

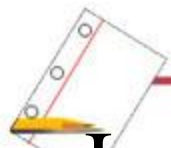
Elements of Effective Reading Interventions

Barbara Foorman, Ph.D.

Florida Center for Reading Research

Florida State University

Take-home Message



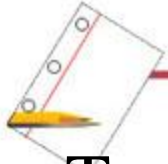
- Importance of foundational skills confirmed in 2013 WWC IES Practice Guide: Foundational Skills in Support of Reading for Understanding in Kindergarten Through Grade 3.
- Predictors of reading comprehension: Some are more malleable than others.
- Effective strategies for improving reading comprehension build on knowledge of how students learn and what counts as disciplinary evidence

Mapping Literacy Constructs to Measures



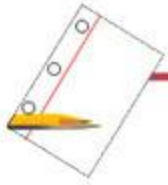
Measures	PreK	K	Gr 1	Gr 2	Gr 3-12
Print Concepts	X	(X)			
Phonological Awareness	X	X	X	(X)	
Alphabetic Knowledge (LN/LS; decoding; encoding/spelling)	X	X	X	X	X
Vocabulary (Expressive/Receptive)	X	X	X	X	(X)
Comprehension					
Listening Comprehension	X	X	(X)	(X)	
Reading Comprehension		(X)	X	X	X
Written response	name	X	X	X	X

Beginning Reading Instruction Requires



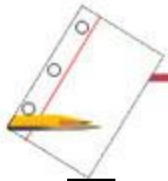
- Teach academic language skills
- Teach PA, LN, & LS, and practice blending to read simple words; “build” simple words
- Provide sequential, explicit instruction in letter-sound & sound-spelling patterns; teach high frequency regular & irregular words. Practice in isolation & in text
- Teach word analysis with syllable patterns and multiple syllables. Practice
- Provide daily text reading with & without feedback with attention to accuracy, fluency, & comprehension

Teach Academic Language Skills



-
- Have discussions that entail inferential language, including read-alouds.
 - Explicitly teach narrative language skills (e.g., how to summarize by retelling goal, conflict, resolution or how to make logical predictions, modeling linguistic elements of narrative structure.
 - Teach academic language in the context of reading and/or listening activities.

Develop Sound Segments & Links to Letters



- Teach recognition and manipulation of sound segments in speech.
- Provide explicit instruction in letter-sounds
- Use word building to link letter-sound relations with instruction in phonemic awareness

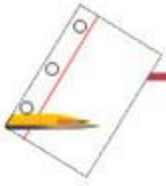
To build a CVC word: f_n (make *fan*)

To build a CVCe word: f_t_ (make *fate*)

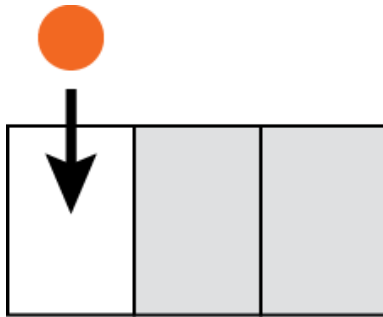
To build a CVCC word: fa__ (make *fast*)

To build a CCVC word: f_at (make *flat*)

Elkonin Sound Boxes

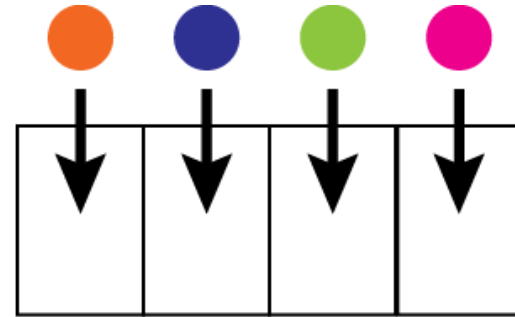


PA without Print:



for the word *sun*

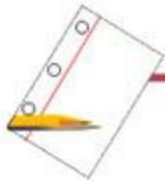
PA with Print:



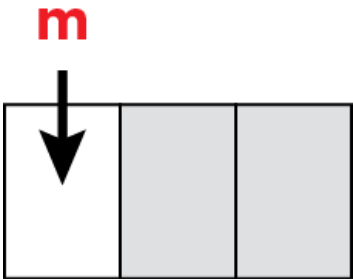
for the word *flat*



Elkonin Sound Boxes: PA with Print

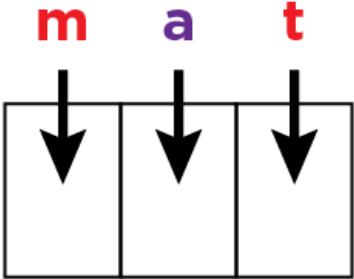


**Partial Sound
Analysis with Print:**



for the word *mat*

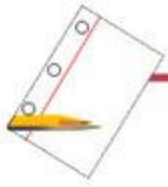
**Full Segmentation
with Print:**



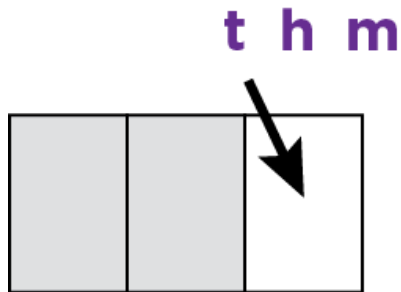
for the word *mat*



Elkonin Sound Boxes: Mapping to Print

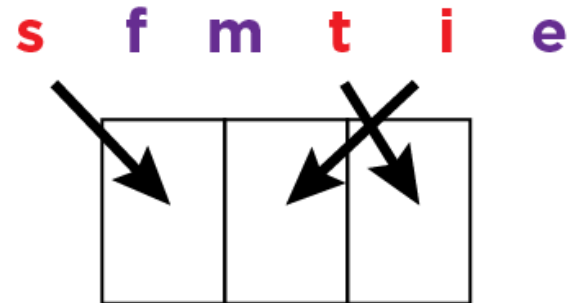


**Partial Sound with
Limited Letter
Choices**



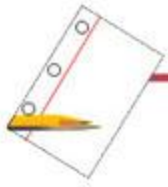
for the word *sit*

**Full Sound
Segmentation;
Limited Letter Choices**



for the word *sit*

Elkonin Sound Boxes: Mapping to Print



**Write Correct Letter
that Represents
Each Sound**

s	i	t
---	---	---

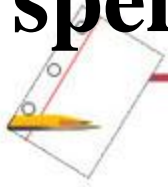
h	e	n	s
---	---	---	---

s	t	o	p
---	---	---	---



for the words *sit*, *hens*, and *stop*

Sequential & Explicit Teaching of Sound-spelling Patterns & High Frequency Words



- Blend LS to produce recognizable word
- Instruct in sound-spelling patterns
- Read decodable words in isolation & in text
- Teach high frequency words for quick recognition
- Teach nondecodable words essential to meaning of the text as whole words.



Front, smiley

e

see
these
me
eat
key
happy
chief
either

i

sit
gym

a

make
rain
play
baby
eight
vein
great
they

ɛ

pet
head

ă

cat

ī

time
pie
right
rifle
by
buy
heist

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about
lesson
elect
definition
circus

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cup
cover
flood
tough
among

aw

saw
pause
call
water
daughter
thought

ō

vote
doe
boat
snow
open
old
go
though

oo

took
put
could

oo

moo
tube
blue
chew
ruby
suit



Back, rounded

ir

sir

er

her

ur

fur

ar

car

or

pour, or



Low, open

oi/oy

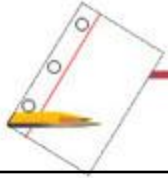
boy, oil

ou/ow

cow, out, bough

Moats (2011)

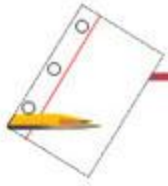
High Frequency Words



Irregular Words			Regular Words		
the	of	was	in	ask	down
to	from	they	and	best	draw
are	want	there	but	did	fall
he	said	friend	had	ate	never
a	his	come	at	eat	over
I	were	have	that	its	up
you	she	what	him	us	use

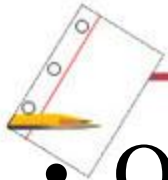
Source: Dolch (1948)

Teach Word Analysis Strategies



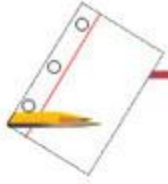
-
- Explicitly teach advanced phonics patterns
 - Show how multisyllabic words can be read by identifying pronounceable (as well as, meaningful) word parts in them.
 - Provide time for students to write words that use the same sound-spelling patterns as they're learning in reading instruction. [And teach spelling conventions and word parts]

Spelling Conventions



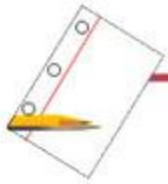
- Orthographic rules for adding suffixes:
 - Consonant doubling (*planner; muddy; skipping* but *sadness*)
 - Dropping silent *e* (*rose + y = rosy*, but *grate + ful = grateful*)
- Change *y* to *i*: *try* → *tried*; *happy* → *happiness*; but *play* → *played* and *fly* → *flying*
- Contractions: *you're; they'll; aren't; couldn't*

Word Parts and Their Meanings



- Prefixes: *dis-*, *en-*, *fore-*, *in-*, *mis-*, *pre-*
- Grammatical/inflectional suffixes: *-s*, *-ed*,
-ing, *-en*, *-er*, *-est*, *-’s*
- Basic roots: *agri* (*agriculture*); *aqua*
(*aquarium*); *art* (*artist*); *cent* (*century*), *nav*
(*navy*), *uni* (*unicorn*)
- Derivational suffixes: *-ful*; *-ly*; *-less*; *-ness*;
-y

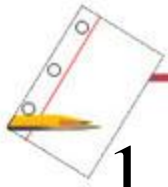
Morphological Knowledge & Reading



- Easiest to read: no shift from base to derivation (e.g., *suit*→*suitable*)
- Harder: one shift in phonology (*sign*→*signal*; *vine* → *vineyard*) or in orthography (*pity* →*piteous*; *try* → *tries*; *begin* →*beginning*; *proceed* →*procedure*; *secure* →*security*)
- Hardest: two shifts (*mature* →*maturity*; *theory* →*theoretical*)

(Carlisle & Stone, 2005)

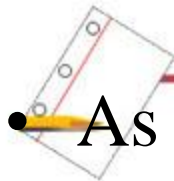
Read Text Daily with/without Feedback to Support Accuracy, Fluency, & Comprehension



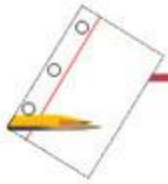
1. Choose texts, grouping formats, and routines that align with instructional goals. E.g., partner reading for fluency practice:

- First (better) reader reads the text
- Second reader corrects first reader's errors
- Two readers switch roles (at point determined by teacher)
- Second reader rereads same part of text
- First reader correct second's errors.

Peer Assisted Learning Strategies

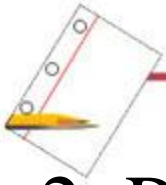
- 
- As a supplement to core reading, PALS has helped K-6 graders improve their phonological awareness, phonics, fluency, and comprehension (e.g., Fuchs et al., 1997; Mathes et al., 1994; Mathes et al., 1998; Simmons et al., 1994).
 - Teachers pair their students, creating dyads with one high and one low performing reader, and then train students to follow standard PALS procedures.
 - Increases students' practice time and opportunities to respond.
 - Offers structured and reciprocal practice on phonological awareness, phonics, fluency, and comprehension

Choosing Texts, Formats, Routines



Instructional Goal	Text characteristics	Grouping/Routines
Listening Comprehension	Grade-level	Whole-class read aloud; T-Stu alternated reading; Choral reading in small group or with partner
Decoding/Word ID	Instructional-level	Indiv oral/silent reading; Small group or partners
Fluency	Instructional (+ challenging)	Indiv oral reading (with T, peer, or audio); partner turn-taking; T-Stu echo reading, alternated reading, or simultaneous reading in group
Independent reading practice	Independent (often familiar) text	Independent oral reading, with monitoring from T or more-able peer; Individual silent reading

Text Reading (continued)



2. Provide modeling, scaffolding, & feedback, as students read orally, to support accurate & efficient word identification. Teacher gradually releases responsibility for reading to student.

Sample Teacher prompts:

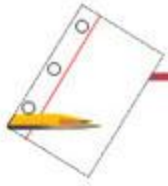
Do you see any patterns you know? [e.g., first syllable]

Sound it out. Start the word. Say the next sound. Go back and sound it out smoothly. Put all the sounds together.

Is there a silent *e* at the end of the word? What will this letter say?

You know this word part (-ing). Say the word part & read the word.

Text Reading (continued)

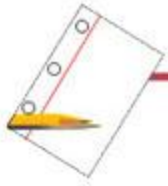


3. Teach students to self-monitor their understanding of the text and to self-correct word reading errors

Activity: the “Fix It” Game: T reads sentences and student(s) fix those that don’t make sense.

E.g.: “My black cat Max loves to ply.” Does that make sense? [Why? Fix it.]

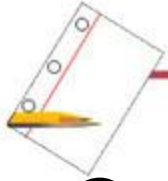
Text Reading (continued)



4. Provide opportunities for oral reading practice with feedback for the purpose of developing fluent and accurate reading with expression.

[Note: Fluent, accurate, reading with expression is usually a consequence of understanding what has been read.]

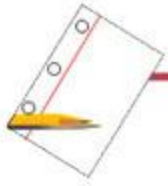
Predictors of Reading Comprehension



- Oral language skill: vocabulary, syntax, inference making, comprehension monitoring
- Memory
- Strategies
- Prior knowledge
- Motivation/engagement

What's malleable at what age?

Effective Reading Strategies



- Activating prior knowledge or predicting
- Questioning (with other strategies)
- Visualization
- Monitoring, clarifying, or fix up
- Inference training
- Retelling

(See WWC IES Practice Guide on RC)

LANGUAGE COMPREHENSION

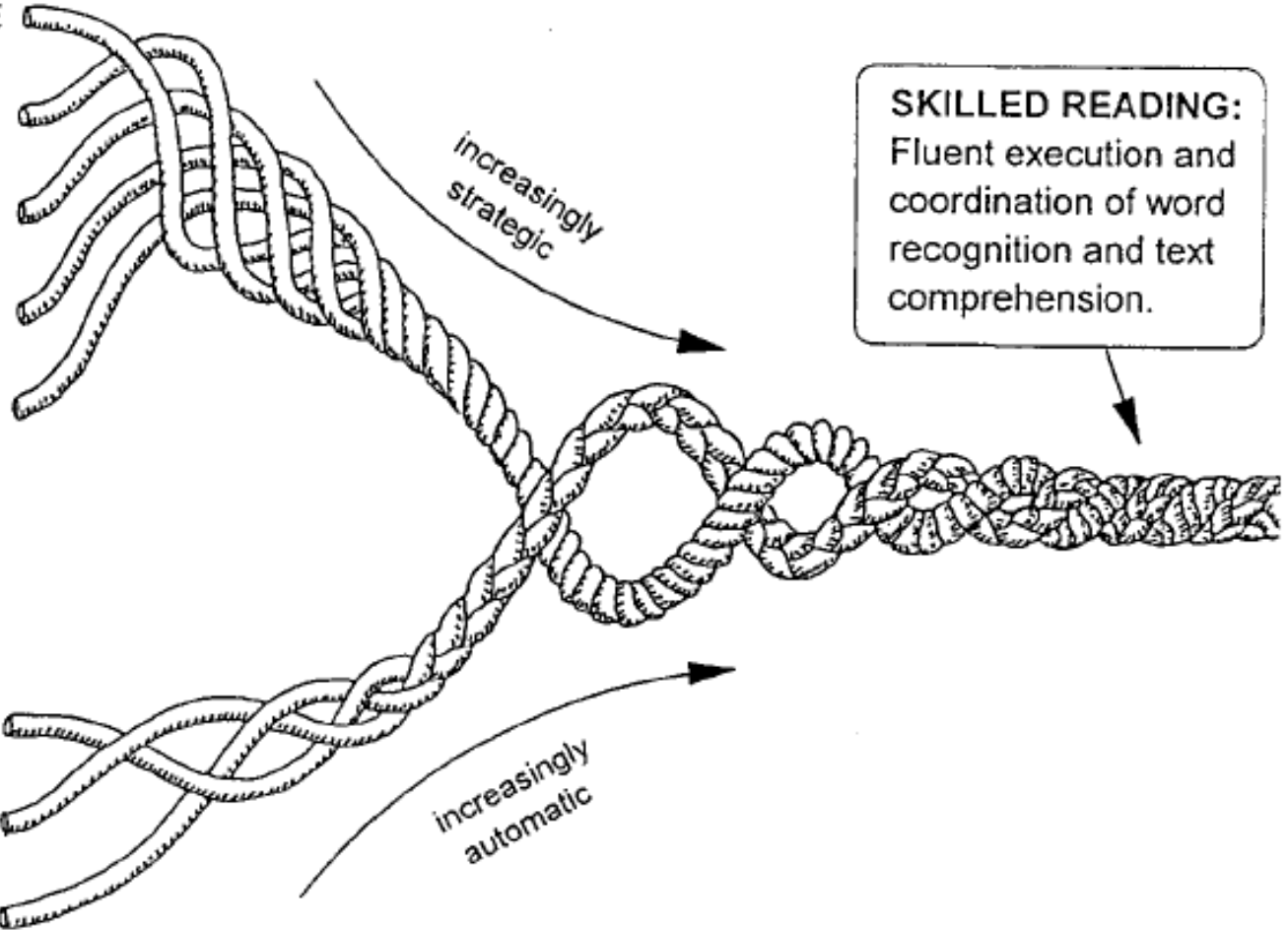
BACKGROUND KNOWLEDGE
(facts, concepts, etc.)

VOCABULARY
(breadth, precision, links, etc.)

LANGUAGE STRUCTURES
(syntax, semantics, etc.)

VERBAL REASONING
(inference, metaphor, etc.)

LITERACY KNOWLEDGE
(print concepts, genres, etc.)



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

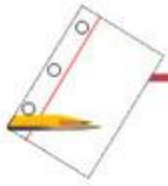
WORD RECOGNITION

PHONOLOGICAL AWARENESS
(syllables, phonemes, etc.)

DECODING (alphabetic principle,
spelling-sound correspondences)

SIGHT RECOGNITION
(of familiar words)

3 approaches to address reading comprehension difficulties (Clark et al., 2010)



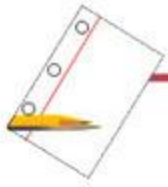
Random assignment to control or one of three interventions:

Text comprehension (TC)- inference training and reciprocal teaching

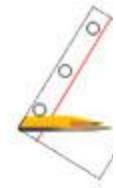
Oral language (OC)- listening comprehension and vocabulary

Combined approach (COM)- integrates text comprehension and oral language approaches

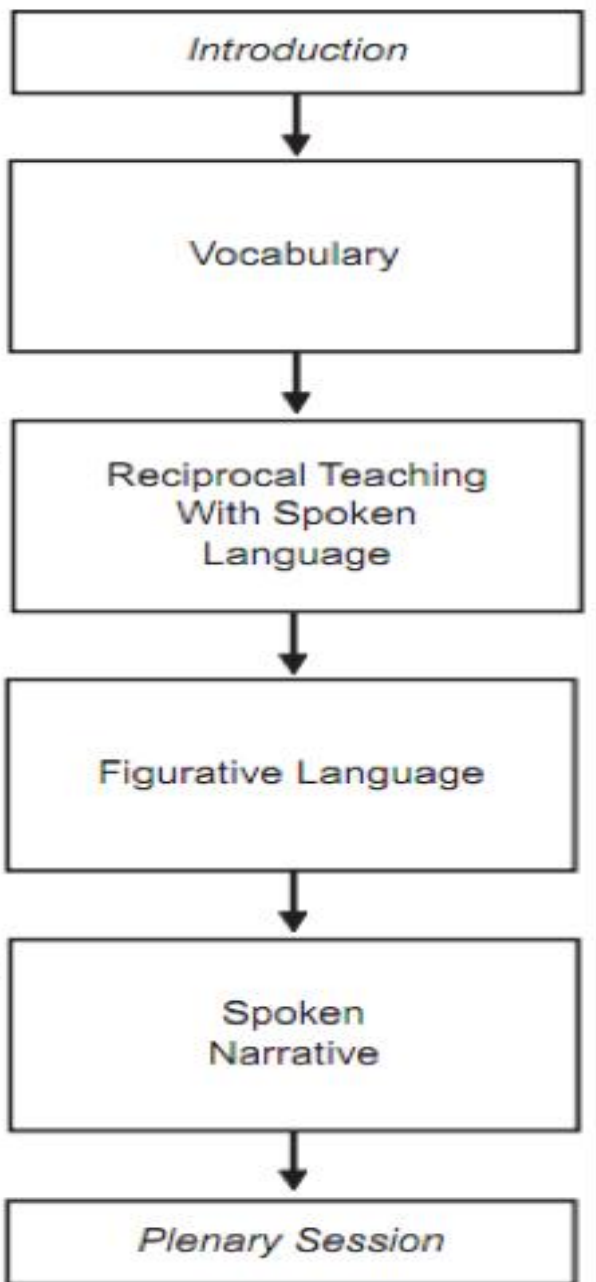
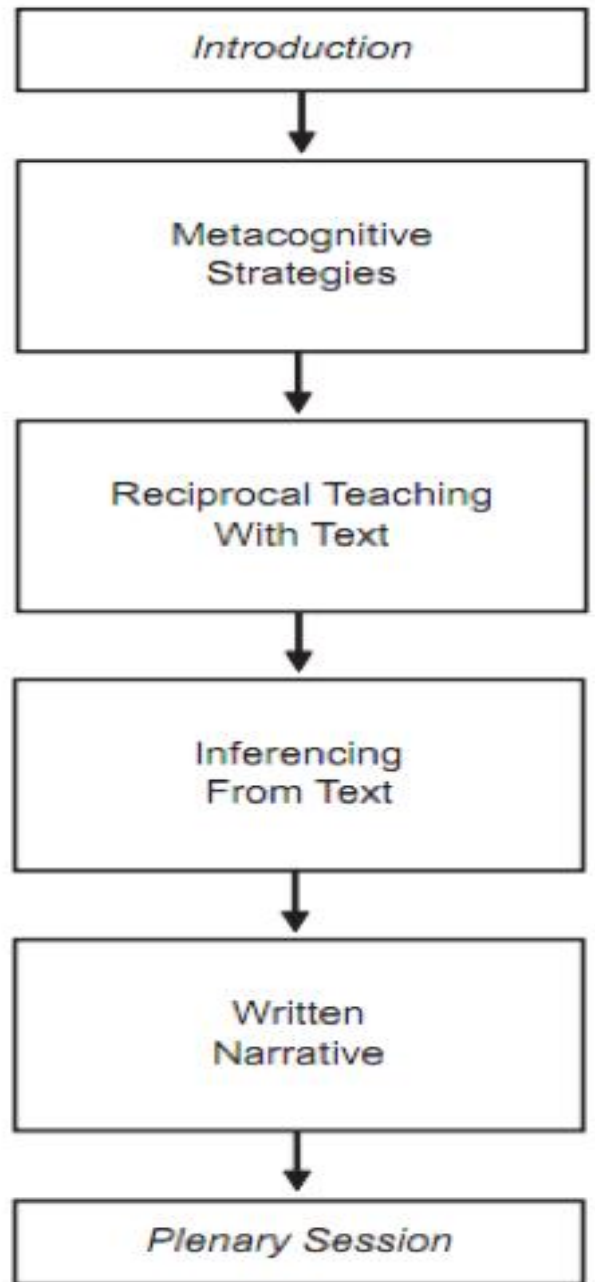
Participants



- 84, 8-9 years olds with the greatest discrepancy between reading comprehension and reading fluency
- 23 schools - Yorkshire England
- Varying SES
- All taught in mainstream classroom



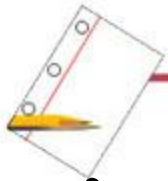
3 min
↓
1.
5 min
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2.
7 min
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4.
7 min
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3 min



↔
Activities Largely Parallel

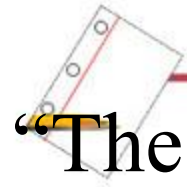
↔
Activities Largely Parallel

Results



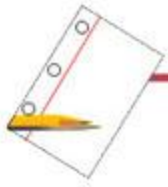
- All 3 intervention groups made significant improvements in reading comprehension relative to the untreated control group.
- Long term gains (11-mos follow-up) in reading comprehension were largest in the OL group!
- OL and COM groups also demonstrated significant improvements in expressive vocabulary compared to the control group and this was a mediator of the improved reading comprehension of the OL and COM groups.
- RC difficulties reflect at least partly oral language weaknesses that can be ameliorated by suitable teaching.

Vocabulary Lexicon

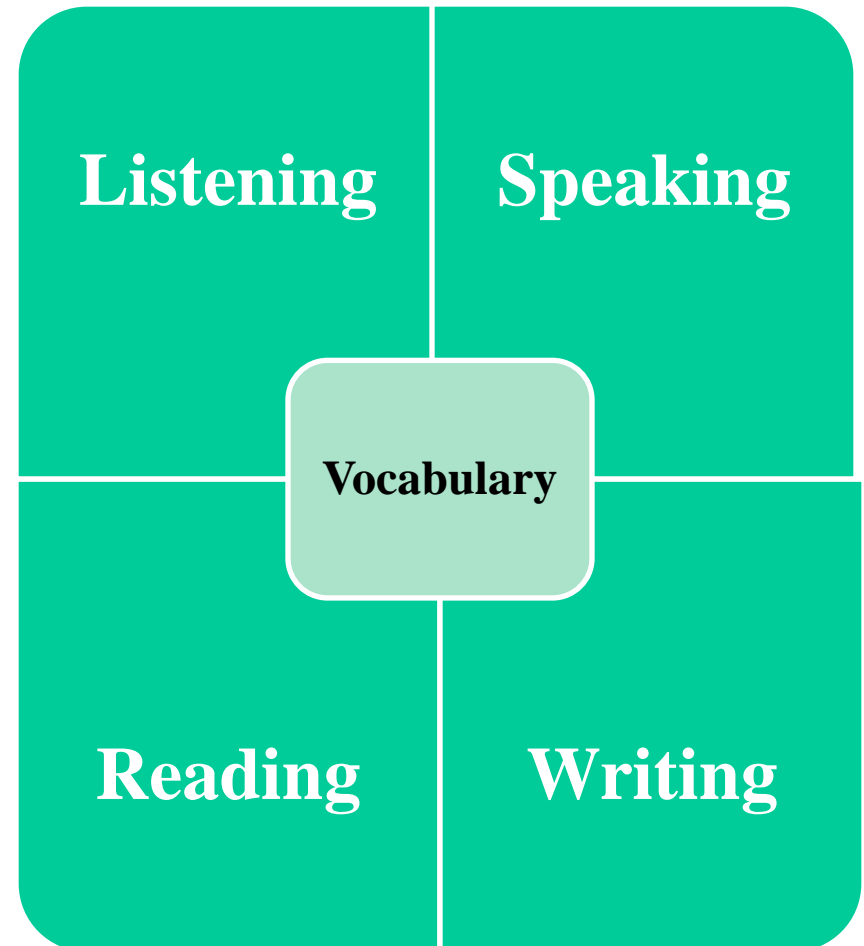


“The lexicon of a language is the **stock of established words speakers can draw on when they speak and have recourse to in understanding what they hear.** This stock is stored in memory in such a way that speakers can locate the relevant units to use in both speaking and understanding. To do this, of course, speakers have to be able to identify words either by looking them up in memory (for comprehension) or by retrieving them as appropriate forms for conveying specific meaning (for production).” (Clark, 1993, p. 2)

The Vocabulary Quartet & Levels of Knowing



- Receptive vs. Expressive
- Written vs. oral mode
- Depth: Level of understanding
- Breadth: Amount of words in the lexicon

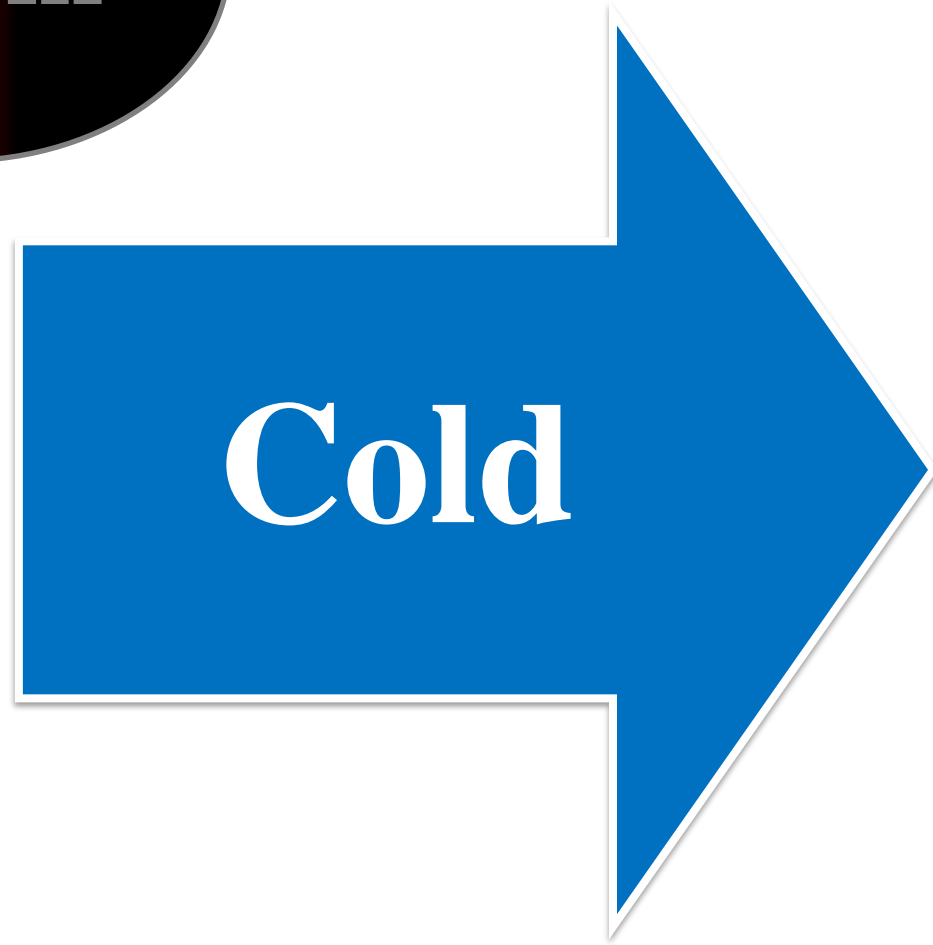
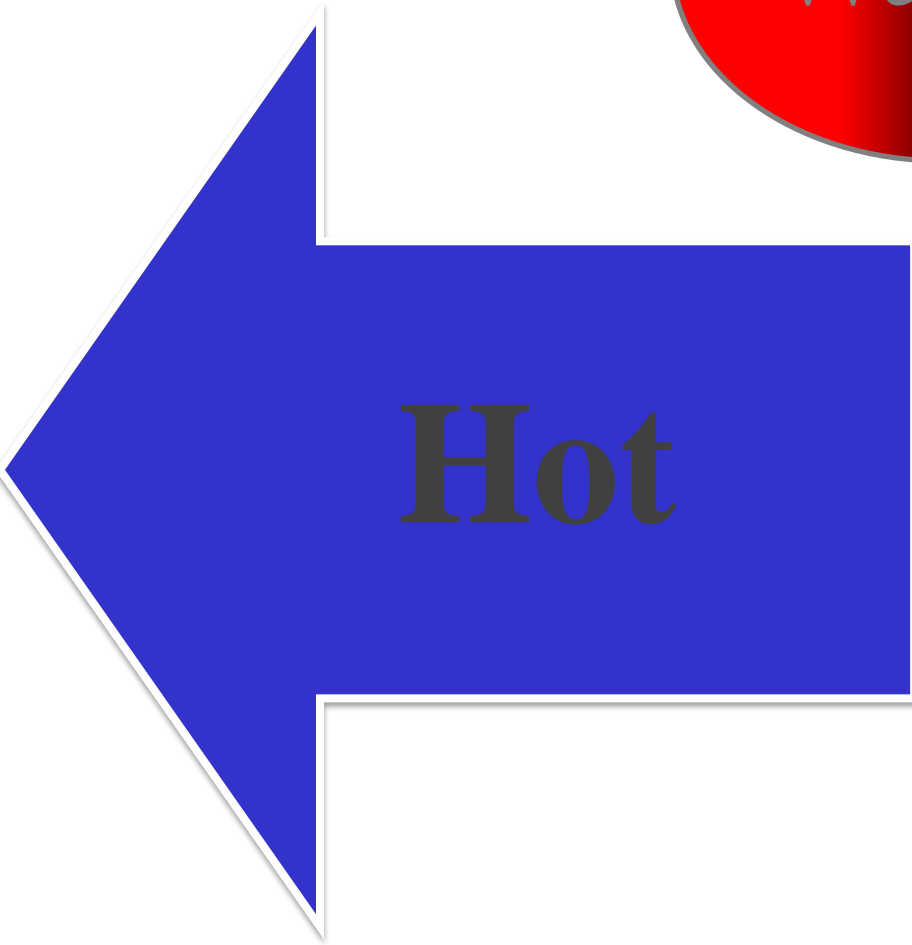
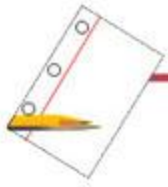


Dimensions of Word Knowledge



- Knowledge of word's spoken form (pronunciation)
- Written form (spelling)
- Grammatical behavior (syntactic/morphological features)
- Co-locational behavior (occurs with other words)
- Frequency (orally and in print)
- Stylistic register (e.g., academic language; informal)
- Conceptual meaning (antonyms, synonyms)
- Association with other words (inter-relatedness)

Interrelatedness





Thesaurus Entry: *Exacerbate*

Exacerbate vb to cause to become increasingly bitter or severe <foolish words that only *exacerbated* the quarrel>

synonym acerbate, embitter, envenom

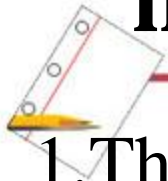
related annoy, exasperate, irritate, provoke; aggravate, heighten, intensify; inflame

idiom add fuel to the flame, fan the flames, feed the fire, pour oil on the fire

contrasted appease, mollify, pacify, placate, quell; lessen, moderate

antonym assuage

Weak empirical link between vocabulary instruction & reading comprehension



1. Three plausible explanations (Pearson et al., 2007)

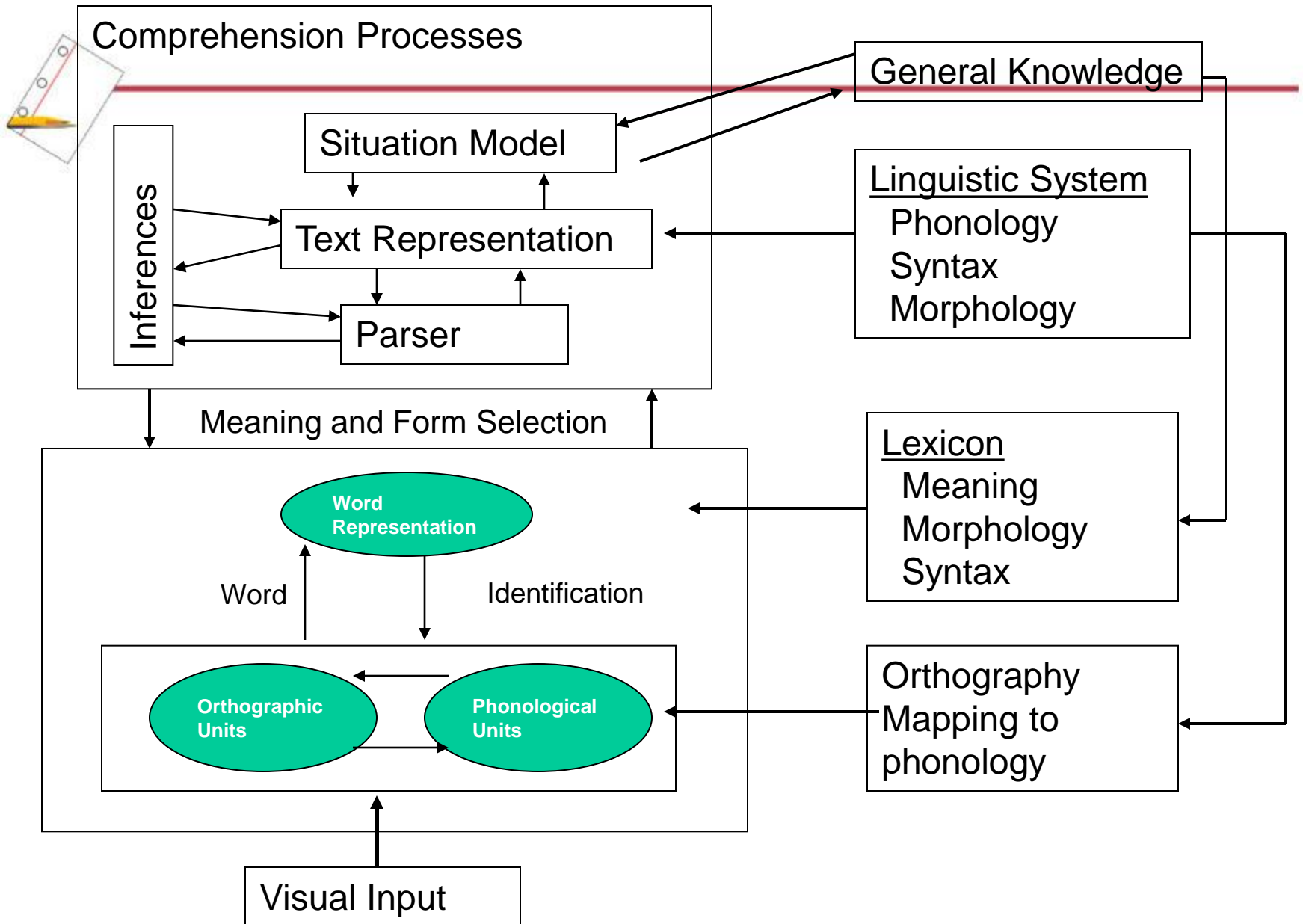
No connection between vocabulary and comprehension

Vocabulary instruction is focused on a local skill set that does not transfer to far skills such as reading comprehension

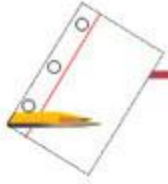
Vocabulary measures do not adequately capture enough information on the dimensions of vocabulary that transfer to reading comprehension

2. New studies are more encouraging (e.g., Snow et al., 2009; Leseaux et al., 2010)

Components of Reading Comprehension (Perfetti, 1999)

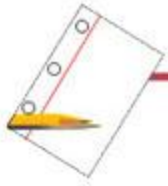


From Barbara Tuckman's *The Zimmerman Telegram...*



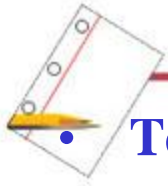
The first message of the morning watch plopped out of the pneumatic tube into a wire basket with no more premonitory rattle than usual. The duty officer at the British Naval Intelligence twisted open the cartridge and examined the German wireless intercept it contained without noting anything of unusual significance. When a glance showed him that the message was in non-naval code, he sent it in to the Political Section in the inner room and thought no more about it. The date was January 17, 1917, past the halfway mark of a war that had already ground through thirty months of reckless carnage and no gain.

What Makes This Text Difficult?



- Consider the text type and structure
- Consider prior knowledge
- Consider the vocabulary
- Consider the discourse features—linguistic markers for coherence, coreference, deixis
- Consider the inferences needed

Instructional Considerations



• Text Type/Structure

persuasive text

- anti-war sentiment, “thirty months of reckless carnage and no gain”
- indictment of war bureaucracy

narrative structure

historical non-fiction

• Prior Knowledge

World War I

- text references: war, 1917, British, German, duty officer

early 20th century communications

- text references: telegram, pneumatic tube, wire basket, wireless intercept

Zimmerman telegram

- text references: German wireless, non-naval code

TELEGRAM RECEIVED.

MAILED

Oct 1-8-58

W. W. Harrison, State Dept.

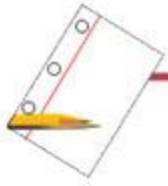
By *Mark A. Eckhoff Assistant*

Date *Oct 27, 1958*

FROM 2nd from London # 5747.

"We intend to begin on the first of February unrestricted submarine warfare. We shall endeavor in spite of this to keep the United States of America neutral. In the event of this not succeeding, we make Mexico a proposal of alliance on the following basis: make war together, make peace together, generous financial support and an understanding on our part that Mexico is to reconquer the lost territory in Texas, New Mexico, and Arizona. The settlement in detail is left to you. You will inform the President of the above most secretly as soon as the outbreak of war with the United States of America is certain and add the suggestion that he should, on his own initiative, ~~invite~~ ^{invite} Japan to immediate adherence and at the same time mediate between Japan and ourselves. Please call the President's attention to the fact that the ruthless employment of our submarines now offers the prospect of compelling England in a few months to make peace." Signed, ZIMMERMAN.

Questions for Discussion



- Who was Zimmermann?
- What was the purpose of the telegram?
- What's the significance of it being in non-naval code?
- What did the British hope to achieve by showing this telegram to the United States?

Instructional Considerations

(continued)



Vocabulary

academic language

- examined, significance, “ground through”

generative words

- premonitory, carnage, intercept

Tier 3 vocabulary (military domain)

- “morning watch,” non-naval code, German wireless, pneumatic tube

• Linguistic Markers (Coherence Relations)

pronouns

- duty officer = he, him

co-references

- German wireless intercept = the message

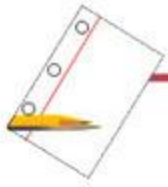
deixis

- “in the inner room”

chronology

- “When a glance showed him that the message was in non-naval code,...”

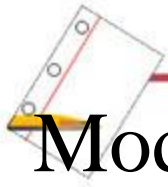
Situation Model (Kintsch & Rawson, 2005)



The situation model for the Tuchman text requires knowledge of:

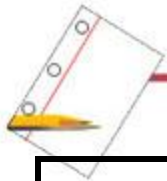
- a) The war Britain & Germany were engaged in during early 1917
- b) The ability to draw inferences about the relevance of a German message intercepted by the British and about the author's anti-war sentiment.

Instructional Delivery



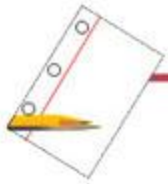
- Model strategies (activating background knowledge, questioning, searching for information, summarizing, organizing graphically, identifying story structure (e.g., Guthrie et al., 2004; Brown, Pressley et al., 1996))
- Keep the focus on the meaning of the text through high quality discussion.
- Model “thinking like an historian” (e.g., sourcing) to provide a purpose for reading (Biancarosa & Snow, 2004).

Strategies for Teaching History



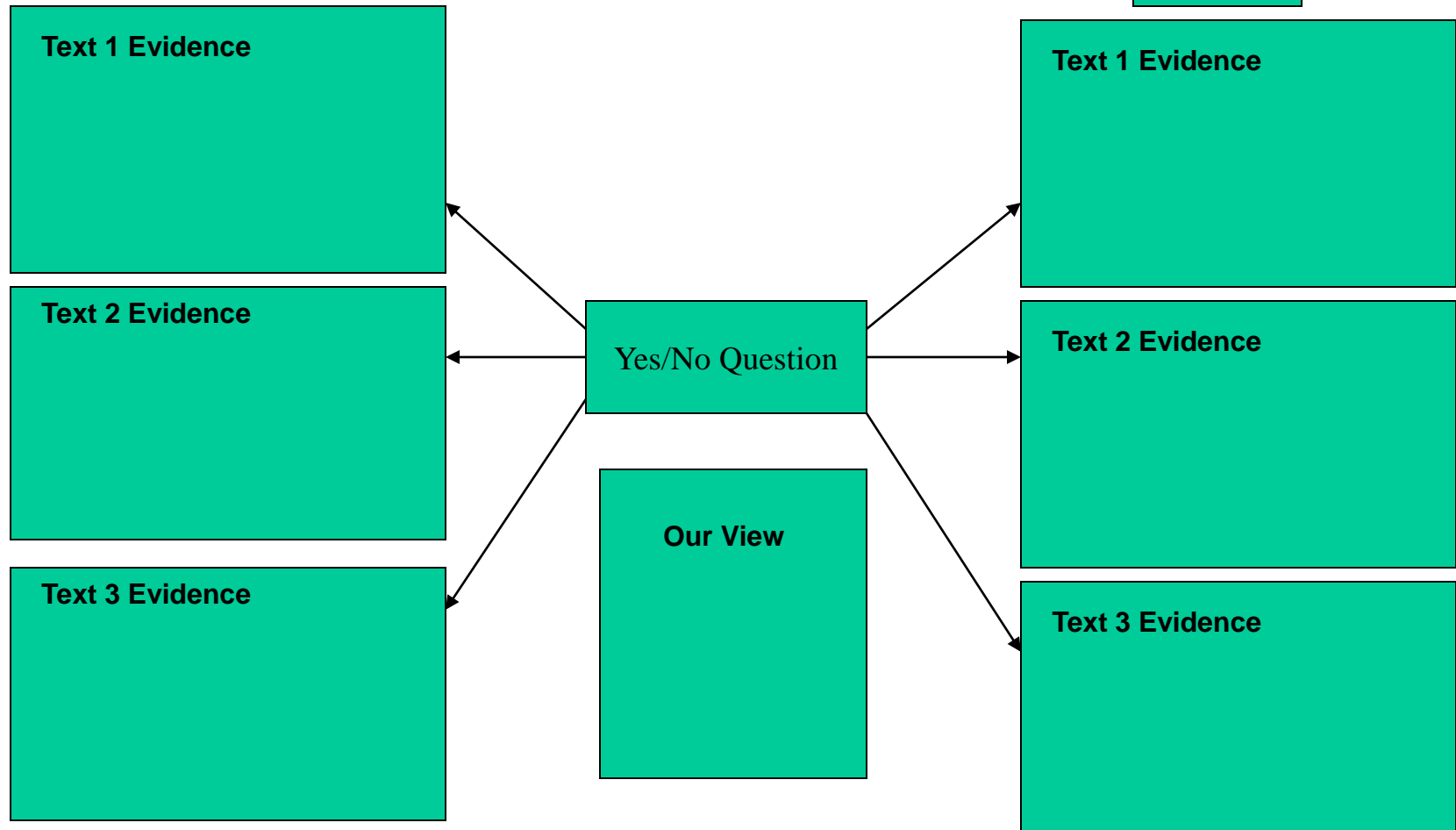
	Who?	What?	Where?	When?	Why?
1	Capt. James Cook	Reached farthest south yet--71 ⁰ South Latitude	South Sea	1774	To map out the continent of Antarctica
How connected to 2? Cook didn't accomplish the task of mapping Antarctica, so someone else had to try.					
2	Fabian Gottlieb von Bellingshausen	Circumnavigated and sighted the Antarctic continent	South Sea	1820	Same as above
How connected to 3? Belingshausen didn't accomplish the task of mapping Antarctica so someone else had to try.					
3	James Ross	Reached land	Antarctica--South Sea	1840	Same as above.
Summary: (Use cause/effect or other statements of the relationships among events). Several explorers over a century of exploration attempted to map out the Continent of Antarctica, but it was difficult to do. Ross finally reached land, but the job still wasn't done.					

Multiple Text Discussion Web

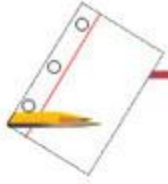


YES

NO



Multiple Text Gist

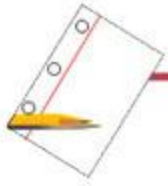


- Article Title _____
- Article Source _____
- 1. Read the article.
- 2. Describe the 5 Ws and H (Who, What, Where When, Why How)
- 3. Write a 20-word GIST. _____

- Article Title _____
- Article Source _____
- 1. Read the article.
- 2. Fill out the 5Ws and H.
- 3. Write a 20-word GIST that incorporates the first article. _____

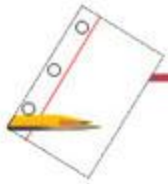
- ETC.

How Students Learn (NRC, 2005)



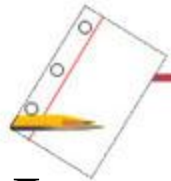
- 1: Engaging prior understandings
- 2: Essential role of factual knowledge and conceptual frameworks in understanding (novice vs. expert)
- 3: Importance of self-monitoring

What Counts as Evidence



- Mathematics: formal proof important
- Science: formal proofs; empirical observations and experimental data.
- History: multiple sources of evidence are sought and attention to author's perspective and purpose.

Knowledge of discipline affects comprehension monitoring and evaluation of author's claims.



Enacting Design Characteristics

In summary:

- Present students with “just-manageable difficulties”
- Identify a set of “enduring connected ideas”
- Make students’ thinking visible to both teachers and students (formative assessment)
- Inculcate habits of mind to assess own progress
- Establish classrooms as learning communities



Thank you!

bfoorman@fcrr.org



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