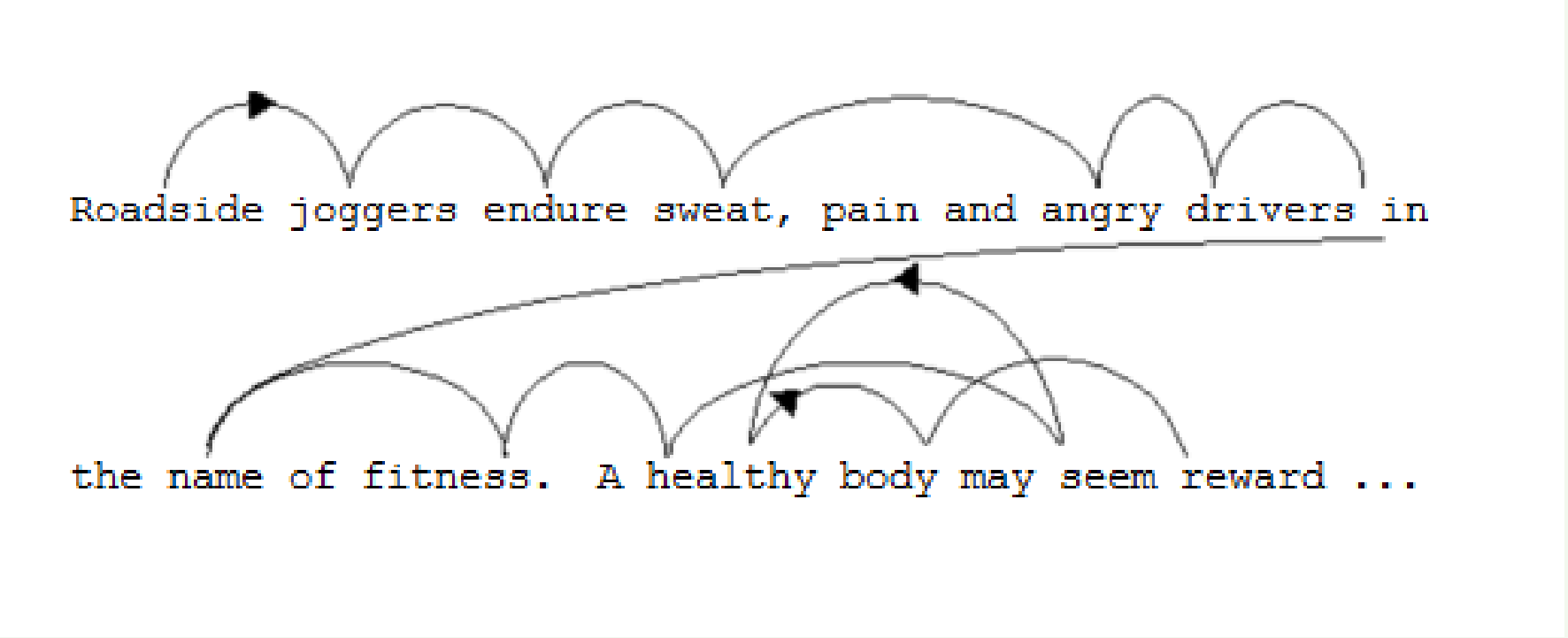
6. Eye mm studies show that 30-40% of words skipped



7. The length of word didn’t matter (for skips)

8. Skip more function words – words serve a grammatical function (and, of, the, is)

9. Skip fewer content words – words carries semantic meaning



10. Readers gain info from parafovela – to recognize words

11. Cortex (top down) is used to direct eyes

12. Rayner, 1996 study – Predictability of word affects fixation time and skip

a. skip more predictable words

b. fixate on less predictable words

Paulson, E. J. (2002). Are oral reading word omissions and substitutions caused by careless eye movements? *Reading Psychology*, *23*(1), 45–66.

Erik Paulson

Focus: Eye movements – words omitted or substituted during oral reading

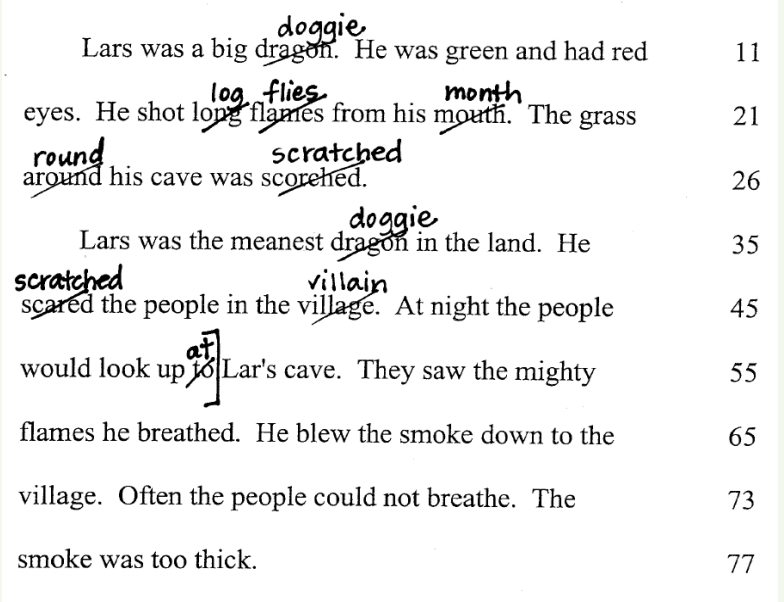
Methodology

1. Miscue – what is said during oral reading does not match what is on the page.

- **‘Run to the top of the hill.’**

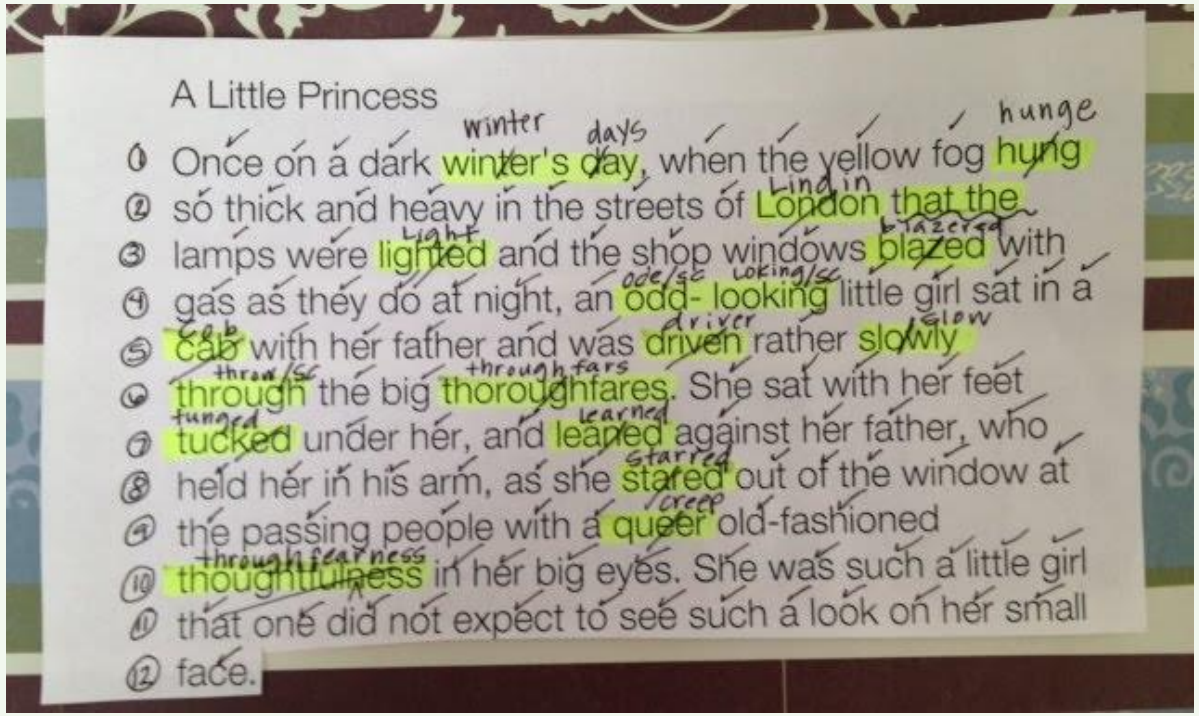
2. Meaning-disrupting miscues – disrupts the meaning of the sentence
- **‘Rat to the top of the hill.’**

3. Meaning-maintaining miscues – fits within the sentence
- **‘Runs to the top of the hill.’**
- **‘Rush to the top of the hill.’**


Lars was a big dragon. He was green and had red 11
eyes. He shot long flames from his mouth. The grass 21
around his cave was scorched. 26
Lars was the meanest dragon in the land. He 35
scared the people in the village. At night the people 45
would look up at Lar's cave. They saw the mighty 55
flames he breathed. He blew the smoke down to the 65
village. Often the people could not breathe. The 73
smoke was too thick. 77

4. Meaning-disrupting but grammatically correct

5. Self-corrections - miscues that are corrected



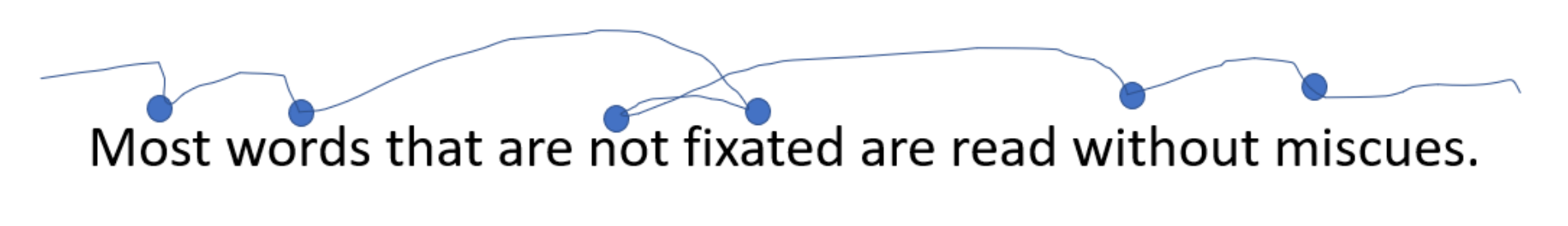
Findings

1. Readers were likely to visually examine (fixate) miscued or skipped words.

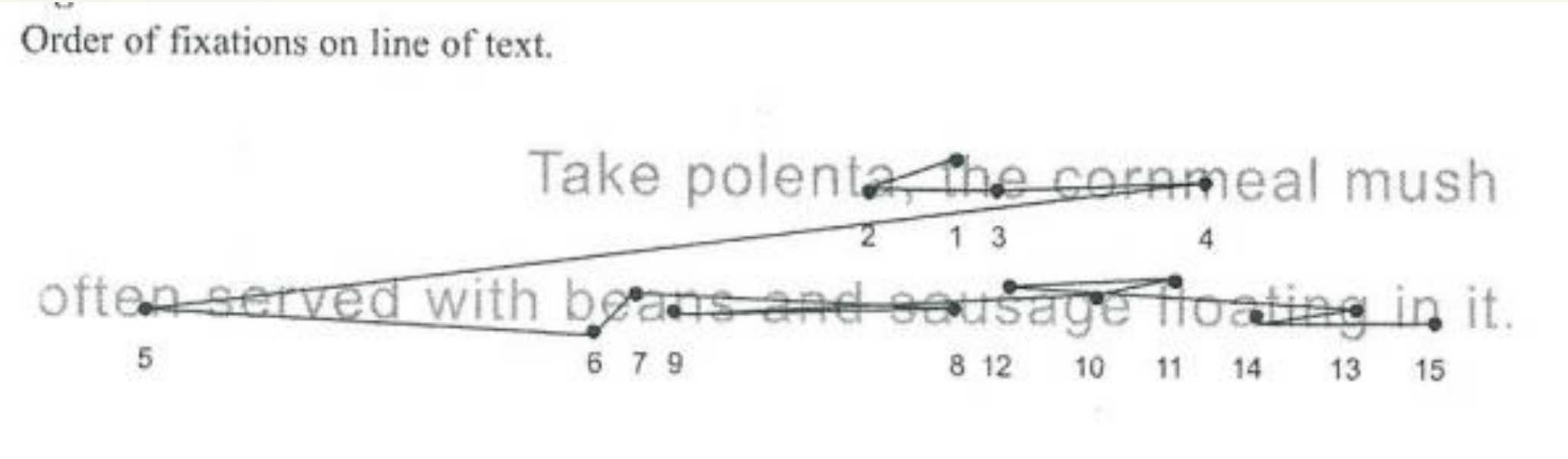
Omitted - skipped this word even though the reader fixated on it

Substitution - inserted a new word even though the reader fixated on it

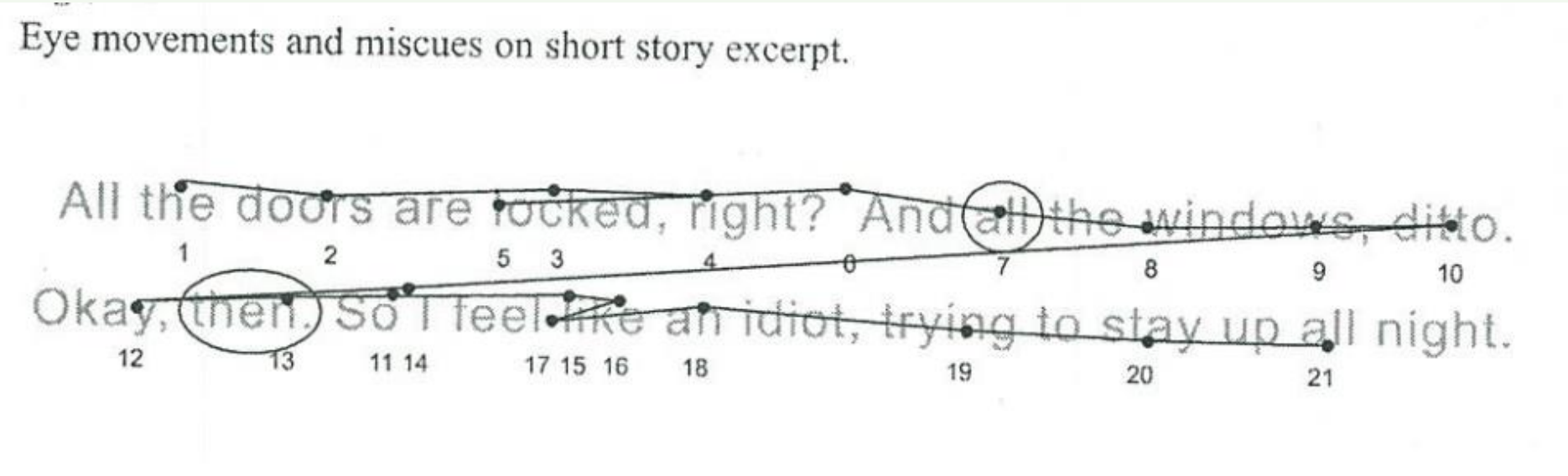
2. Most words that were skipped were read without miscues.



3. Fixations did not occur in the order in which they appear in the text.



4. Readers regressed (go back) 10-15% of the time



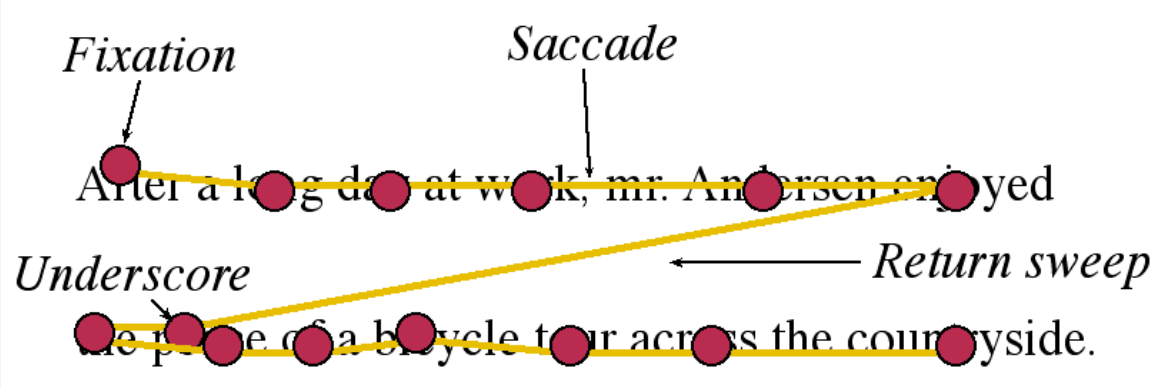
Circle = skipped word

Conclusions

1. Eye movement reflects a meaning-making process, not a sounding-out-words process.

2. Readers do not look at every letter or every word.

3. Efficient readers do what is necessary and most efficient to make sense of text (engage all three cueing systems: semantic, syntactic, and phonological)

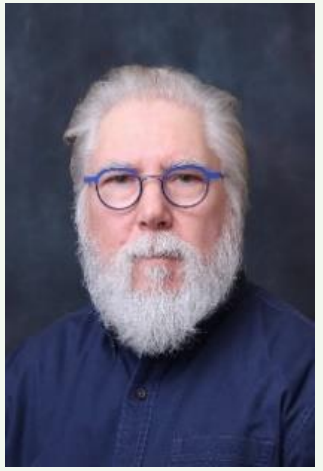


- Effective reading instruction reinforces the way the brain naturally creates meaning with print

If time ...

Defining Our Terms: Scholar and a Journalist

1. A scholar is different from a journalist.



Dr. Allan Flurkey

2. Anecdotal evidence is different from evidence.

Madeline Will

3. Being popular is different from being right.

- Their work is submitted to blind peer-review before publishing.
- They write stuff.

Dr. Elena Aydarova

- Have extensive background knowledge about what they write.
- Write what people tell them.

- Cites specific research studies when making a research-based claim.
- Makes research-based claims without citing research. *"Research has shown …" "Scientists are now telling us that …" "It has been proven that …" "We know that …" "Whole language has been debunked!"*

Emily Hanford

- Understands that basic elements of science in determining causality.
- Randomly assigns causality.

Dr. Paul Thomas

- Correlation does not infer causation.
- If two things occur together, one must have caused the other to occur.

- Generalize to larger populations only if the sample is similar and ample.
- Generalize to larger populations based on a sample size of one or two.

Sarah Schwartz

- Uses anecdotal evidence and experiences to illustrate research.
- Uses anecdotal evidence and experiences as research.

Dr. Steven Strauss, MD & PhD

- Considers journalists to be journalists.
- Considers journalists to be valid sources.

- Writes research, scholarly articles, and books
- Writes stories and columns

Jennifer Winter

- Writes for an audience with some knowledge or expertise in the field.
- Writes for an audience with little knowledge or expertise in the field.

- Strives for objectivity, reliability, and validity; reports limitations or conflicts.
- Strives for accuracy, creates the illusion of objectivity, does not report limitations or conflicts.

Dr. Maren Aukerman

- Consider themselves experts on their subjects because they are.
- Consider themselves experts on a subject because they write about it.

Corrine Hess

- Understands the basics of science and research
- Understands the basics of journalism.

Who might be able to provide the best information about reading instruction?

7. Expertise is important in conducting research and doing scholarly work in any field (including reading instruction)

a. You know what questions to ask.

b. You understand the context of the field.

c. You understand what data to collect (not all data are the same)

d. You understand how to collect data and from whom or where.

e. You understand how to make inferences based on the data.

f. You understand the limitations of data.

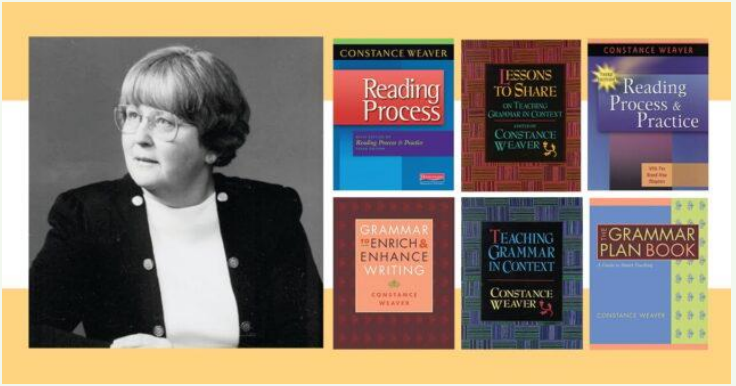
g. You understand the difference between data and research.

h. You understand the importance of context.

i. You have a theoretical context in which to use to the findings.

Richard Allington

Ken Goodman



Constance Weaver

Why is scholarship, knowledge, and expertise being shunned in favor of "common sense", "business sense", and "political sense"?

Expertise is important. I am sure Emily Hanford is a very good radio journalist. But why would we assume that she has the ability to put information related to reading instruction into a meaningful context or to accurately understand and translate reading research? Being on the radio does not make one an expert on anything other than being on the radio.

If time ...

Do you really want children to learn to read?

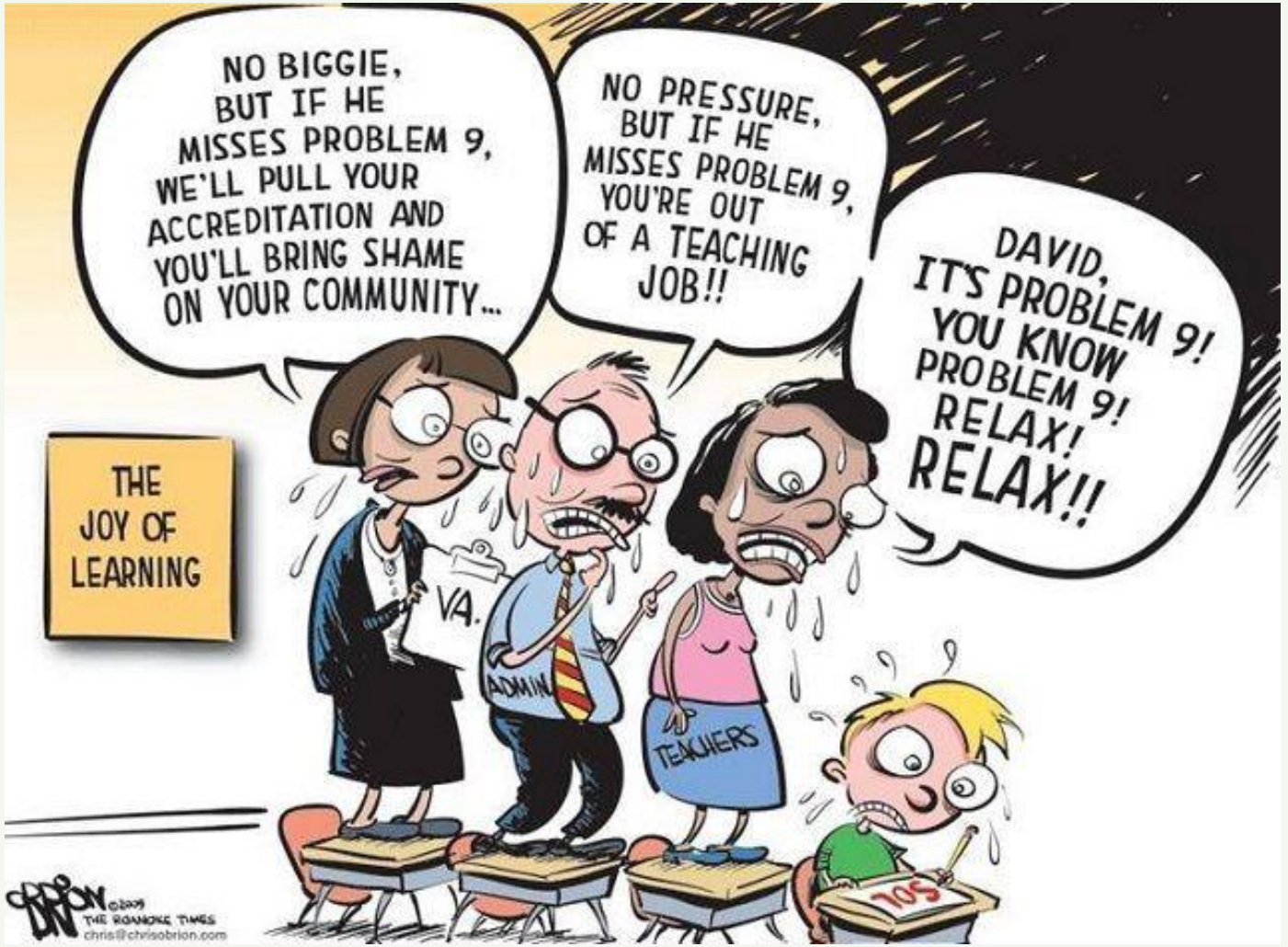
Do you really want children to develop their full literacy potential?

There’s talking and there’s doing.

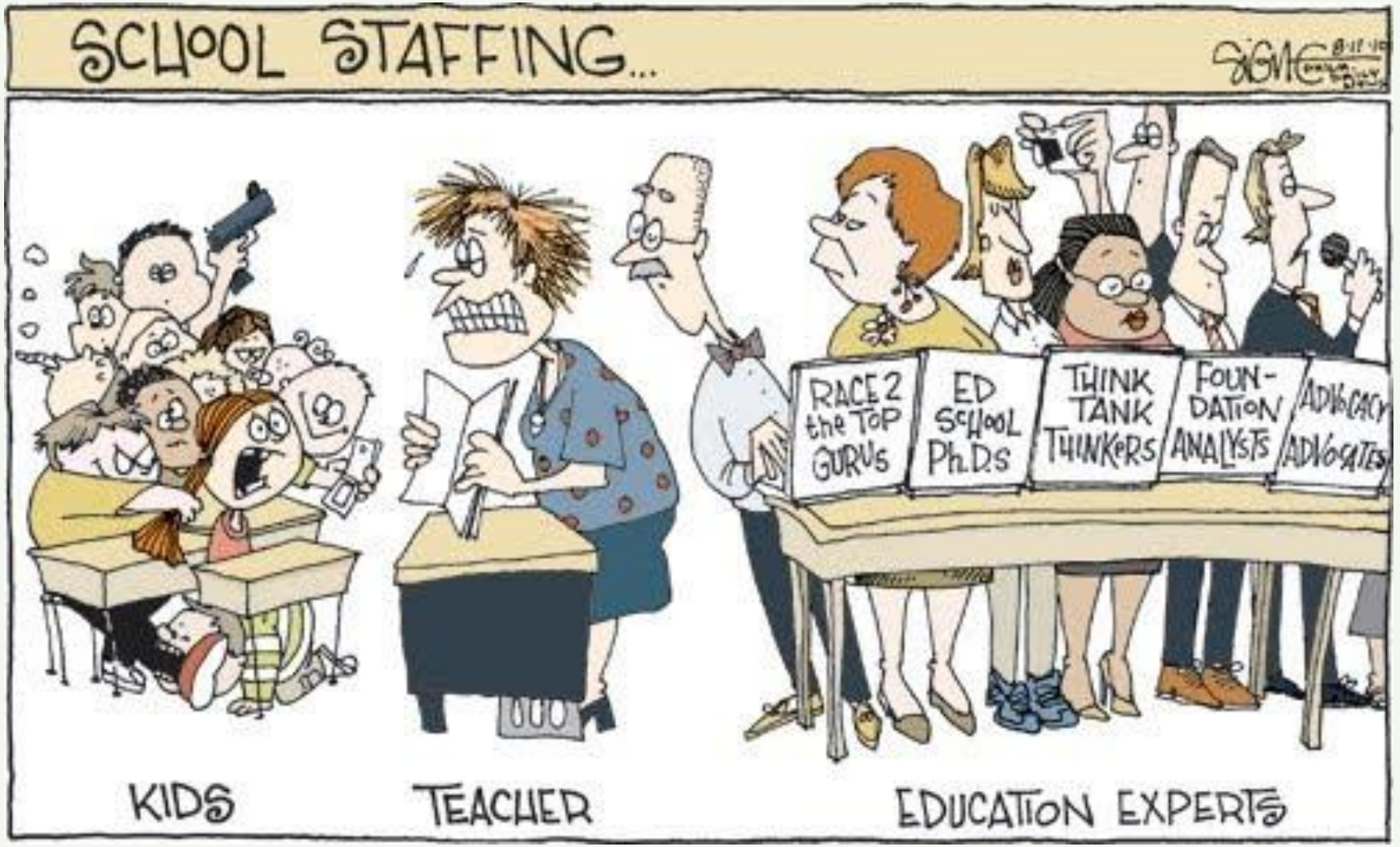
The answers are simple

Ban all standardized testing.

- Other ways to assess learning
- Lots of learning took place before standardized test

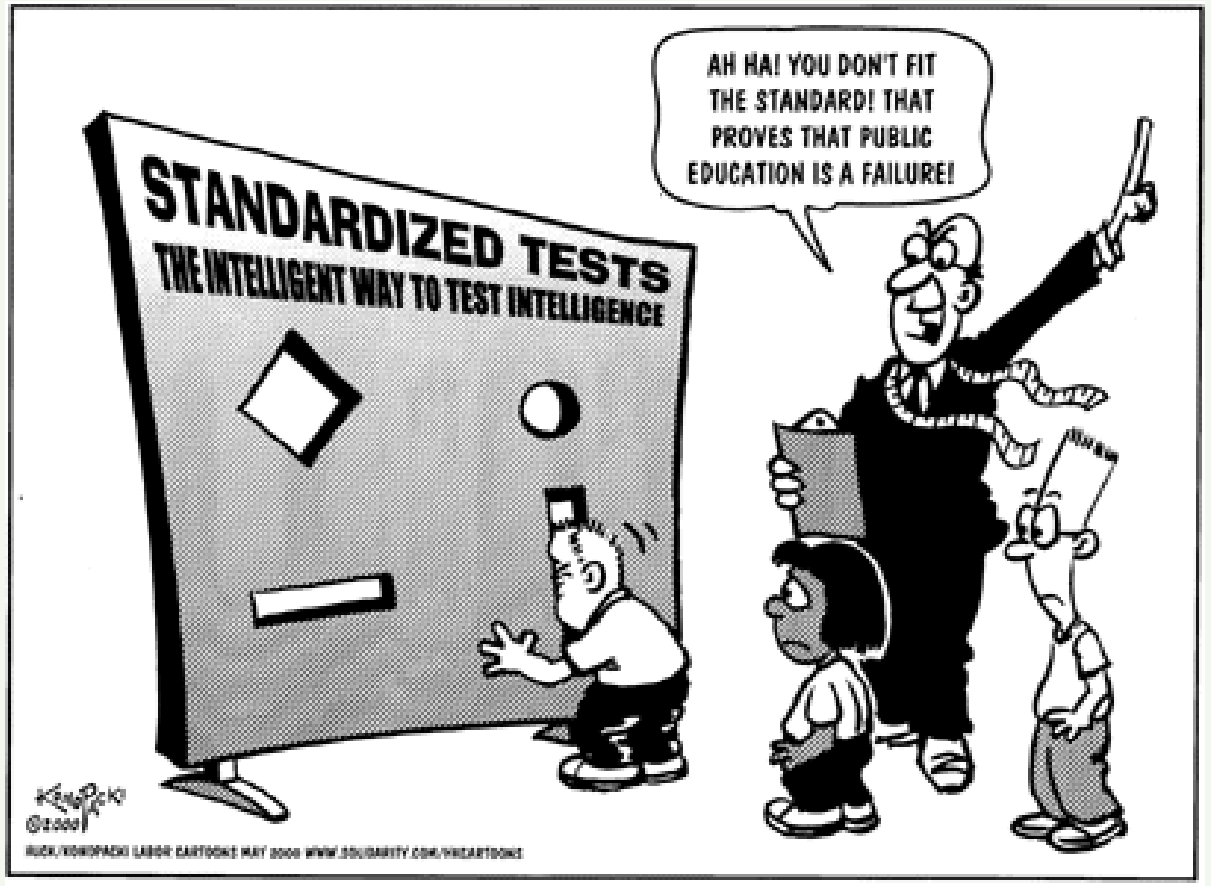


Use the money to buy lots of good books.

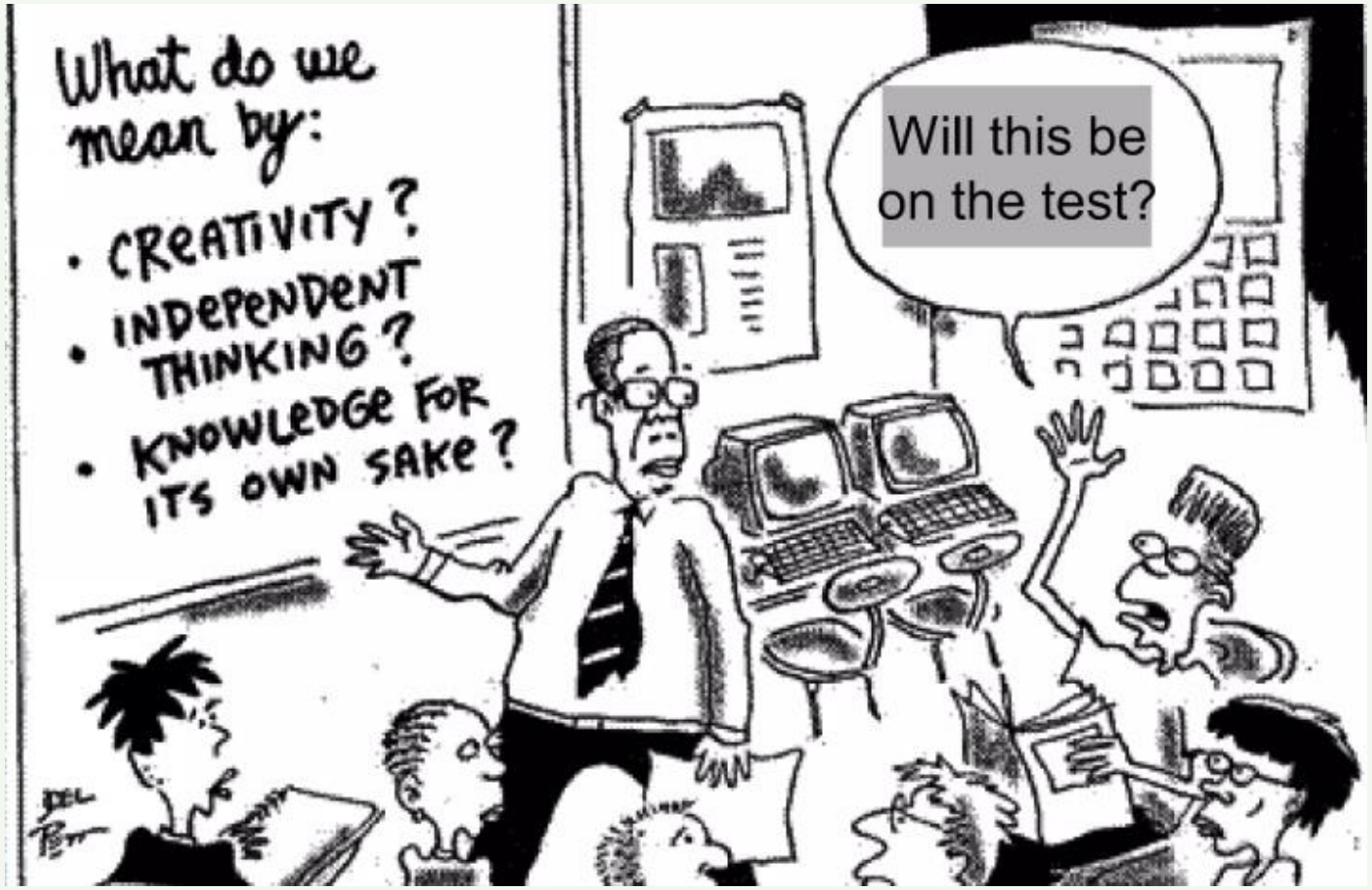


Spend a minimum of 15 minutes a day engaged in self-selected, silent reading.

Engaged in authentic writing and sharing every day.



Stop listening to radio journalists for information about reading instruction



Do you really want expert reading teachers?

Or are you looking for test preparation coaches?

There’s talking and there’s doing.

The answers are simple

1. Legitimate and continued professional development

Expert teachers have four kinds of knowledge

a. content knowledge – (know about reading)

b. pedagogical knowledge – (general teaching strategies – discovery learning, question-discussions)

c. pedagogical content knowledge – (specific content strategies, strategies for teaching reading)

d. knowledge of learners and learning – (human development, how humans learn, emotions)

three semesters?

two literacy courses?

20 years old?

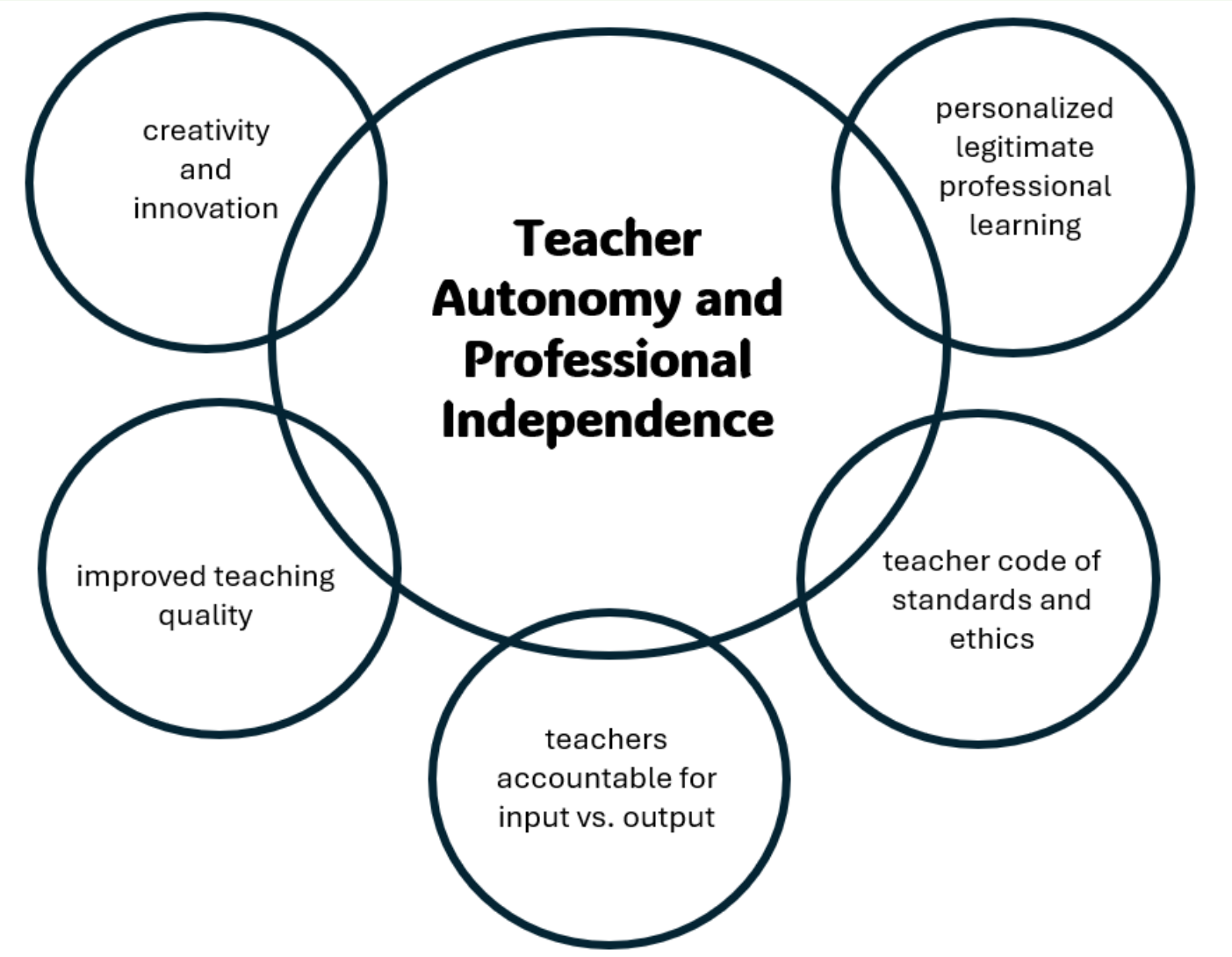
learners permit for teaching

2. Stop thanking teachers.

Pay them!

3. Teacher professional autonomy with (legitimate) professional recertification responsibility.

- content knowledge
- pedagogical knowledge
- pedagogical content knowledge
- knowledge of learners and learning



4. National standards related to teaching conditions

a. class size

b. school and classroom conditions

c. teach quality, certification

d. books in library

e. school size

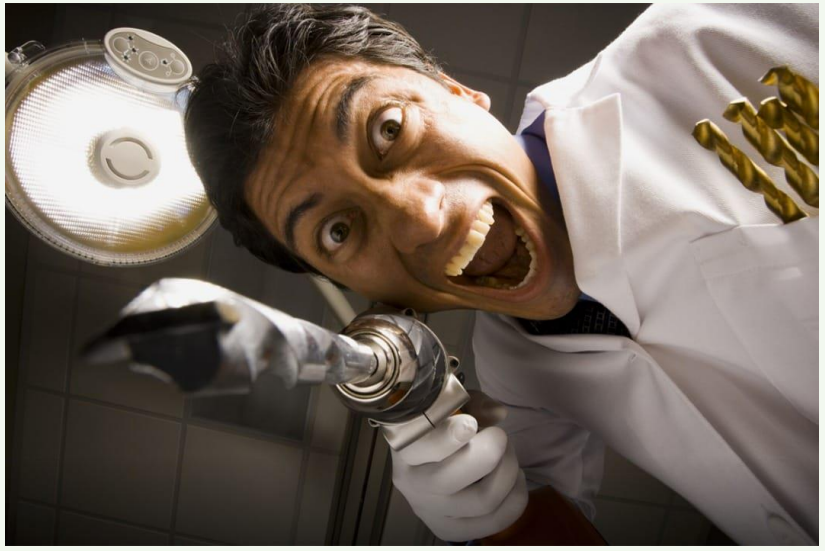
f. funding

g. breakfast and lunch

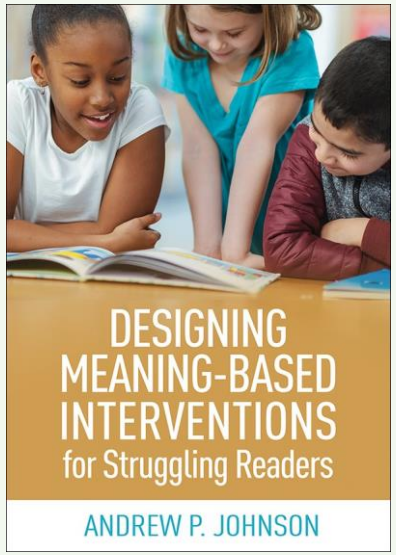
Fast track teacher preparation program?

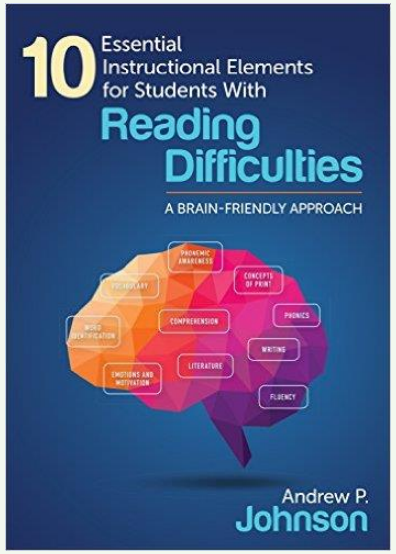
Fast-track dentist program?

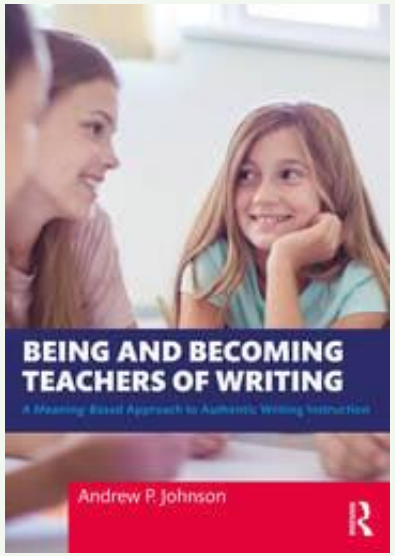
Dentists for America?



A Neurocognitive Approach to Reading Instruction







Dr. Andy Johnson
Minnesota State University