

Evidence-based interventions for preventing reading failure

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Ohio School Psychologists Association spring meeting



Disclaimer



Information and materials mentioned or shown during this presentation are provided as resources and examples for the viewer's convenience. The inclusion of specific interventions or assessments is not intended as an endorsement by the Florida Center for Reading Research.

The presenter has no financial interest in the materials mentioned in the presentation. However, several researchers at FCRR do have a financial interest in Lexia's RAPID assessment, the CTOPP, and the TOSREC.

Post questions

http://padlet.com/adrea_truckenmi/OSPA



Objectives

- Analyze the developmental components of reading from Kindergarten through grade 10
- Identify critical considerations for assessment data and choosing instructional practices at the universal, supplemental, and intensive tiers, including for special populations like English learners
- Match assessment data with evidence-based instruction that are identified by the What Works Clearinghouse and FCRR's student center activities.
- Identify the critical practical components of implementing evidence-based instruction

Components of Reading



A fresh look at the big 5

The Big 5

Phonological awareness

- Ability to hear, identify, and manipulate the individual sounds in *spoken* language.

Phonics

- Understanding that there is a predictable relationship between the sounds of spoken language and letters in written language.

Fluency

- Ability to read connected text with accuracy, speed, and proper expression

Vocabulary

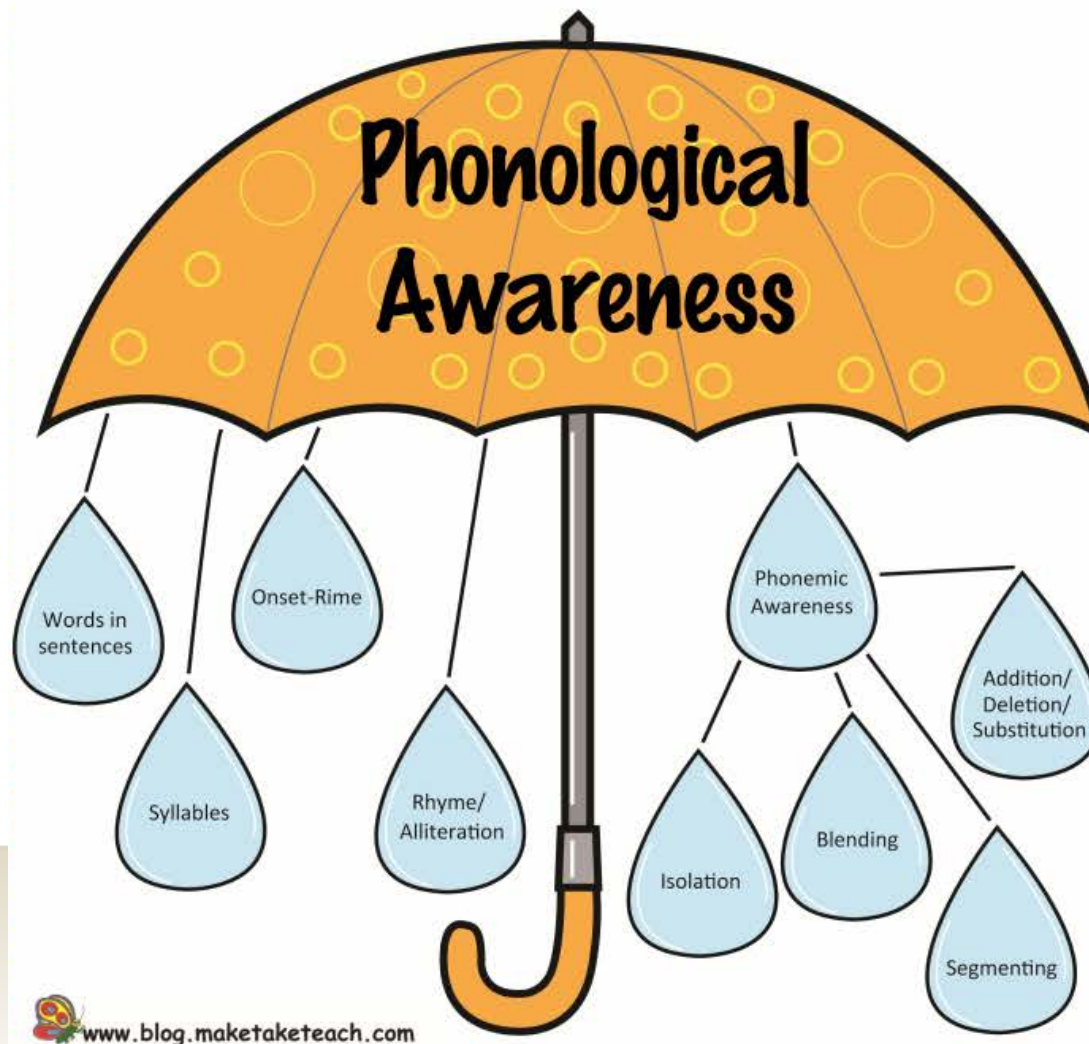
- Words we must know to communicate effectively (listening, speaking, reading, & writing)

Comprehension

- Mental representation of the text

National Reading Panel, 2000

Phonological awareness



Phonics

s sat	t tap	p pan	n nose	m mat	a ant	e egg	i ink	o otter
g goat	d dog	ck click	r run	h hat	u up	ai rain	ee knee	igh light
b bus	f farm	l lolly	j jam	v van	oa boat	oo cook	oo boot	ar star
w wish	x axe	y yell	z zap	qu quill	or fork	ur burn	ow now	oi boil
ch chin	sh ship	th think	th the	ng sing	ear near	air stair	ure sure	er writer

Vocabulary

Position in a sentence (syntax)

vocabulary 

noun | vo·cab·u·lary | \vō-'ka-byə-'ler-ē, və-'l

Phonological representation

Simple Definition of VOCABULARY

- : the words that make up a language
- : all of the words known and used by a person
- : words that are related to a particular subject

Popularity: Top 30% of words

Word frequency – tier I, II, or III

Multiple definitions

Synonyms & antonyms

Origin of VOCABULARY

Middle French *vocabulaire*, probably from medieval Latin *vocabularium*, from neuter *vocabularius* verbal, from Latin *verbum*

morphemes

Related to VOCABULARY

Synonyms

argot, cant, dialect, jargon, jive, language, lingo, patois, patter, shop, shoptalk, slang, terminology

Other Grammar and Linguistics Terms

but, allusion, anacoluthon, diacritic, idiom, infinitive, metaphor, notice, simile

Categories

Rhymes with VOCABULARY

apothecary, bicentenary, confectionary, confectionery, consigliere, constabulary, contemporary, deflationary, disciplinary, discretionary, divergency, epistolary

Phonologically similar words

Fluency

The previous day he had discovered a cave, and today he wanted to explore it. Long, thick weeds hid the mouth of the cave. Alan pushed the weeds to the side and looked into the cave. It was too dark to see anything. He turned on his flashlight and looked inside again. The cave was only five feet tall. Alan just fit when he stepped inside.

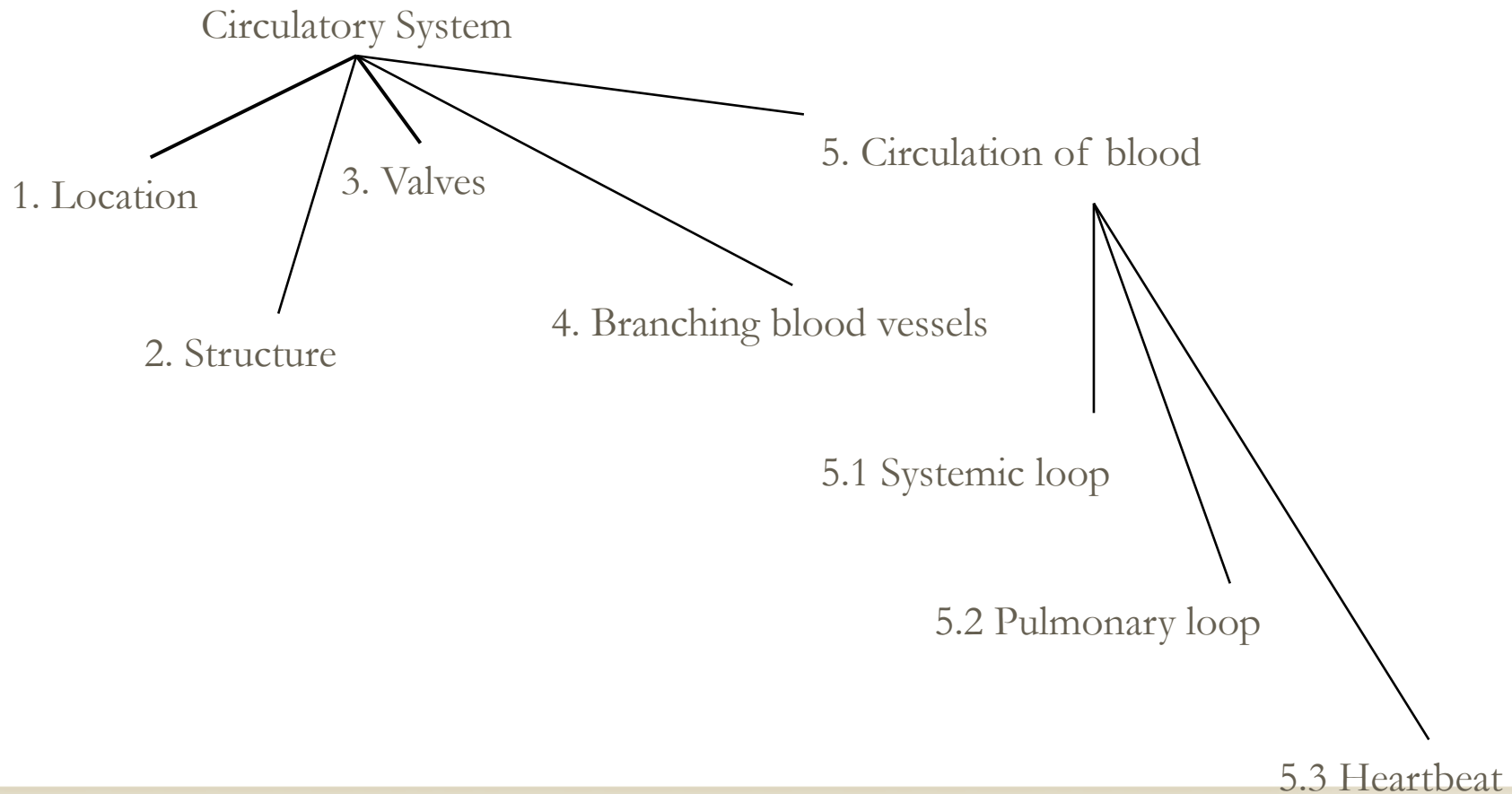
Alan put his hard hat on. It would protect his head from the roof of the cave. He shined his flashlight around the cave. It was dry and cold inside. He walked around and explored the cave. He dropped popcorn behind him as he walked. He found old dishes in the cave. The cave walls displayed several paintings of animals.

Alan didn't know what he might find. He had dreamed about finding a lost treasure or some buried gold, but he knew he was more likely to find only mud and rocks. As he worked his way deeper into the cave, he discovered small waterfalls and sharp points of rock hanging from the

tell	first
black	goes
much	try
white	write
keep	new
ten	always

noj	vez	ruz	biv	yep	/ 15 (15)
nof	lal	jon	duv	luk	/ 15 (30)
sij	yuc	mod	lef	hus	/ 15 (45)
mij	vis	kuj	jep	miz	/ 15 (60)
wip	pez	fik	vug	az	/ 14 (74)

Comprehension: text structure

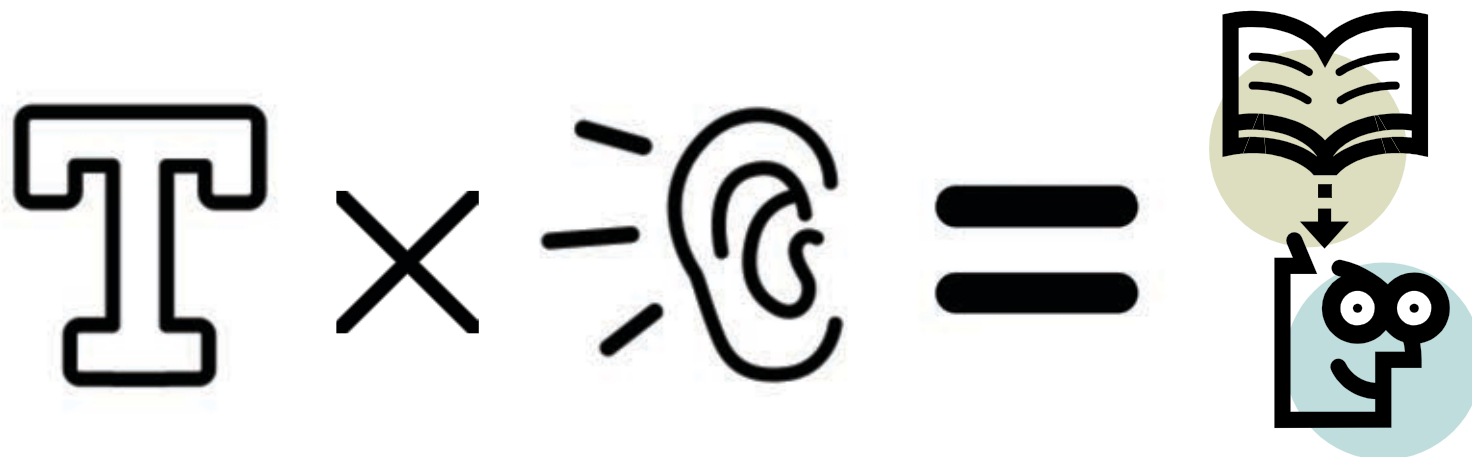


Quiz

- How many phonemes are in the word 'through'? (PA)
- What would the word be if you say the word 'enough' and then reverse the order of the sounds? (PA)
- How many morphemes are in the word 'disassemble'? (phonics)
- What must every spoken syllable in English have? (phonics)
 - (a) an accent (b) a vowel sound (c) a consonant (d) a letter combination
- What is the rule for using a 'ck' in spelling? (phonics)
- During reading, analysis of word structure would be a useful strategy for understanding which of the following words? (V)
 - (a) discriminate (b) inalterable (c) perspective (d) institution
- Which pair of words most clearly exemplifies the concept of antonyms? (V)
 - (a) morning - evening (b) parent - child (c) mean - nice (d) whole - broken
- Fluency serves as bridge between which two processes? (F)
- What are the 3 properties of fluent reading?
- Name two expository text structures. (C)
- Which of the following is particularly useful for recalling details from a narrative text?
 - (a) K-W-L (b) summarizing (c) a story map (d) predicting

What have we learned since 2000?

Simple view of reading



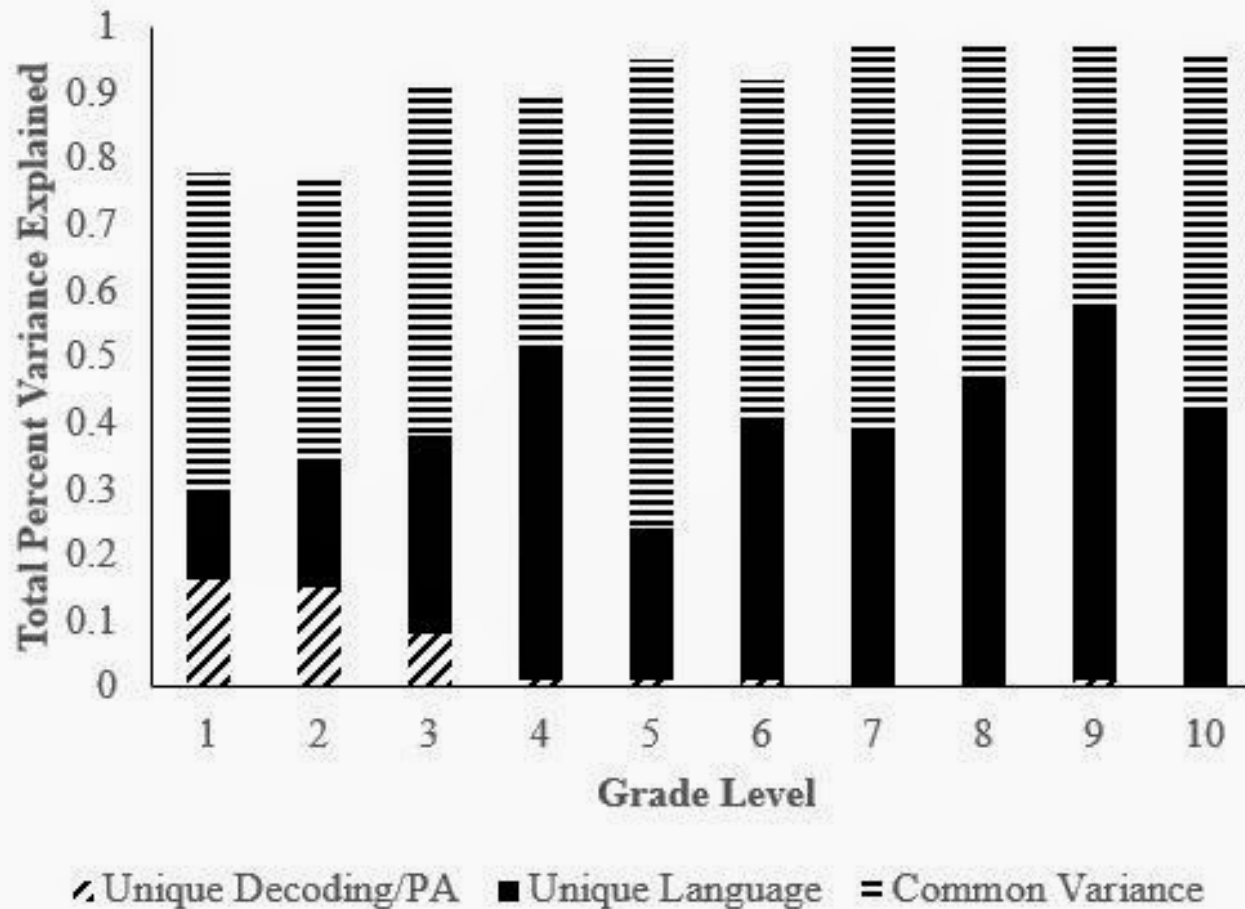
Recognizing words in
text & sounding them
out phonemically

The ability to
understand
language

The ability to
read and obtain
meaning from
what was read.

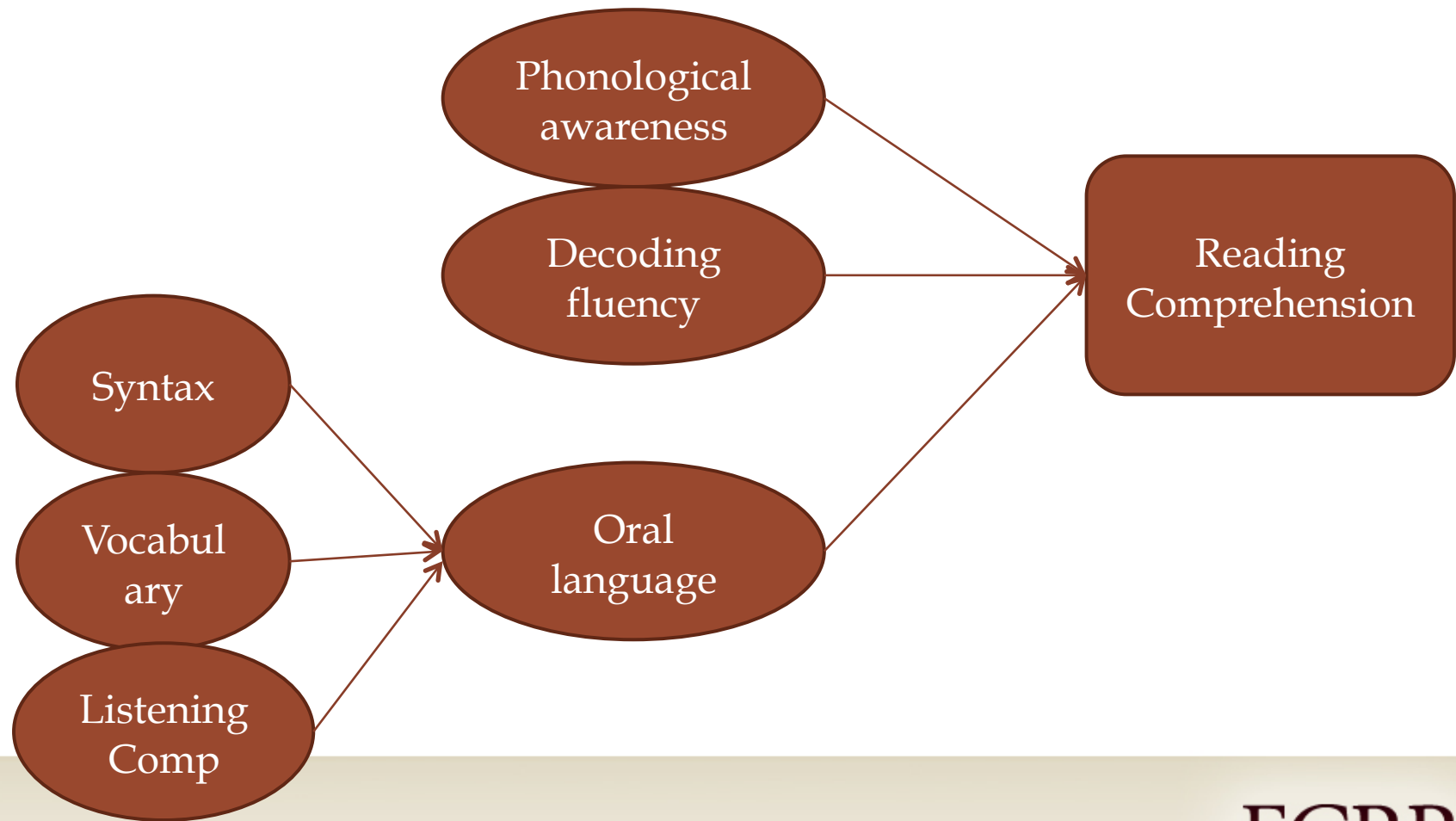
Gough & Tunmer, 1986
Wagner et al., 2014

Simple View of Reading



Petscher, 2015

Structure of reading K - 3

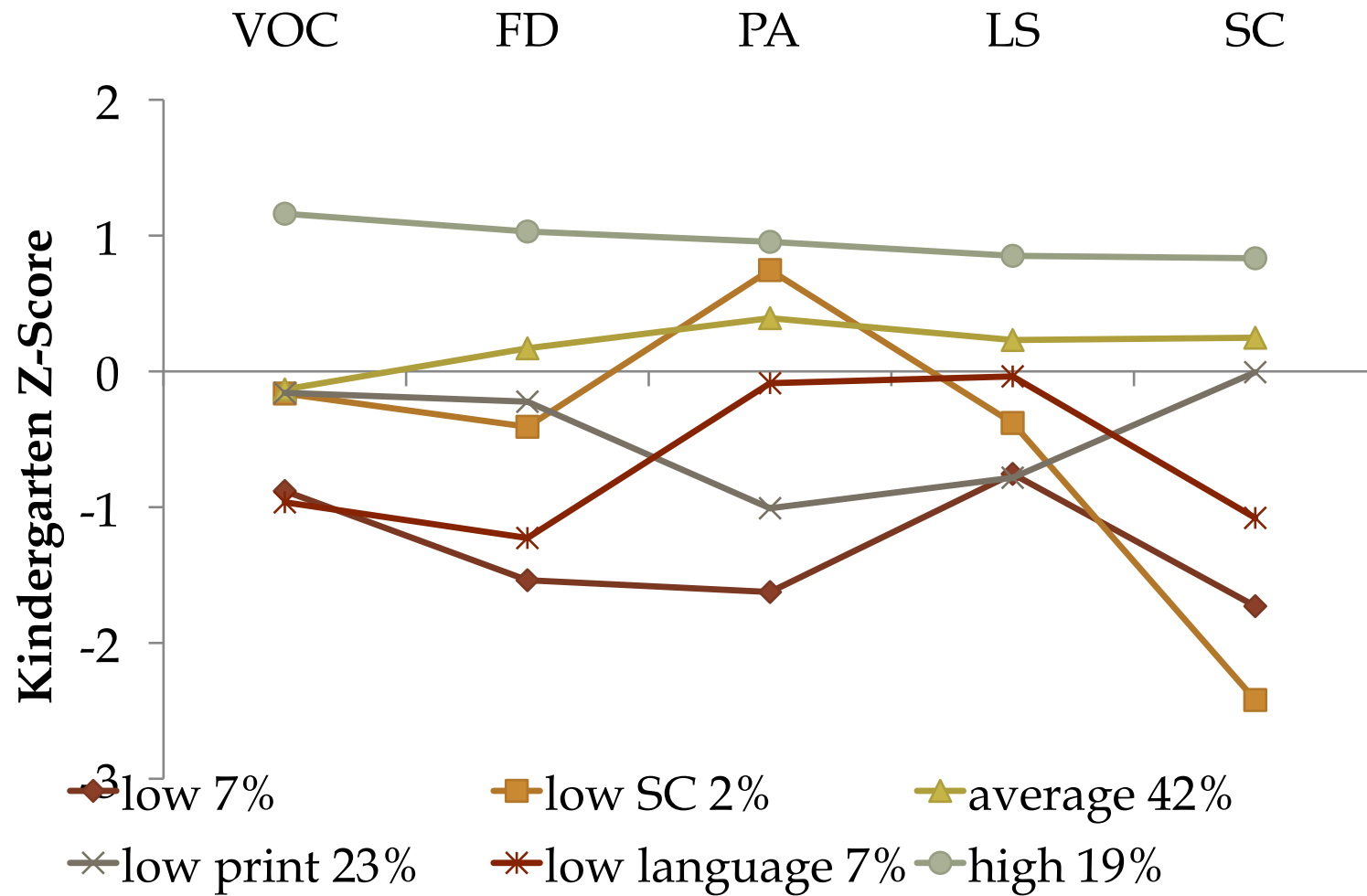


Foorman, et al., 2015 *Reading & Writing*

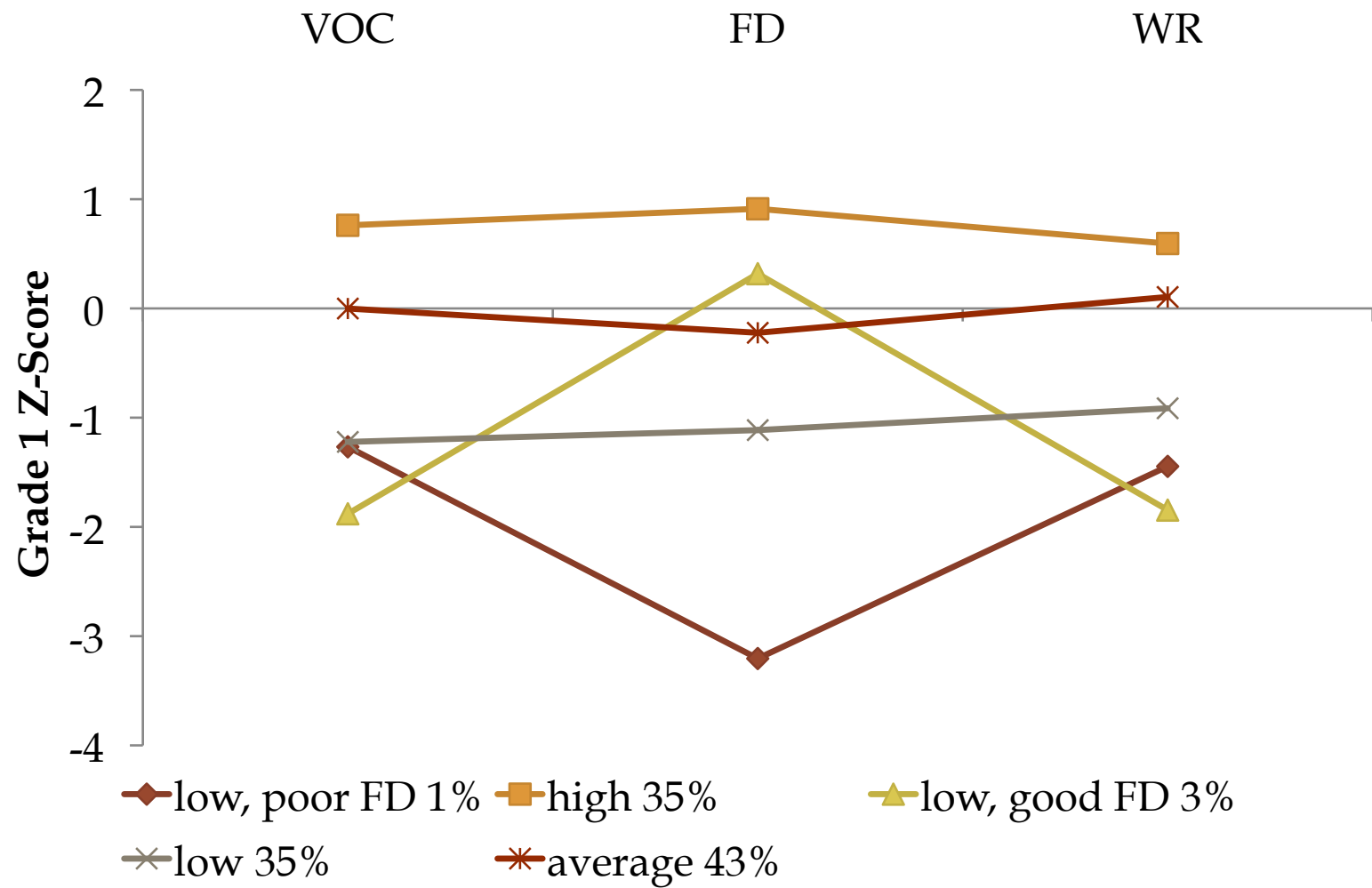
Assessment for Instruction



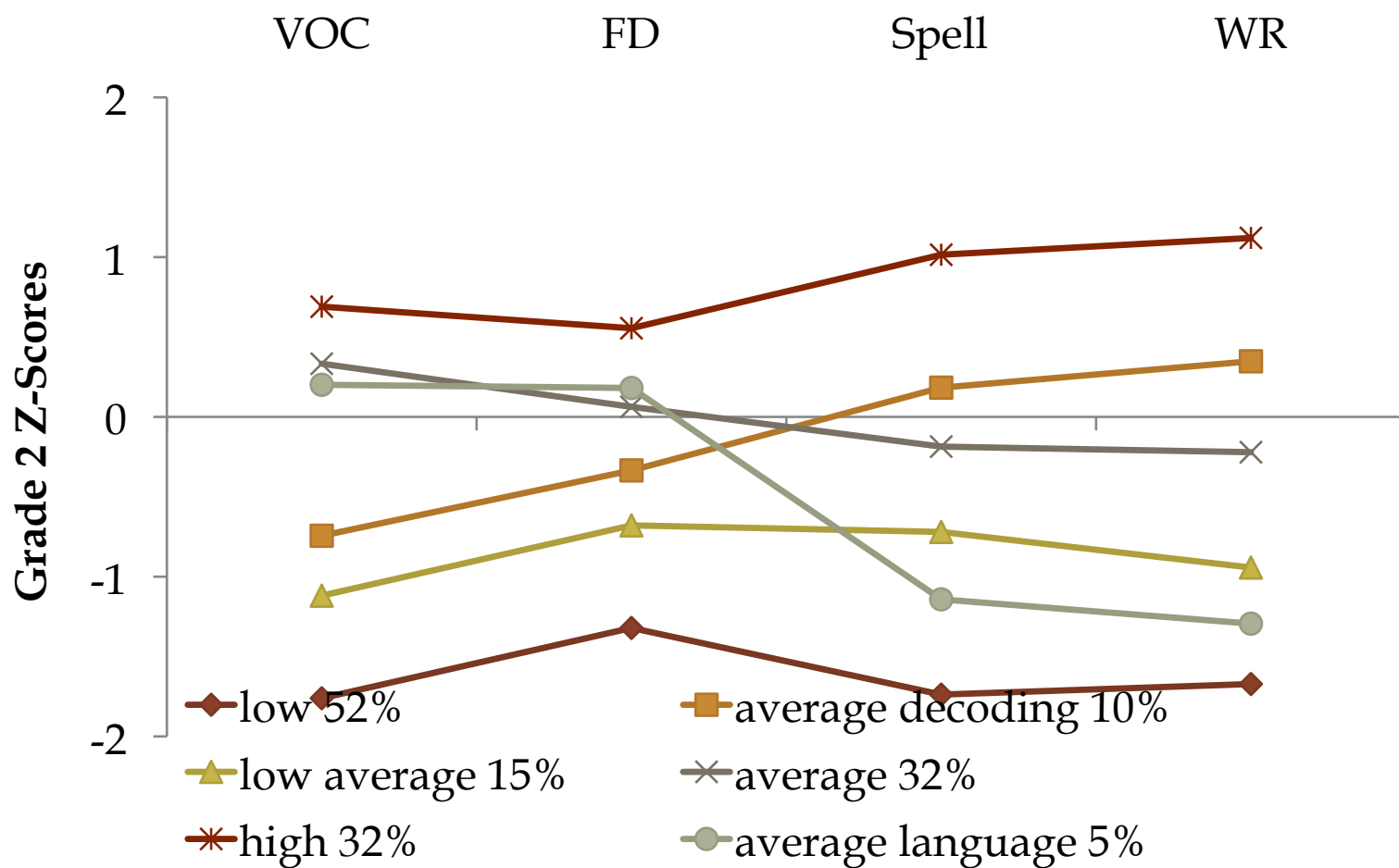
Insert quote regarding the purpose for assessment



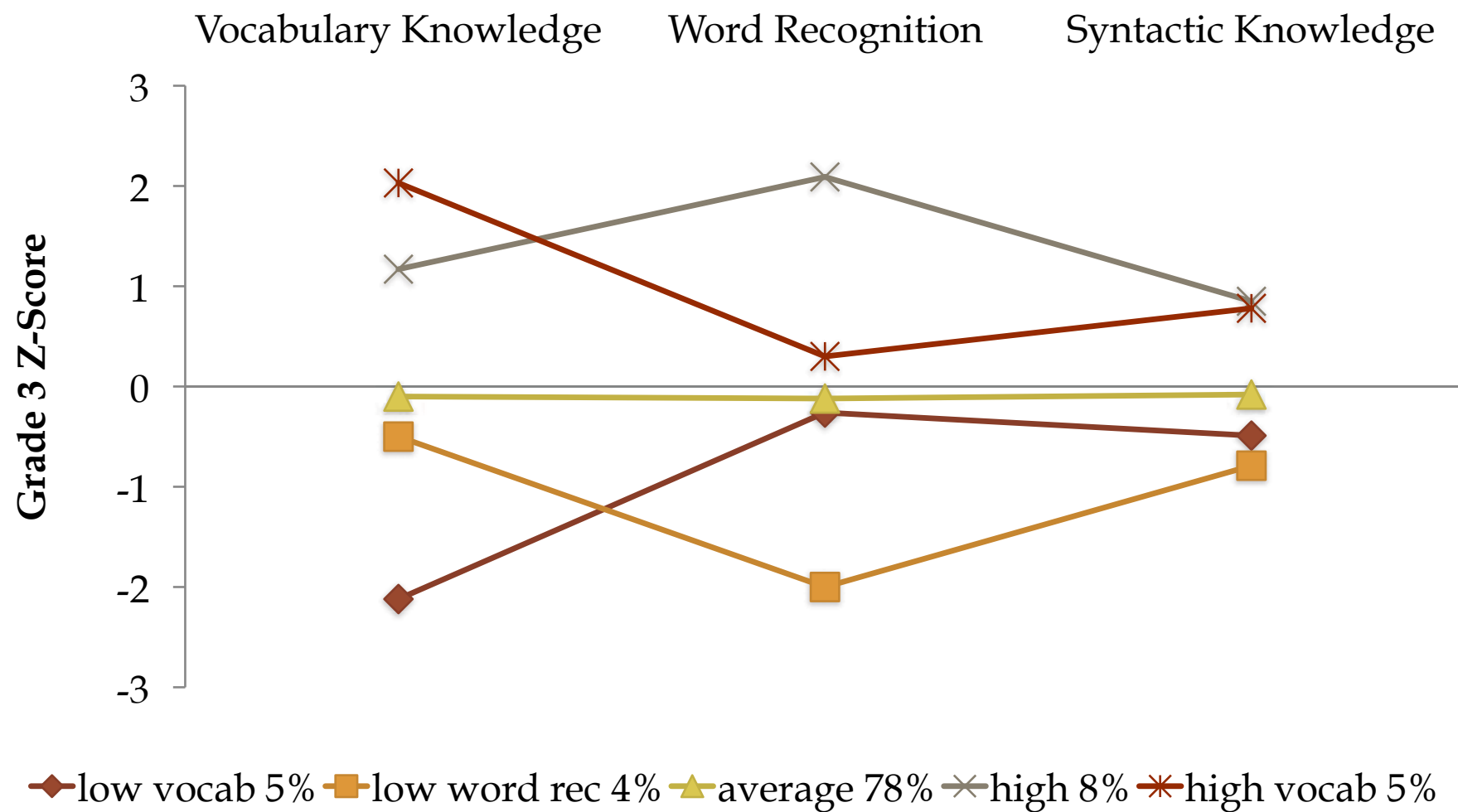
Foorman, Petscher, & Stanley, in review



Foorman, Petscher, & Stanley, in review

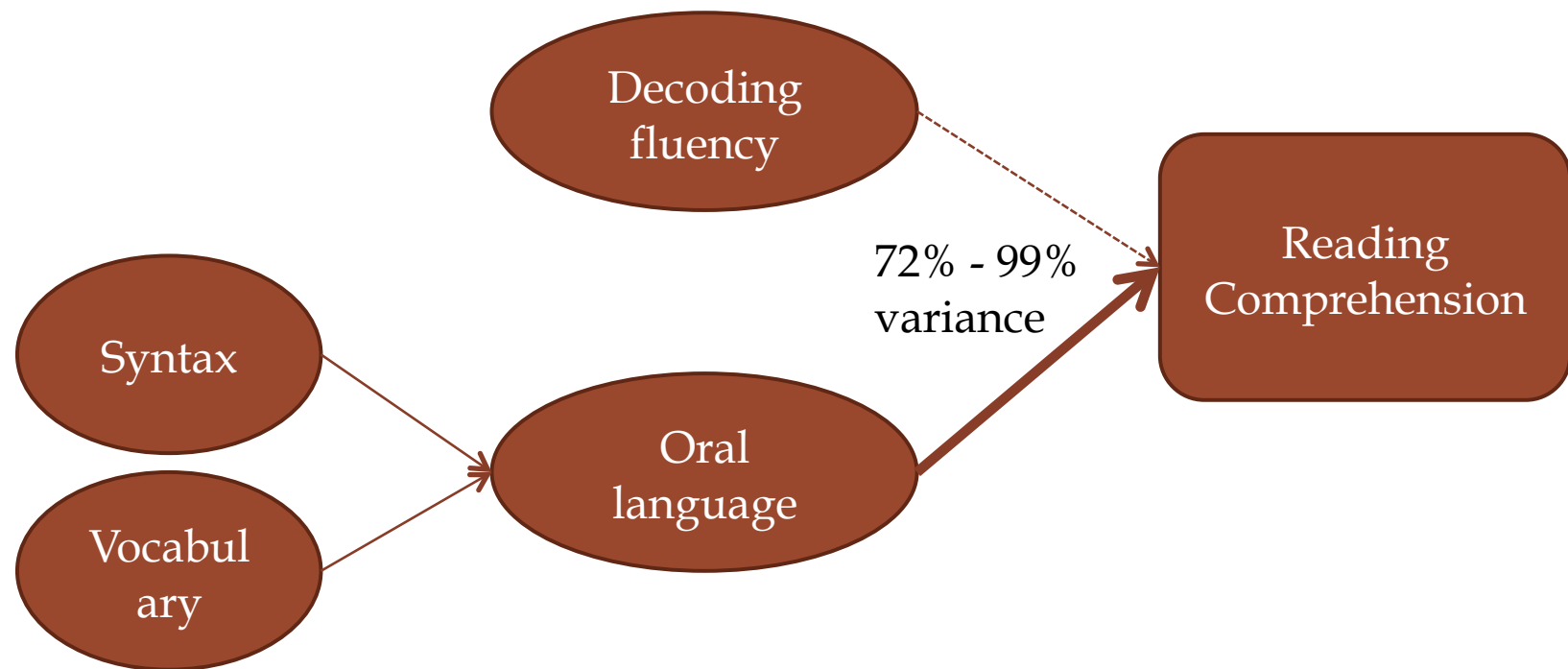


Foorman, Petscher, & Stanley, in review



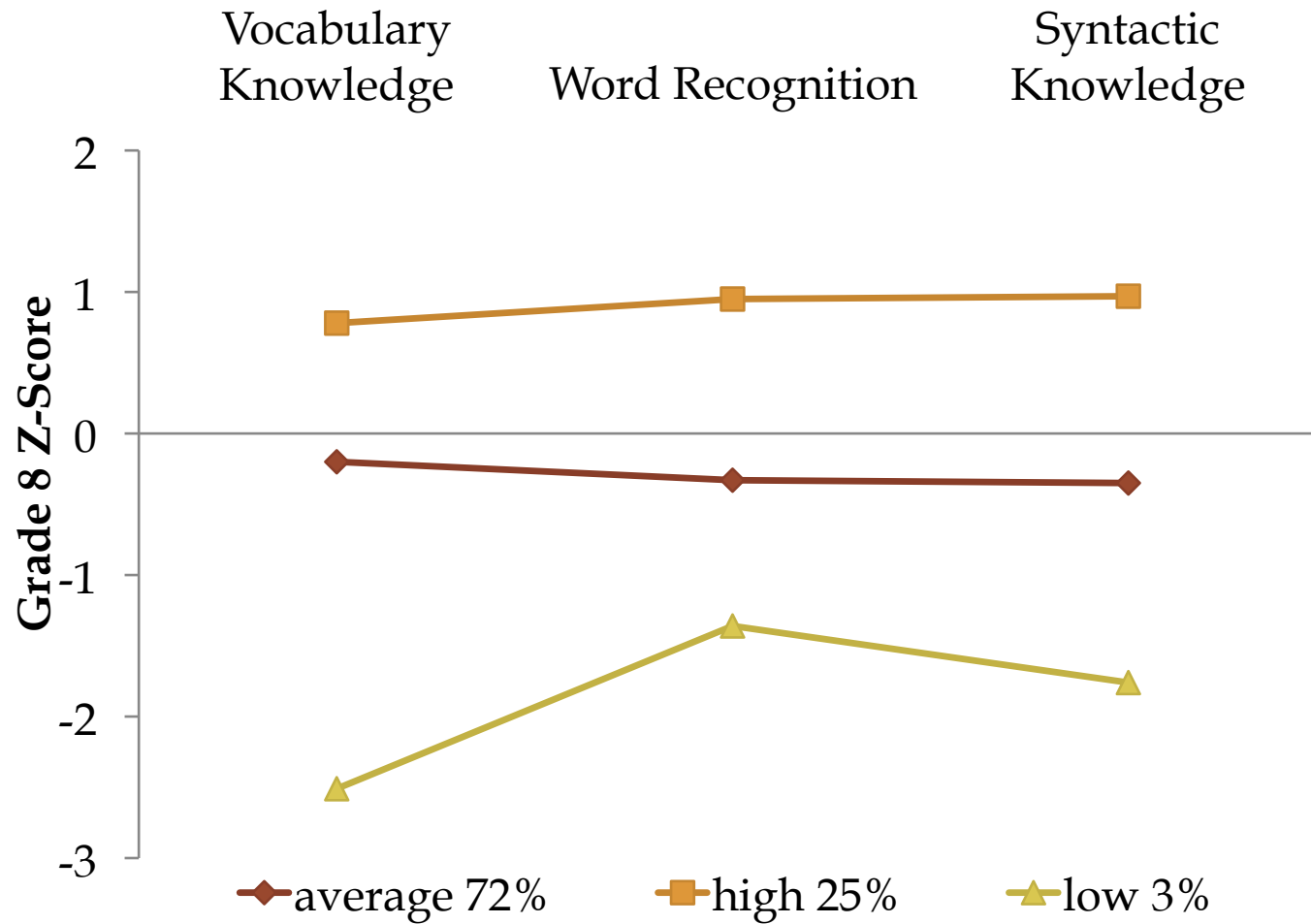
Foorman, Petscher, & Stanley, in review

Structure of reading 4 - 10



Foorman, et al., 2015, *Journal of Educational Psychology*

Grades 4 through 10 follow a similar pattern



Foorman, Petscher, & Stanley, in review

What is oral language?



Academic
language

Tier 2
vocabulary

CCSS
language
strand

Syntax

Listening
comprehension

Defining new(ish) concepts

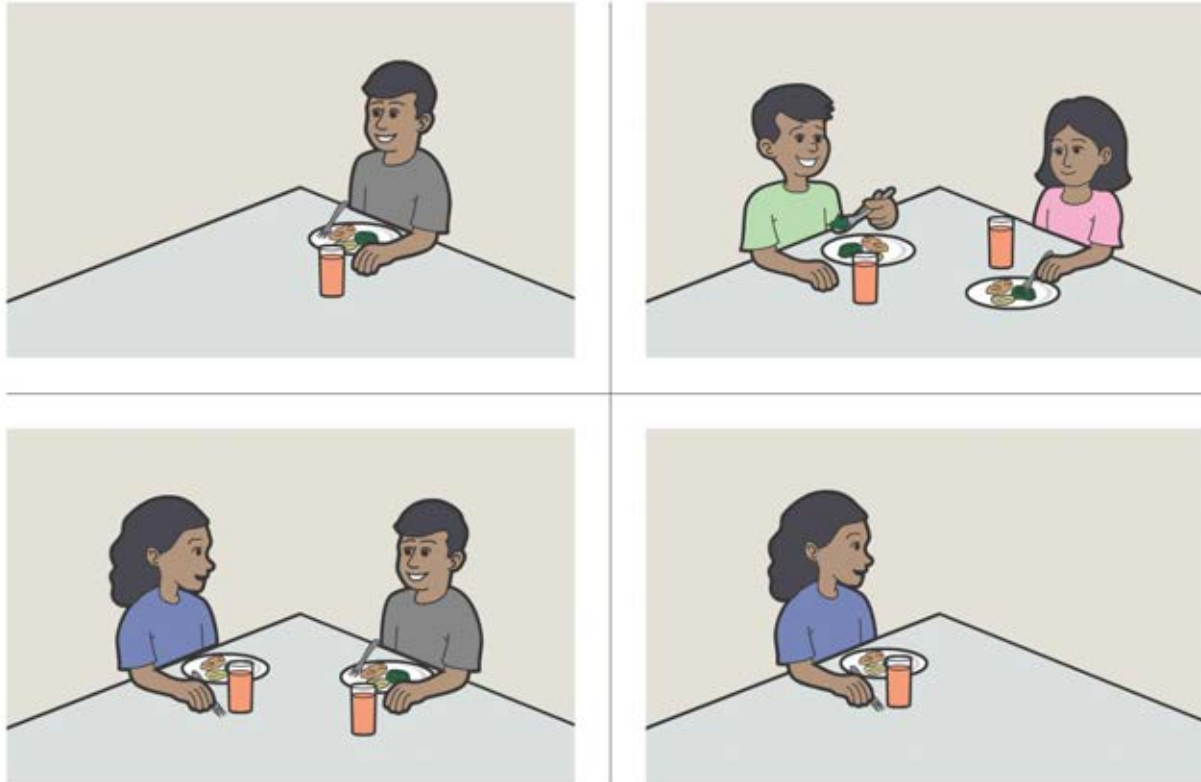
- *Syntax*, or *grammar*, is the set of rules governing the arrangement of words to form meaningful sentences. The rules of syntax include adding the right inflectional endings or suffixes to words (*morphology*), as well as knowing the proper order of words in a statement, question, or command. By the time children are school-age, the vast majority of these rules have been acquired in a native language and have become essential to effective oral communication
- *inferential language*, or *decontextualized language*. This is language that moves beyond the here and now and allows students to predict, hypothesize, reason, problem-solve, or compare and contrast (e.g., discussing what life would have been like if we lived on the Mayflower). The second function is *narrative language*, which students use to organize information in a logical sequence and connect pieces of information through grammatical structures to produce a coherent account (e.g., telling a story about the first Thanksgiving)
- *academic vocabulary*, which refers to words that are rarely used in daily conversations but occur often in written text (e.g., *contrast*, *define*, *estimate*) and in other school contexts

The Academic Language of Disciplines

	English	Mathematics	History	Science
text type	literary	informational or technical, symbolic, diagrams	expository, argumentative, persuasive	Informational or technical, diagrams
text structure	plot, setting, characterization, point of view, verse, rhyme	sequence, cause and effect, problem and solution, supporting ideas and evidence, graphical features	sequence, cause and effect, problem and solution, author's perspective supporting ideas and evidence, contrasting viewpoints, graphical features	sequence, cause and effect, problem and solution, supporting ideas and evidence, graphical features
author's craft	diction, dialogue, symbolism, imagery, irony, figurative language	rhetorical structure, examples, logical arguments	figurative language, rhetorical structure, examples, emotional appeal	rhetorical structure, examples, logical arguments

Foorman, 2013

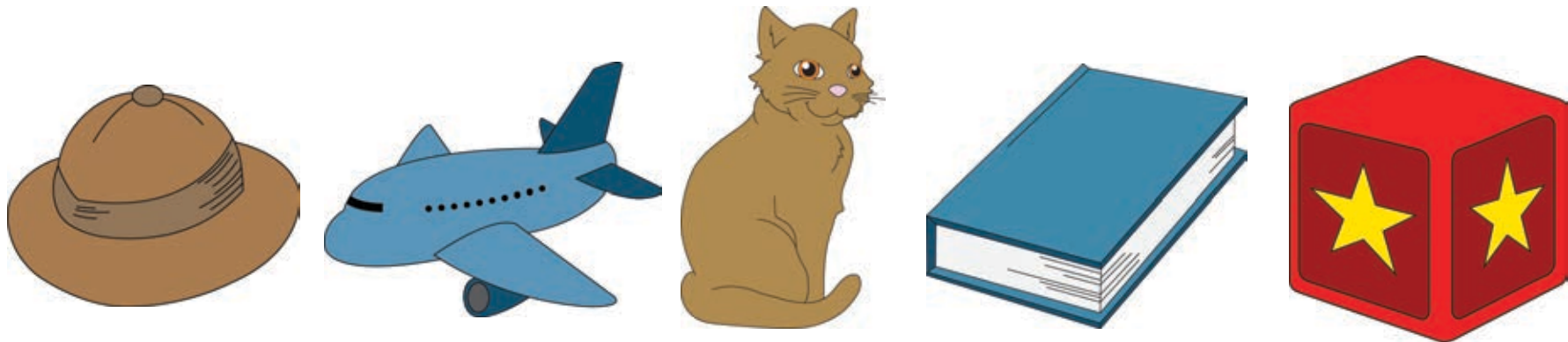
Early oral language



"The girl is eating dinner by herself."

Lexia's RAPID K-2 assessment (Foorman, Petscher, & Schatschneider, 2015)

Early oral language



“Before you put the book at the end of the row, click on the cat.”

Lexia’s RAPID K-2 assessment (Foorman, Petscher, & Schatschneider, 2015)

Syntactic Knowledge

Pizza is one of my favorite foods, we only get to eat it on special occasions.

although
as
when

Lexia's RAPID grades 3-10 assessment
(Foorman, Petscher, & Schatschneider, 2015)

I am going to say a sentence. I want you to listen carefully and repeat exactly what I say.

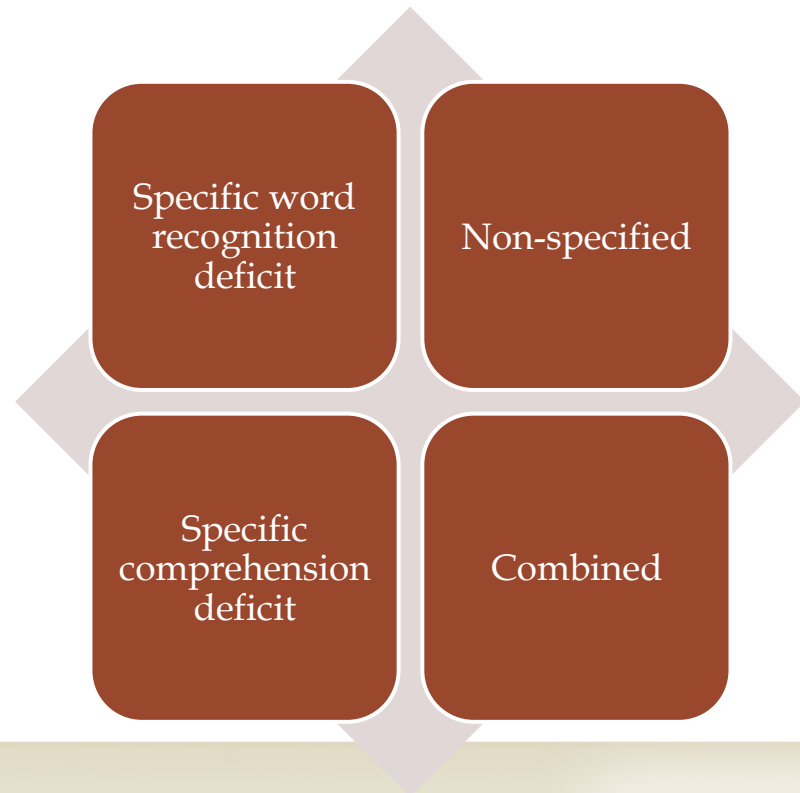
CELF recalling sentences subtest

The Scarecrow and the Tin Woodman stood up in a corner and kept quiet all night, although of course they could not sleep.

Poor readers



- Easy vs. difficult to remediate
- Early vs. late-emerging
- Deficits in 1 area affects growth in the other area



Catts & Kamhi, 2005

Questions



http://padlet.com/adrea_truckenmi/OSPA

References

- Biancarosa, C., & Snow, C. E. (2006). Reading next – A vision for action and research in middle and high school literacy: A report to Carnegie Corporation of New York (2nd ed.). Washington, DC: Alliance for Excellent Education
- Foorman, B. R., Herrera, S., Petscher, Y., Mitchell, A., & Truckenmiller, A. J. (2015). The structure of oral language and its relation to reading at various levels of comprehension in kindergarten through grade 2. *Reading and Writing*, 28(5), 655-681. doi: 10.1007/s11145-015-9544-5
- Foorman, B. R., Koon, S., Petscher, Y., Mitchell, A. M., & Truckenmiller, A. J. (2015). Examining general and specific factors in the dimensionality of oral language and reading in grades 4-10: A bi-factor approach. *Journal of Educational Psychology*, 107(3), 884-899. doi: 10.1037/edu0000026
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- Petscher, Y. (2015). Quantile dominance for the study of individual differences in reading. Poster presented at the Society for the Scientific Study of Reading. Hawaii.
- Wagner, R. K., Herrera, S. K., Spencer, M., & Quinn, J. M. (2014). Reconsidering the Simple View of Reading in an intriguing case of equivalent models: Commentary on Tunmer and Chapman (2012). *Journal of Learning Disabilities*. Advance online publication. <http://dx.doi.org/10.1177/0022219414544544>

Choosing evidence-based practices in reading



Tier 1 –practice guides & recommendations for differentiated instruction

Tiers 2 & 3 – WWC intervention reports, single study reviews, quick reviews



“Enough is already known about adolescent literacy – both the nature of the problems of struggling readers and the types of interventions and approaches to address these needs – in order to act immediately on a broad scale.”

“ However, we do yet possess an overall strategy for directing and coordinating remedial tools for the maximum benefit to students at risk of academic failure, nor do we know enough about how current programs and approaches can be most effectively combined.”

- Biancarosa & Snow, 2006, p. 3 & 10

Using the WWC

- <http://ies.ed.gov/ncee/wwc/default.aspx>
- Choose an intervention report

The screenshot shows the homepage of the What Works Clearinghouse (WWC) website. The header features the IES logo and the text 'WHAT WORKS CLEARINGHOUSE'. Below the header is a navigation bar with links: Home, About the WWC, Topics in Education, Publications & Products, Special Features, Resources, and Stay Connected. A search bar is located in the top right corner. The main content area is titled 'Publications & Products' and includes a statement: 'Our goal is to provide educators with the information they need to make evidence-based decisions. Access this information through:'. Below this are five categories with icons: practice guides, intervention reports, single study reviews, quick reviews, and reference resources. A sidebar on the right contains a 'Find what works based on the evidence' button, a 'Handy Definitions' section with a list of links (intervention report, practice guide, single study review, quick review, review protocol, topic), and a 'See the full glossary' button. At the bottom, there is a 'Find WWC Publications & Products' section with a search bar, a dropdown menu for 'English Language Learners', and another dropdown menu for 'Intervention Reports'. A 'Search' button and a 'Reset Search' button are also present. The footer of the page features the FCRR logo and the text 'FLORIDA CENTER for READING RESEARCH'.

ies INSTITUTE OF EDUCATION SCIENCES

WHAT WORKS CLEARINGHOUSE

Home | About the WWC | Topics in Education | Publications & Products | Special Features | Resources | Stay Connected

Home

Publications & Products

Our goal is to provide educators with the information they need to make evidence-based decisions. Access this information through:

- practice guides provide recommendations for educators
- intervention reports summarize findings on an intervention
- single study reviews assess one research study of findings on an intervention
- quick reviews of recent research
- reference resources:
 - the Procedures and Standards Handbook
 - our Review Protocols

Find what works based on the evidence.

Handy Definitions

- intervention report
- practice guide
- single study review
- quick review
- review protocol
- topic

See the full glossary

Find WWC Publications & Products

Type keyword

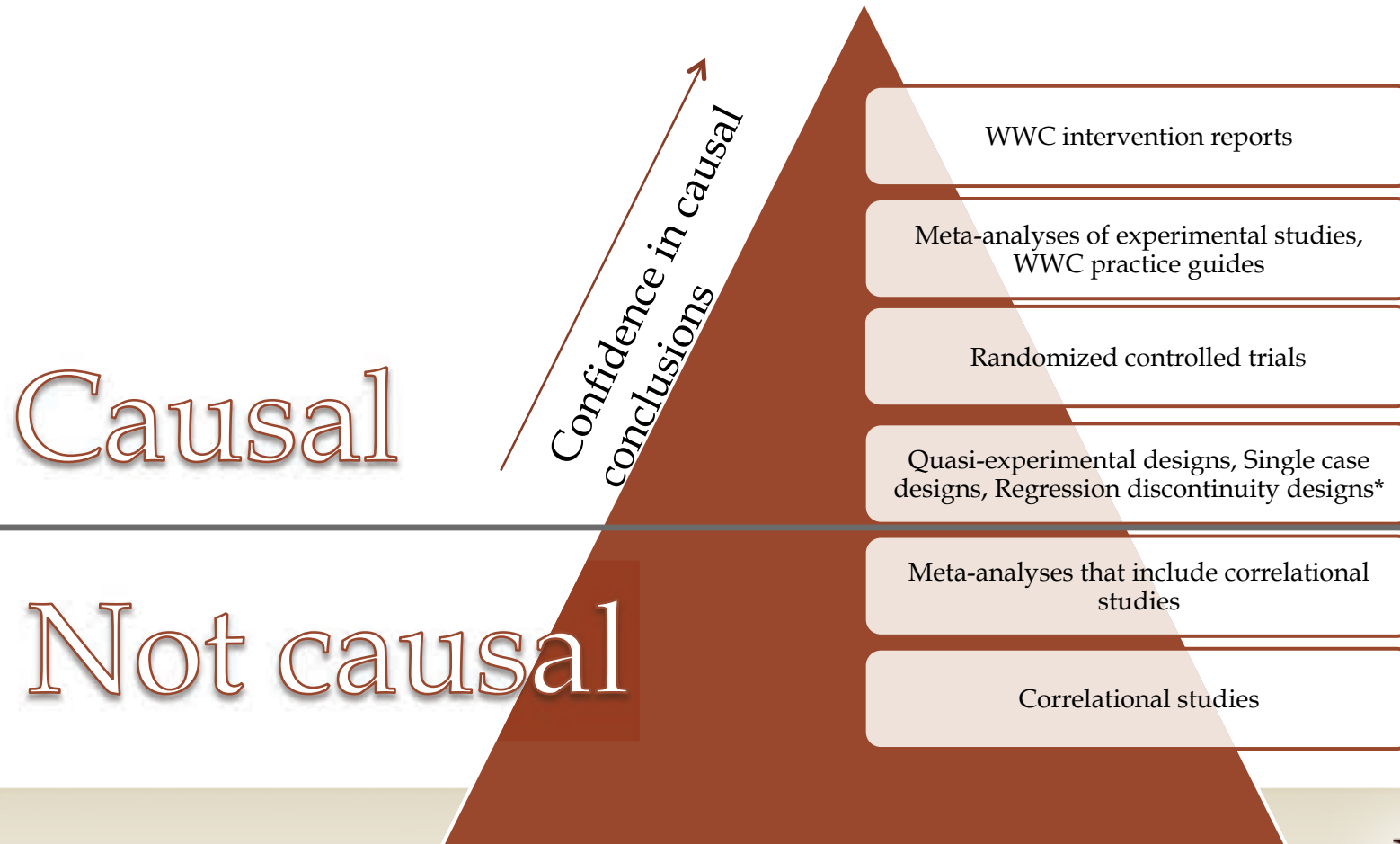
English Language Learners Intervention Reports

Search Reset Search

Top Downloads

Assisting Students Struggling with

Evidence is a continuum



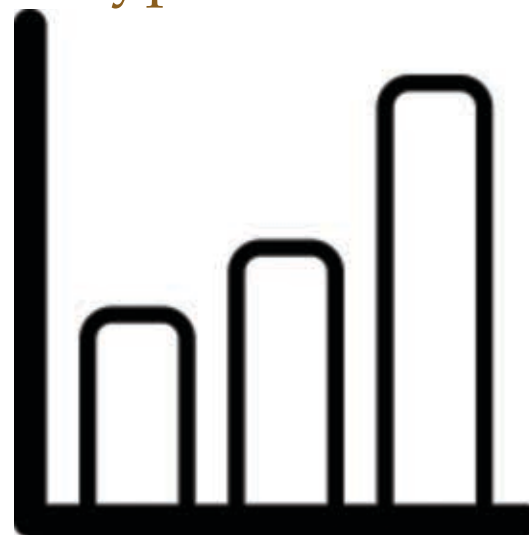
Getting to a definition of evidence-based



Types of studies

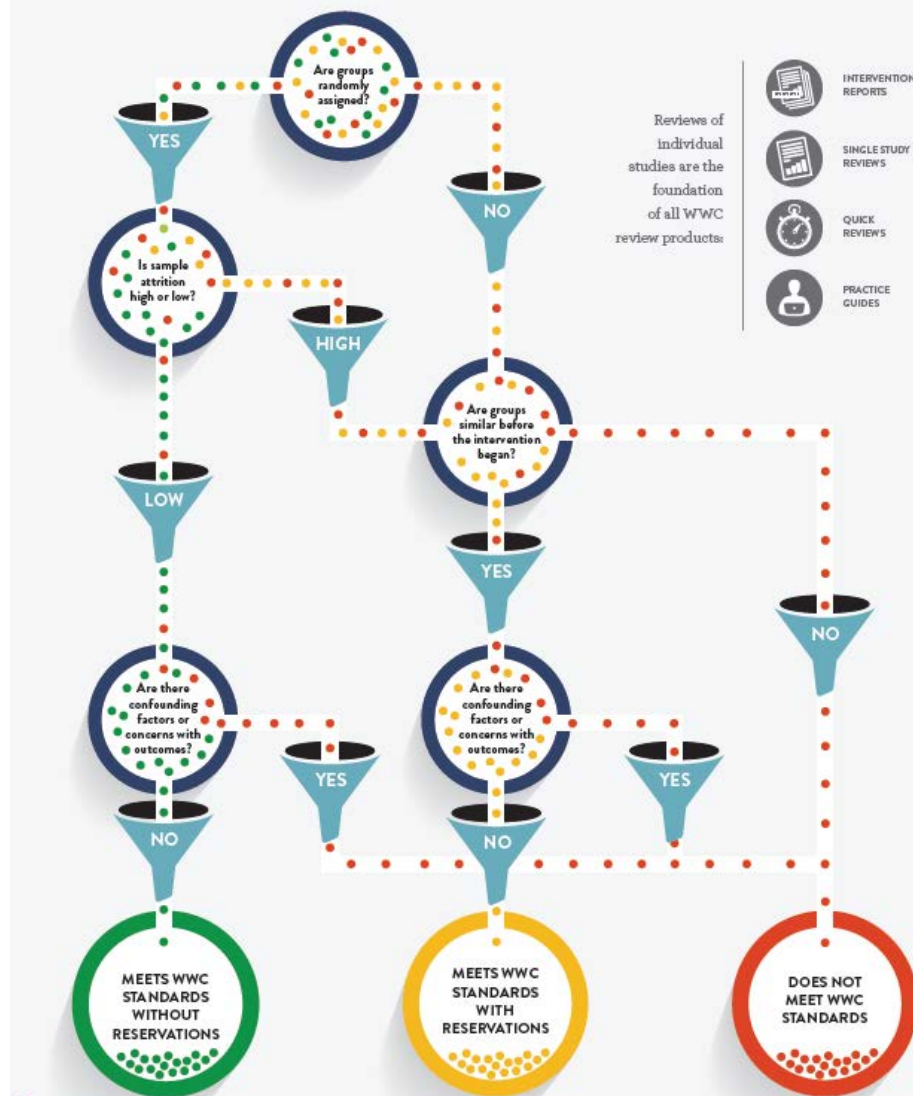


Types of effects



HOW THE WWC RATES A STUDY

RATING GROUP DESIGNS



ies WHAT WORKS CLEARINGHOUSE

To learn more, download the WWC Procedures and Standards Handbook

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<http://ies.ed.gov/ncee/wwc/>

INTERVENTION EFFECTIVENESS RATINGS FOR EACH OUTCOME DOMAIN



POSITIVE

Strong evidence that an intervention had a positive effect on outcomes.

POTENTIALLY POSITIVE

Evidence that an intervention had a positive effect on outcomes with no overriding contrary evidence.

MIXED

Evidence that an intervention's effect on outcomes is inconsistent.

NO DISCERNIBLE

No evidence that an intervention had an effect on outcomes.

POTENTIALLY NEGATIVE

Evidence that an intervention had a negative effect on outcomes with no overriding contrary evidence.

NEGATIVE

Strong evidence that an intervention had a negative effect on outcomes.

<http://ies.ed.gov/ncee/wwc/>

FLORIDA CENTER for READING RESEARCH

One definition of evidence-based

WWC term	Definition
Study rating	
Meets standards without reservations	Studies receiving this rating provide the highest degree of confidence that an observed effect was caused by the intervention. Only well-implemented randomized controlled trials that do not have problems with attrition may receive this highest rating.
Meets standards with reservations	Studies receiving this rating provide a lower degree of confidence that an observed effect was caused by the intervention. Randomized controlled trials that are not as well implemented or have problems with attrition, along with strong quasi-experimental designs, may receive this rating.
Intervention effectiveness rating	
Positive effect (++)	2 or more studies show statistically significant positive effects, at least 1 of which meets WWC standards without reservations (i.e., randomized controlled trial)
Potentially positive effects (+)	At least 1 study shows statistically significant or substantively important positive



Interpreting WWC Improvement Index

Increase in percentile rank

How- to: Look up the effect size in a z-score table to find the area under the curve. Subtract 0.50 from the area under the curve.

$$ES = 0.44$$

$$Area = 0.67$$

$$\text{Improvement index} = (0.67 - 0.50) \times 100\%$$

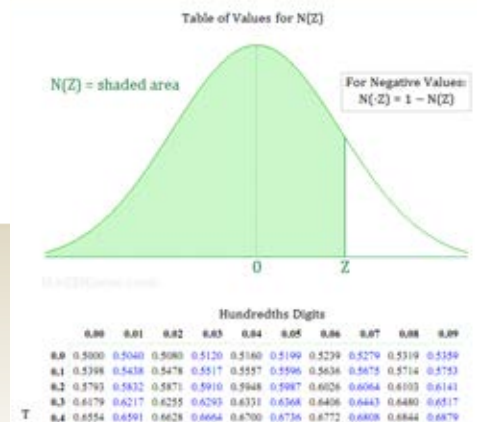
$$\text{Improvement index} = 17\%$$

Interpretation: If the average student in the control condition had received the treatment, that student would have moved from the 50th percentile to the 67th

*assumes normal distribution & homogeneity of variance

(WWC handbook, page F.10)

<http://ies.ed.gov/ncee/wwc/documentsum.aspx?sid=19>



Extent of evidence

- Small
 - Includes only 1 study OR
 - Only 1 school OR
 - Sample size < 350 students (14 classrooms)
- Medium to large
 - > 1 study
 - > 1 school
 - Sample size > 350 students

Limitations

- Power is not considered
- Implementation is not considered
- Many relevant constructs do not have measures with high reliability
- Some educational concepts do not have a defined causal mechanism
 - Standards
 - Universal design for learning
- Some instructional approaches are difficult to measure
 - Examples: design studies, talk moves
- RCTs may be inappropriate
 - Ethical reasons
 - Low-incidence phenomenon

CAUTION!

Rank ordering by
improvement index is
NOT the first & last
stop in choosing an
intervention

<http://ies.ed.gov/ncee/wwc/findwhatworks.aspx>

SORT BY *Improvement index: high to low* ▼


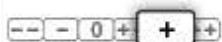
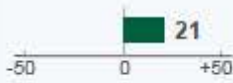
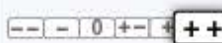
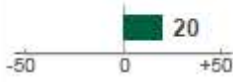
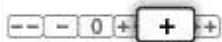
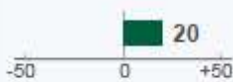
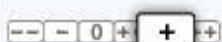

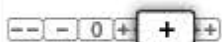
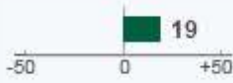
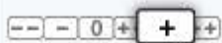
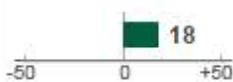
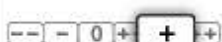
Sort

Print

Jump to findings for:

- Reading comprehension

Reading comprehension

Intervention	Topic	Improvement Index	Effectiveness Rating	Extent Of Evidence
Peer-Assisted Learning Strategies	Children and Youth with Disabilities (Students with Learning Disabilities)	 26		Small
Sound Partners	Literacy (Beginning Reading)	 21		Medium to Large
SpellRead™	Literacy (Beginning Reading)	 20		Small
Lindamood Phoneme Sequencing® (LIPS®)	Literacy (Beginning Reading)	 20		Small
Project CRISS®	Literacy (Adolescent)	 20		Medium to Large
Peer-Assisted Learning Strategies	Literacy (Adolescent)	 19		Small
Early Intervention in Reading (EIR)®	Literacy (Beginning Reading)	 18		Small

Intervention Effectiveness Rating ?

Student Outcome	Improvement Index (percentile gain for average student)	Effectiveness Rating	Extent Of Evidence
Alphabets			Medium to Large
Reading comprehension			Medium to Large
Reading fluency			Medium to Large
Reading achievement			Small

Find What Works for these outcomes.

Scope of Research Meeting Standards

Grade: K, 1

Delivery Method: Individual

Program Type: Supplement

Gender: Mixed

Studies Reviewed: Total = 18 (view study citations)

Meets Standards = 4

Meets w/ Reservations = 3

Factors affecting improvement index

- Improvement Index reflects the specific design of the studies; **designs vary widely**
- Type of outcome used in the study
 - Researcher-created (e.g., unit test) vs. norm-referenced (e.g., WJ Test of Achievement)
 - Proximal (vocabulary words taught) vs. distal measure (SAT-10 vocabulary)
- Type of comparison group used in the study
 - 'Business as usual' reading instruction prior to 2000 vs. core curriculum with established scope and sequence

Activity

1. Go to http://ies.ed.gov/ncee/wwc/Publications_Reviews.aspx
 - Search for an intervention used at your school
 - Read the intervention report or single study review
 - Create a summary of the evidence as if a teacher asked you the proven effectiveness of this particular intervention
2. Go to <http://ies.ed.gov/ncee/wwc/findwhatworks.aspx>
 - Based on your school's data, choose an area (e.g., reading comprehension/achievement for adolescents, mathematics achievement) where you need to identify an evidence-based intervention
 - Compare 3 different interventions for best match to your school's needs (student outcome, effectiveness rating, delivery method, various aspects of teaching or training needed, comparison group, population)

Activity debrief

- Share summaries
- When browsing interventions, did you notice any other important considerations that others in this group may find constructive?

General evidence-based instructional practices



For elementary & secondary students

Practice guides

General qualities of instructional practices that have worked across several studies.

Determined by an expert panel's review of studies that meet WWC standards

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What Works Clearinghouse: Year in Review

Evidence for What Works in Education

We review the research on the different programs, products, practices, and policies in education.

Then, by focusing on the results from high-quality research, we try to answer the question "What works in education?"

Our goal is to provide educators with the information they need to make evidence-based decisions.

Publications & Products

11,325 studies reviewed!

Get started with free products from the WWC:

-  **Practice guides** help educators address classroom challenges.
-  **Intervention reports** guide evidence-based decisions.
-  **Single study reviews** examine research quality.
-  **Quick reviews** give the WWC's assessment of recent education research.

The **studies database** contains all WWC-reviewed studies.

Find What Works!



Based on the research evidence, find what works to...

- improve literacy skills in 3rd graders,
- increase math achievement in preschoolers,
- reduce dropout rates,
- help students with special needs,

... or address your school's challenge!

WWC Fact Check: Test Your Knowledge...

The WWC only reviews published, peer reviewed randomized controlled trials.

☐ True ☐ False

What's New?

Subscribe to NewsFlash  and stay updated!

Do First Year Experience Courses Benefit Developmental Education Students?
Feb 9

Lessons learned in elementary

- Increase time allocated to vocabulary instruction (academic language).
- Improve quality of letter-sound correspondence instruction through teacher-led lessons on spelling patterns.
- Systematic (scope & sequence) phonics instruction produces significant benefits
- The most effective intervention is prevention in the form of differentiated classroom instruction utilizing assessment
- Highly-informed instructional leaders with a well-articulated long-term (3 years) initiative

Foorman, Carlson, & Santi, 2004
Foorman & Moats, 2002

The case for fully guided instruction

Research has provided overwhelming evidence that, for everyone but experts, partial guidance during instruction is significantly less effective than full guidance.

(Clark, Kirschner, & Sweller, 2012, *American Educator*)

Adolescent literacy: example



Student team reading & writing

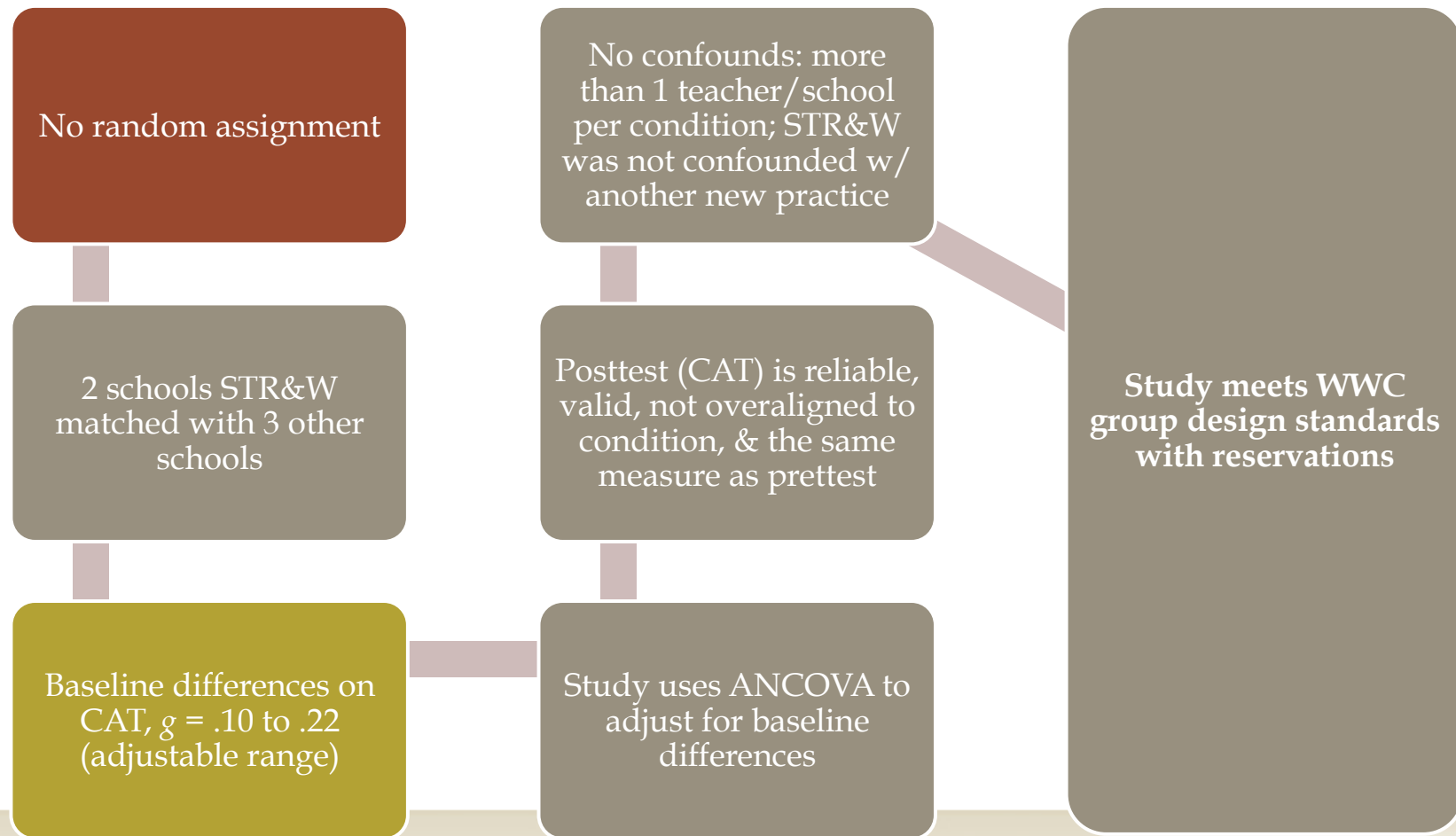
- Partner reading
- Treasure hunts (question guide)
- Word mastery (vocab w/ partner & writing)
- Story retelling
- Story-related writing
- Extension activities (cross-curricular)
- Explicit instruction of comprehension strategies

Business as usual

- Separate reading & English classes
- Basal reading series
- Literature anthology

Stevens, R.J. (2003). Student team reading and writing. A cooperative learning approach to middle school literacy instruction. *Educational Research and Evaluation*, 9(2), 137-160.

Study rating: example



Teaching academic language



AKA oral language, listening comprehension, considerations for
teaching English Learners

Recommendations

Recommendations	Levels of Evidence		
	Strong Evidence	Moderate Evidence	Minimal Evidence
1. Teach a set of academic vocabulary words intensively across several days using a variety of instructional activities.	◆		
2. Integrate oral and written English language instruction into content-area teaching.	◆		
3. Provide regular, structured opportunities to develop written language skills.			◆
4. Provide small-group instructional intervention to students struggling in areas of literacy and English language development.		◆	

Baker, et al., 2014, p. 7

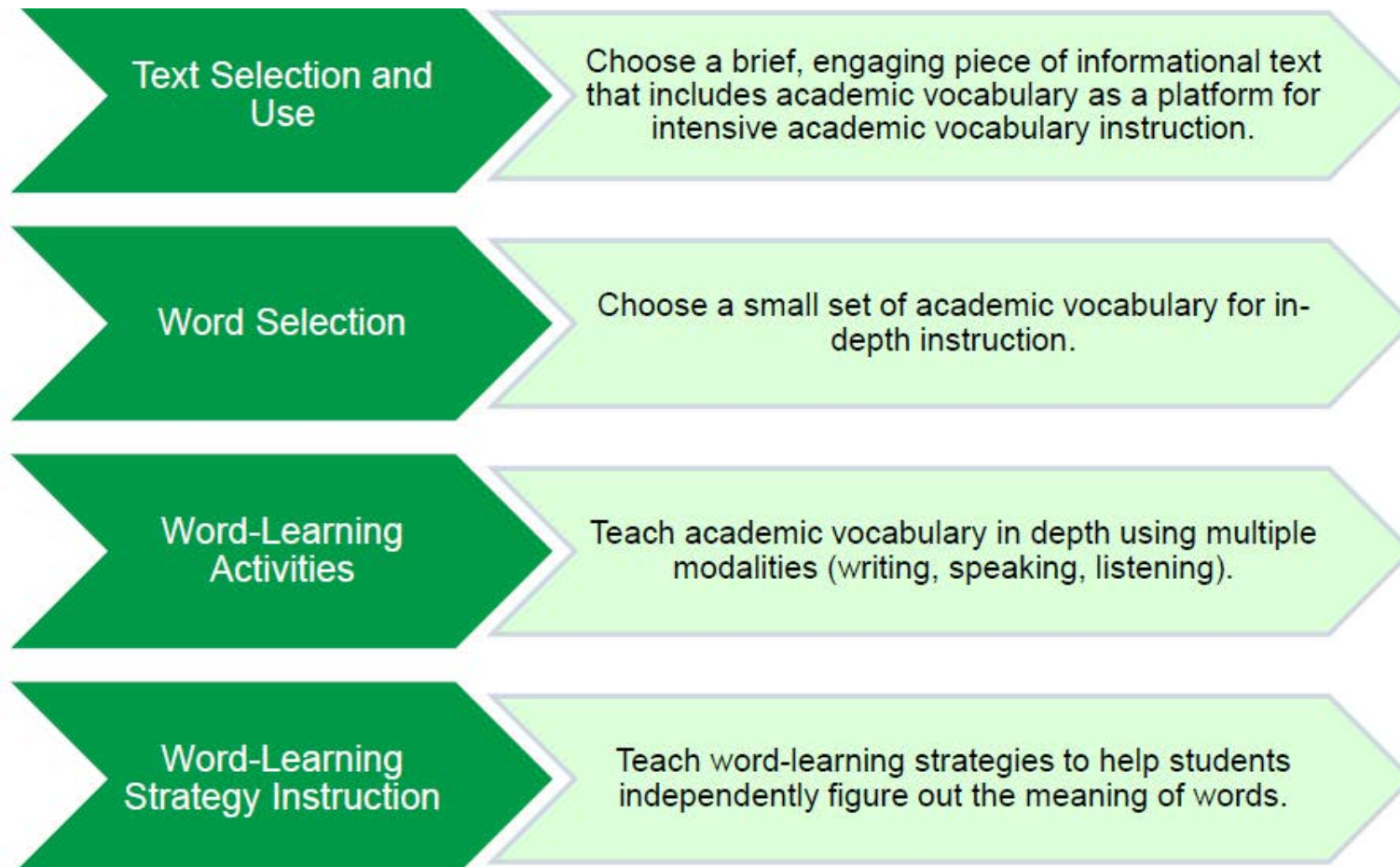
Recommendations also apply to...

- Students in grades 5 through 8
- English Learners
- Economically disadvantaged (high % free/reduced price lunch)
- General education
- Students at-risk for reading achievement

3 additional interventions have studies that meet What Works Clearinghouse standards & support recommendations

Truckenmiller, in prep

1. Teach academic vocabulary words



IES, May 2014

http://ies.ed.gov/ncee/wwc/pdf/practice_guides/wwc_ellwebinarslides_052114.pdf

1. How to choose words

	Frequently used in the text	Central to understand- ing the text	Appears in other content areas	Affixes	Multiple meanings and uses	Cross- language potential
<i>Environment</i>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<i>Exhibit</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
<i>Impact</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Investigation</i>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
<i>Option</i>				<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
<i>Pursuit</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	

IES, May 2014

1. Word-learning activities

Pursuit: trying your best to get something or be somebody. Or, stuff you do.

Generate student-friendly definitions

Zoo Expert Role Play:

- *In your opinion, what options should be pursued in designing an exhibit for seals?*

Role play

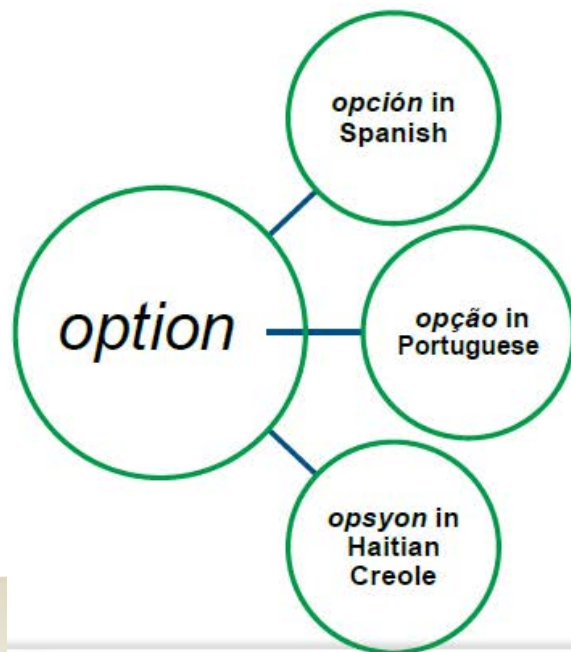
Write About It

Decide what kind of zoo you think would be better to visit and write a paragraph that explains your choice. Make sure to compare the new exhibits with the old exhibits.

Extended writing

1. Word-learning strategies

...A natural environment for a gorilla has grass and trees, while an unnatural environment is a cramped cement area...



Context clues

**Word parts
(morphology)**

Cognates

Sentence from the original text

Coe recommends more investigation into these types of zoo exhibits and their impact on animal health.

Rewritten Sentence

Coe recommends that scientists investigate types of zoo exhibits.

VERBS (Action)	NOUNS (Person, Place, Thing or Idea)
Investigate	<u>Investigation</u>
Exhibit	<u>Exhibition</u>
Opt	<u>Option</u>

2. Integrate into content areas

Instructional Element

“How To’s” for Educators

Make Sense of
Content

Strategically use instructional tools—such as short videos, visuals, and graphic organizers—to anchor instruction and help students make sense of content.

Academic
Vocabulary

Explicitly teach the content-specific academic vocabulary, as well as the general academic vocabulary that supports it, during content-area instruction.

Pairs or Small Group
Discussions

Provide daily opportunities for students to talk about content in pairs or small groups.

Writing

Provide writing opportunities to extend student learning and understanding of the content material.

IES, May 2014

2. Integrate into content areas

Use everyday language first:

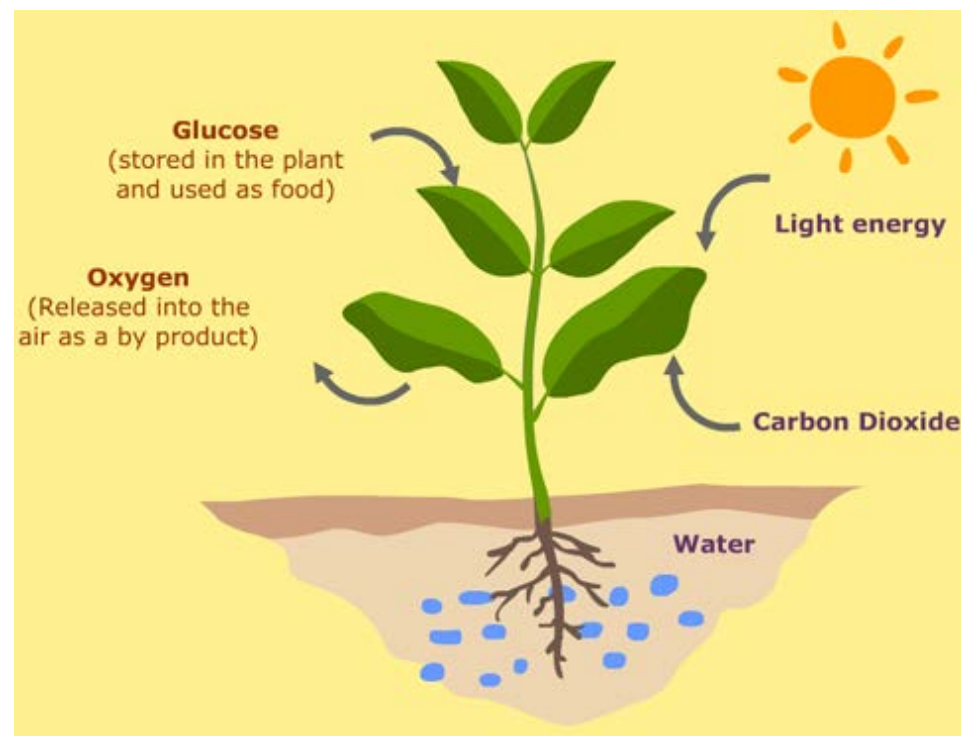
Green plants make a type of sugar as their food by taking in light, water, and gas that humans breathe out.

Then, introduce academic & disciplinary language:

Green plants **produce glucose**, by taking in **photons**, water, and **carbon dioxide**.

Academic language

Disciplinary language



Brown Ryoo, & Rodriguez, 2012; Ryoo, 2009

2. Use videos, with graphic organizers & discussion support

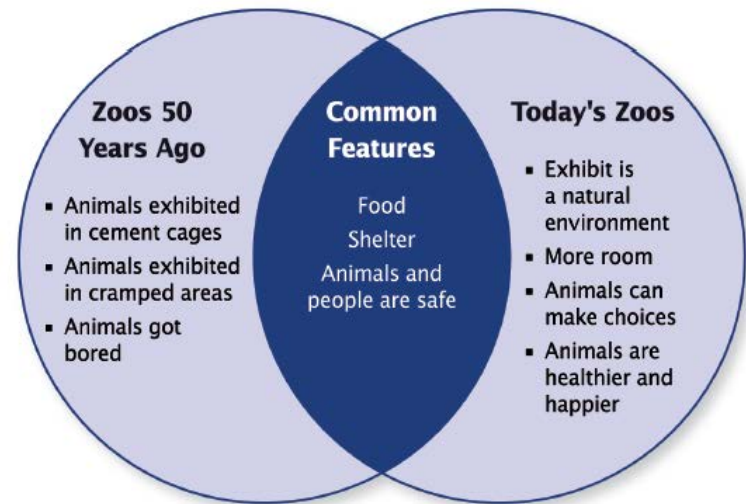


- Pre-teach vocab, discuss vocab & concepts, write & rehearse responses in pairs
 - Boycott, refuse, colored section
 - Why was Rosa Parks arrested?
 - Why did she refuse to give up her seat?
 - Choose an adjective to describe her.
 - Why do you think she was arrested



this time and not previously?

- Compare & contrast



Baker et al., 2014

3. Provide structured writing activities

- Provide content words & transition words to incorporate
- Use graphic organizers
- Provide specific feedback on
 - Content
 - Vocabulary
 - Conventions
- Plan & revise in groups

Compare and Contrast: Writing Framework

(Topic sentence)

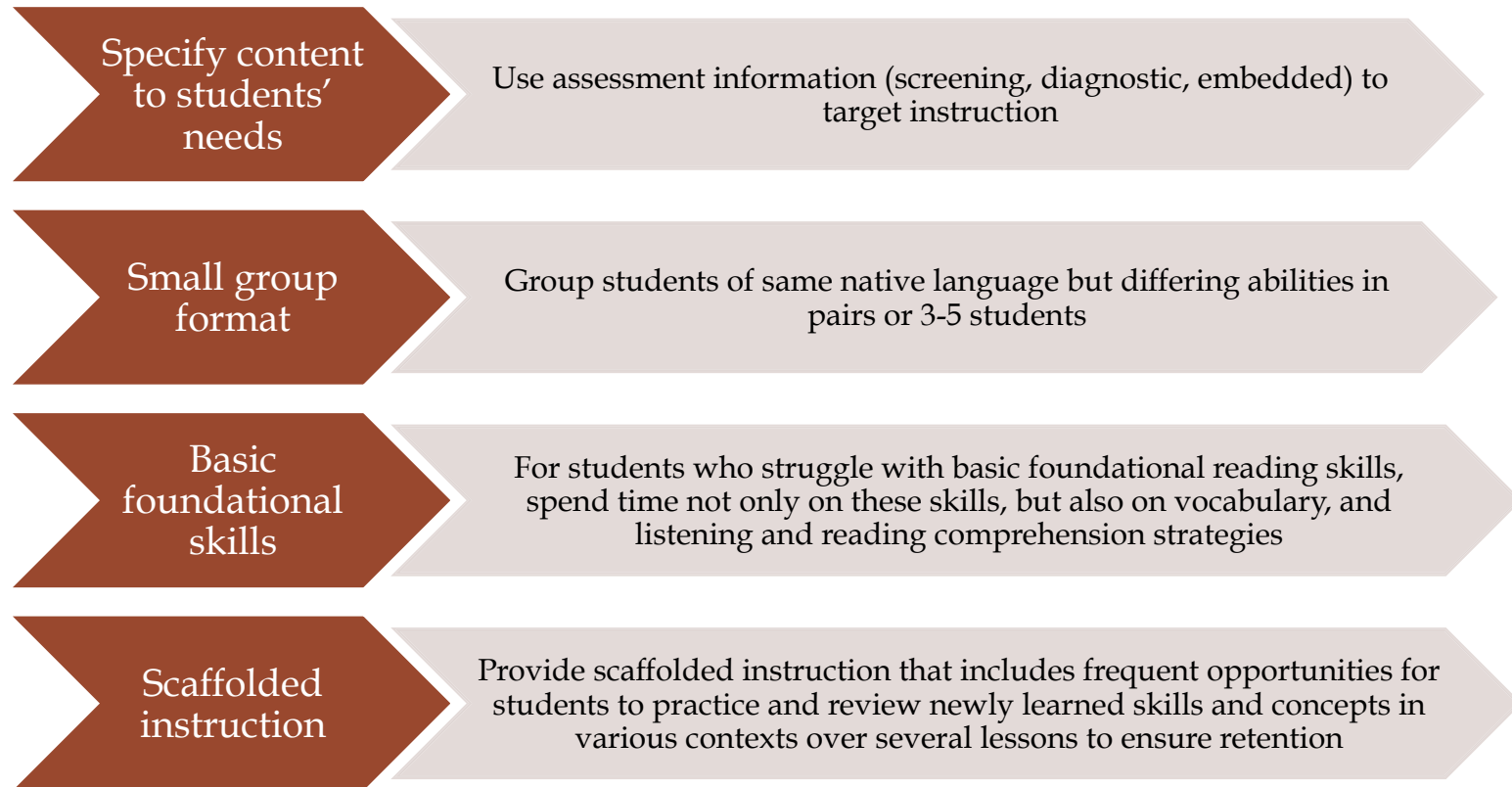
There have been many changes made to zoos; I would rather visit a zoo that has a (an) _____ (new/old) gorilla exhibit for two reasons.

First, _____

Second, _____

(Concluding sentence)

4. Provide small-group instruction



4. Scaffolding instruction

- Inferential Question:

“How would you describe Rosa Parks?”

- Teacher Think-Aloud:

“In this story a bus driver asked Rosa Parks, an African American woman, to give up her seat to a white person. The author gives us clues about the type of person Rosa Parks was. The author writes that Rosa stayed in her seat; she was quiet and did not resist the police when she was arrested and fined 10 dollars. Based on these clues I would say Rosa was brave or courageous because she knew what the bus driver asked her to do was wrong and unfair, so she showed bravery and courage by staying in her seat, knowing she would be punished. Also, Rosa appeared calm, as she did not struggle when the officer arrested her.”

Summary

- Recommendations are all specific ways to increase and diversify opportunities to respond for whole group, small group, and peer activities, as well as provide needed supports.
- Free evidence-based activities at wordgen.serpmedia.org



Further study - PLC

- Baker, S., Lesaux, N., Jayanthi, M., Dimino, J., Proctor, C. P., Morris, J., Gersten, R., Haymond, K., Kieffer, M. J., Linan-Thompson, S., & Newman-Gonchar, R. (2014). *Teaching academic content and literacy to English learners in elementary and middle school* (NCEE 2014-4012). Washington, DC: National Center for Education Evaluation and Regional Assistance (NCEE), Institute of Education Sciences, U.S. Department of Education. Retrieved from the NCEE website: http://ies.ed.gov/ncee/wwc/publications_reviews.aspx
- Center on Instruction, Practical guidelines for the education of English Language Learners
 - [Book 1: Research-based Recommendations for Instruction and Academic Interventions](#)
 - [Book 2: Research-based Recommendations for Serving Adolescent Newcomers](#)
 - [Book 3: Research-based Recommendations for the Use of Accommodations in Large-scale Assessments](#)
- http://wordgen.serpmedia.org/papers_presentations.html

Aligning assessments with decisions



Assessments need to demonstrate reliability and validity for the decisions in which they are being used at YOUR school

Reliability

- Reliability is most critical
- Reliability is an average and not a stable number
- How are form effects dealt with?
 - Equating
 - Multiple probes
- Administration error (Cummings et al., 2014)
- Take-away: reliability is different for each individual student at each time point and the observed score has many sources of error

Assessments & decisions

Decision	Assessment	Example
Who needs more intensive instruction?	Screening score	DIBELS or CBM below 25 th percentile MAP RIT score RAPID reading success probability Fails state test
What type of instruction does the student need?	Percentile ranks (look at student's strengths & weaknesses) from diagnostic tasks OR Curriculum-embedded measures	DIBELS or CBM risk level for each skill MAP diagnostic RAPID percentile ranks
How do we know if the student made progress?	Growth-sensitive score from screening or diagnostic tasks	DIBELS or CBM raw score MAP RIT score RAPID ability scores

Validity

- When making a decision, know the validity data that matches that decision
 - Screening <http://www.rti4success.org/>
 - Progress monitoring
<http://www.intensiveintervention.org/>
- Predictive validity is an average
- There will always be a percentage of students misclassified
- Classification accuracy
 - is dependent on base rates (% students passing the outcome assessment)
 - can be changed by using a different cut-point

Validity

- You can calculate the classification accuracy in your school, with your screening & outcome measure, and your base rate

		Outcome	
		Failed outcome	Passed outcome
Screening	Failed screening	# true positive (a)	# false positive (b)
	Passed screening	# false negative (c)	# true negative (d)

Sensitivity = $a / (a + c)$
Specificity = $d / (b + d)$
False positive rate = $b / (b + d)$
False negative rate = $c / (a + c)$
Positive predictive power = $a / (a + b)$
Negative predictive power = $d / (c + d)$
Overall classification rate = $(a + d) / \text{total}$

National Center on Response to Intervention (2013).
 Schatschneider, Petscher, & William (2008)
 Truckenmiller et al. (under review)

Validity

- Risk can be more precisely conceptualized as a continuum: the likelihood that a student will pass

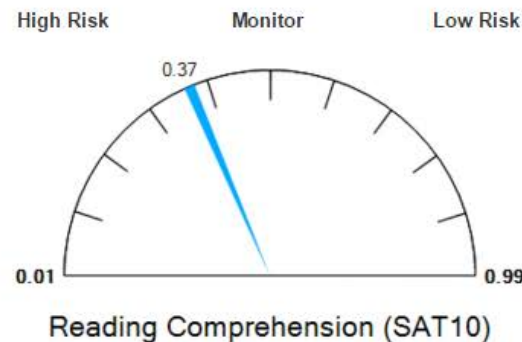
Earlier Assessment for Reading Success

What are the student's screening scores?

☐ Grade K Fall LNF
☒ Grade 1 Fall NWF
☐ Grade 2 Fall PSF
☐ Grade 3

Winter NWF
 Winter ORF
 Winter PSF
 Spring NWF
 Spring ORF
 Spring PSF

What is the student's level of risk?



Outcome	Outcome criterion	Probability of success
SAT-10	40th percentile	0.37
Interpretation	Based on the entered scores, this student has a 37% chance of reaching the 40th percentile on the SAT-10 at the end of Grade 3. This student is at high risk. Additional diagnostic assessment is recommended to target intensive instruction to the student. Monitoring of both the target skills and fluency is recommended.	

Best instructional practices



Skill by treatment

- Direct intervention: targets academic skill that is observed in the natural environment
- Extensive research base

NOT aptitude by treatment

- Indirect intervention: targets cognitive processes (sequencing, style, working memory)
- No established empirical effectiveness for academic skill problems

References

- Cummings, K. D., Biancarosa, G., Schaper, A., & Reed, D. K. (2014). Examiner error in curriculum-based measurement of oral reading. *Journal of school psychology, 52*(4), 361-375.
- Denton, C. A., Fletcher, J. M., Taylor, W. P., Barth, A. E., & Vaughn, S. (2014). An experimental evaluation of guided reading and explicit interventions for primary-grade students at-risk for reading difficulties. *Journal of Research on Educational Effectiveness, 7*(3), 268-293. doi: 10.1080/19345747.2014.906010
- Fuchs, D., Compton, D. L., Fuchs, L. S., Bryant, J., & Davis, G. N. (2008). Making “secondary intervention” work in a three-tier responsiveness-to-intervention model: Findings from the first-grade longitudinal reading study of the National Research Center on Learning Disabilities. *Reading and Writing, 21*(4), 413-436. doi:10.1007/s11145-007-9083-9
- National Center on Response to Intervention (January 2013). Screening Briefs Series – Brief #1: Classification Accuracy. Washington, DC: U.S. Department of Education, Office of Special Education Programs, National Center on Response to Intervention.
- Schatschneider, C., Petscher, Y., & William, K. M. (2008). How to evaluate a screening process: The vocabulary of screening and what educators need to know. In L. Justice & C. Vukelic (Eds.), *Achieving excellence in preschool literacy instruction*, (pp.304–316). New York: Guilford.
- Truckenmiller, A.J., Petscher, Y., Gaughan, L., & Dwyer, T., (in review). *Predicting mathematics outcomes with a reading screener in grades 3 – 8*. Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Southeast.

Differentiating instruction



Evidence-based recommendation from IES practice guide: Provide time for differentiated reading instruction for all students based on assessments of students' current reading level (Gersten, Compton, Connor, Dimino, Santoro, Linan-Thompson, & Tilly, 2009)

Differentiating instruction

- After a whole group lesson:
 - Peer groups,
 - Centers,
 - Teacher-led small groups that may also be intensive
- Core curriculum
 - Differentiated instruction component
 - Supplementary materials
 - Tier II

Using student center activities grades K-5



http://www.fcrr.org/for-educators/sca_cc.asp

Reading Centers

Special places organized in the classroom for students to work in small groups or pairs, either cooperatively or individually.


Download activity books by skill

http://www.fcrr.org/for-educators/sca_cc.asp

OR

Access activities by standard


<https://www.pinterest.com/thefcrr/>




Comprehension


C.015

Expository Text Structure
Expository Fact Strip

 **Objective**
The student will identify details in text.


 **Materials**


- ▶ Expository text
Choose text within students' instructional-independent reading level range or teacher read-aloud.
- ▶ 12" x 18" construction paper
*Cut paper in half lengthwise to make 6" x 18" strips.
Fold into desired number of sections.*
- ▶ Crayons or markers
- ▶ Pencil

 **Activity**

Students locate information in expository text and record on a fact strip.

1. Place text and crayons at the center. Provide the student with one construction paper strip.
2. The student reads the text or reviews the teacher read-aloud.
3. Writes or illustrates the topic in the first square.
4. Identifies the important facts in the text and writes or illustrates them in each section.
5. Continues until all sections are complete.
6. Teacher evaluation



 **Extensions and Adaptations**

- ▶ Use a graphic organizer to record topic and facts from this story or a different one (Activity Master C.015.SS).

Why use student center activities?

- Research-supported components
 - Explicit instruction
 - ↑ opportunities to practice & generalize skills
 - ↑ engaged time
 - Specific feedback
 - Active participation
 - Small group environment
 - Meets diverse needs

Watch – example set-up



- Introduction
- Frequently Asked Questions
- Implementing Activities, I-III (Preparation)
- Implementing Activities, IV-VIII
- Interpretation of Activity Plan, Crosswalk, Glossary
- Acknowledgements

Materials

Activities	https:// www.pinterest.com/ thefcrr/	
Teacher Resource Guide Grades K - 1	http://www.fcrr.org/ curriculum/pdf/ GK-1/ TRG_Final_Part1.pdf	
Grades 2-3		
Grades 4-5	http://www.fcrr.org/ curriculum/PDF/ G4-5/45TRGPartOne.p df	
Glossary	https:// www.pinterest.com/ thefcrr/glossary/	
Printable glossary K - 1 2 - 3	http://www.fcrr.org/ curriculum/pdf/ GK-1/ TRG_Final_Part3.pdf	

Steps

- Form flexible groups based on data
 - Can use DIBELS or curriculum-embedded
 - Re-shuffle groups based on skill mastery
 - Consult with reading coach if needed
- Identify appropriate center activities
- Design a center management system
- Teach the activities with explicit instruction
- Organize the classroom
- Manage transitions
- Establish accountability

Watch – example groupings



- Introduction
- Frequently Asked Questions
- Implementing Activities, I-III (Preparation)
- Implementing Activities, IV-VIII
- Interpretation of Activity Plan, Crosswalk, Glossary
- Acknowledgements

Aligning center activities to CCSS

Tool	Web link
Search for activities by strand	http://www.fcrr.org/for-educators/sca_cc.asp
Crosswalk activities by standard	http://centeroninstruction.org/student-center-activities-aligned-to-the-common-core-state-standards
Progression of skills needed to meet the CCSS Foundational Skills standards	http://centeroninstruction.org/files/Building%20the%20Foundation.pdf

Key considerations

- Plan for classroom management
- Match groups of students with skills, GRADE LEVEL CAN BE IGNORED
- Plan for systemic support for use of center activities or other small group activities
- Use the teacher resource guides
- Use the activities as extra practice and NOT independent learning

Classroom management

- Teach routines explicitly: taking turns, when a problem is encountered, cleaning up, quick transitions
- Explicitly incorporate school-wide or classroom expectations, acknowledgment system, & consistent consequences
- Monitor participation for behavior, errors, mastery
- Consultant/coach ask about behavior issues during follow-up

Watch - routine



- Introduction
- Frequently Asked Questions
- Implementing Activities, I-III (Preparation)
- Implementing Activities, IV-VIII
- Interpretation of Activity Plan, Crosswalk, Glossary
- Acknowledgements

Early completion activities



- Extension activities on the SCA lesson
 - Puzzles
 - Magnetic letters & boards
 - Research library

Grade labels NOT needed

- The grade level label is based on when schools typically teach the skill and is NOT a label for the student
- Use the extension activities for older students
- Adjust the activity by requiring a written response instead of oral
- Use the activity with core text or words

Other considerations



Ohio schools

-
-
-

Involve others

- Parent volunteers to make packets or monitor
- Use in afterschool or summer program
- Interns, practica students, volunteers, mentors, peer tutors

Activity

- Which grade levels and teachers will implement differentiated instruction and during which content area?
- What materials do these teachers need?
- What orientation and training do these teachers need? When will it occur?
- What supports do the teachers need?
 - Who is responsible for providing follow-up question-answering, consultation for classroom management issues, observations? When?
 - Specifically, what will administration do to make this a priority?
- Add progress update as agenda item to leadership team's regular meeting agenda.

References

- Kosanovich, M. L., Weinstein, C., & Goldman, E. (2009). Using Student Center Activities to differentiate instruction. A guide for teachers. Portsmouth, NH: RMC Research Corporation, Center on Instruction.

Differentiating in secondary



Lessons learned

Selecting texts outside the district-mandated curriculum is not an option at our school. We must follow strict scope restrictions and schedules.

Support teachers to:

- Put existing resources to use toward building academic vocabulary knowledge.
- Locate and select complex texts that are publicly available.

We do not have time to plan for this kind of instruction: there are so many pieces to teaching words deeply!

Professional collaboration is key.

- Arrange for educator teams to have common planning times.
- Support educators to use this time to problem-solve instructional questions and to build collective knowledge and expertise.

IES, May 2014

http://ies.ed.gov/ncee/wwc/pdf/practice_guides/wwc_ellwebinarslides_052114.pdf

Lessons learned

Teachers may be concerned with the limited amount of writing students produce when they are given an extended writing project.

- Ironically, this is often what causes many teachers to focus less on writing.
- Time on task will yield increasing quantities of student writing.

Designing and implementing effective peer collaborative activities can be difficult

- Peer collaboration can take the form of paired or small group discussions for brainstorming, feedback on drafts, or peer editing.
- Flexibility in using peer collaboration is important; not all students benefit from receiving or delivering feedback so here is a point where differentiation can be integrated into a writer's workshop model.

IES, May 2014

http://ies.ed.gov/ncee/wwc/pdf/practice_guides/wwc_ellwebinarslides_052114.pdf

Example from Tampa, grades 6-8

Progress Monitoring Assessments	Date(s)	If	Then	Programs/Materials/Strategies
Grades 6 – 8 Administer FAIR-FS for students scoring below expectations on the state accountability assessment.	Assessment Period 1: August/September 2014 Assessment Period 2: January 2015 Assessment Period 3: April 2015	Student's Probability of Literacy Success (PLS) score is 84% or less (Yellow or Red Success Zone)	<p>WRT is below 30th percentile</p> <ul style="list-style-type: none"> Assess fluency (rate, accuracy and expression) through having the student orally read a passage. If the student reads fluently, then work on comprehension strategies. If the student struggles with reading fluently, then work on strategies addressing fluency (rate and accuracy). If the student has a high error rate, provide instruction in basic phonics (letter/sound patterns, syllable types, etc.) <p>VKT is below 30th percentile</p> <ul style="list-style-type: none"> Provide instruction in base/root words and prefixes/suffixes. Provide other intensive vocabulary instruction. <p>SKT is below 30th percentile</p> <ul style="list-style-type: none"> Provide explicit instruction in sentence construction and determining how clauses and ideas relate to one another throughout a text. 	<p>If a student's scores indicate difficulties with word recognition (WRT, fluency) only.</p> <p>Expert 21; Rubicon Issues21; Literacy Design Collaborative; Classroom Novel Sets; Classroom Libraries; Comprehensive Instructional Sequence</p> <p>If a student's scores indicate difficulties with oral language (VKT, SKT) only.</p> <p>READ180; Rubicon Issues21; Literacy Design Collaborative; Classroom Novel Sets; Classroom Libraries; Comprehensive Instructional Sequence</p> <p>If a student's scores indicate difficulties with both decoding (WRT) and oral language (VKT, SKT).</p> <p>Academy of Reading; MCI; S.P.I.R.E; Literacy Design Collaborative; Classroom Novel Sets; Classroom Libraries; Comprehensive Instructional Sequence</p>

Activity	Who needs instruction?	What materials or resources will we use?	What additional materials or resources do we need?	
Alphabetics Decoding, phonics, phonology, morphology, spelling				Differentiated
				Intervention
Oral language word meanings, academic language; morphology, syntax, grammar, cohesion				Differentiated
				Intervention
Comprehension connected text, text organization & structure, strategies, metacognition				Differentiated
				Intervention

References

- Gersten, R., Compton, D., Connor, C.M., Dimino, J., Santoro, L., Linan-Thompson, S., and Tilly, W.D. (2008). Assisting students struggling with reading: Response to Intervention and multi-tier intervention for reading in the primary grades. A practice guide. (NCEE 2009-4045). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Retrieved from <http://ies.ed.gov/ncee/wwc/publications/practiceguides/>.
- U.S. Department of Education, Institute of Education Sciences, What Works Clearinghouse. (2011b, November). *Adolescent Literacy intervention report: Student Team Reading and Writing*. Retrieved from <http://whatworks.ed.gov>

Questions

http://padlet.com/adrea_truckenmi/OSPA



Coming Soon!

- Consider for your professional learning communities
 - Effectiveness of adolescent literacy programs and practices (grades 6 - 12)
<http://ies.ed.gov/ncee/edlabs/projects/project.asp?projectID=464>
 - Evidence base for response to intervention in reading (grades 1 - 3) <http://rel-se.fcrr.org/>
 - Reading foundational skills (K-3) practice guide
http://ies.ed.gov/ncee/wwc/Publications_Reviews.aspx