

## Evidence-based interventions for preventing reading failure

Adrea Truckenmiller, Ph.D., NCSP  
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.

2



---

---

---

---

---

---

---

## Post questions

[http://padlet.com/adrea\\_truckenmi/OSPA](http://padlet.com/adrea_truckenmi/OSPA)



3



---

---

---

---

---

---

---

## 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

4



---

---

---

---

---

---

---

## Components of Reading



A fresh look at the big 5

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

6

National Reading Panel, 2000



---

---

---

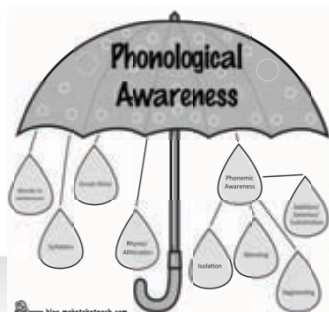
---

---

---

---

## Phonological awareness



7

---

---

---

---

---

---

---

---

## Phonics

b	d	f	g	h	j	c	k	l	m
bug	add	fat	egg	hop	jam	click	lip	man	
n	p	r	s	t	v	w	y	z	
net	pin	run	sit	top	five	why	yes	his	
a	ai	e	ee	i	ie	o	oa	oo	
cat	maid	end	bee	it	pie	hop	boat	look	
u	oo	ou	oi	ow	air	ar	ir	aw	
lug	boot	you	join	now	chair	jar	bird	paw	
ear	ur	zh	ch	sh	th	ng	ø		
ear	cure	azure	chip	sham	then	ring	ticket		

8

ECRR

---

---

---

---

---

---

---

---

## Vocabulary

Position in a sentence (syntax)

Phonological representation

Word frequency – tier I, II, or III

Synonyms & antonyms

Phonologically similar words

vocabulary

noun | vo-cab-u-lary | 'vɒ-kə-bye-lər-ɪ, -vər-

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

Origin of vocabulary

Modern French vocabulary, probably from

and Latin vocabularium, from neuter

verbal, from Latin

Related to vocabulary

Synonyms

argot, cant, dialect, jargon, jive, language,

lingo, patois, patois, slang, shop-talk, slang,

Other Grammar and Linguistics terms

anacoluthon, anacoluthon, diacritic,

idiom, infinitive, metaphor,

Examples with vocabulary

apothecary, bookish, confectionary,

confectionery, confectionery, constabulary,

contemporary, delinquency, disciplinary,

---

---

---

---

---

---

---

---

## 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 poked 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 hand flat 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 walked 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 (9%)
nof	lal	jon	duv	luk	/ 15 (9%)
sij	yuc	mod	lef	hus	/ 15 (9%)
mij	vis	kuj	jep	miz	/ 15 (9%)
wip	pez	fik	vug	az	/ 14 (9%)

10

---

---

---

---

---

---

---

---

---

---

## Comprehension: text structure

Kintsch & Rawson, 2005

11

---

---

---

---

---

---

---

---

---

---

## Quiz

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

12

---

---

---

---

---

---

---

---

---

---

## 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.

13

Gough & Tunmer, 1986  
Wagner et al., 2014

FCRR  
FLORIDA CENTER FOR READING RESEARCH

---

---

---

---

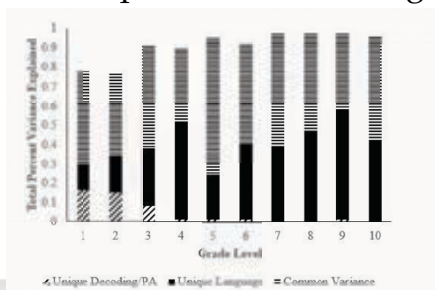
---

---

---

---

## Simple View of Reading



14

Petscher, 2015

FCRR  
FLORIDA CENTER FOR READING RESEARCH

---

---

---

---

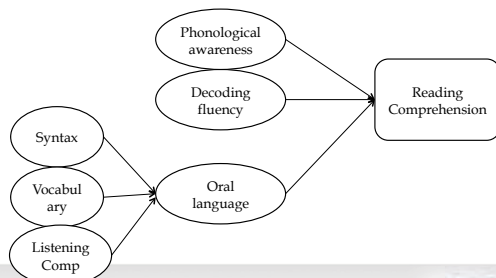
---

---

---

---

## Structure of reading K - 3



15

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

FCRR  
FLORIDA CENTER FOR READING RESEARCH

---

---

---

---

---

---

---

---

# Assessment for Instruction



*"No one test or assessment should be asked to serve all the assessment purposes. We need, at this point, a system made up of articulated components, glued together by their adherence to content standards and serving explicit purposes for assessment."*

~ National Council for Education Standards and Testing, 1992

16




---

---

---

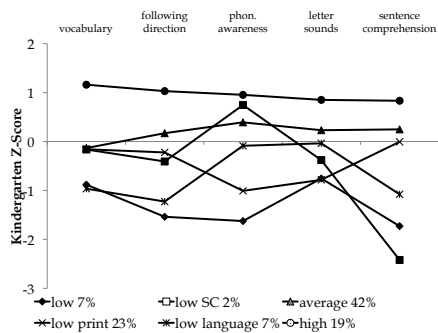
---

---

---

---

---



17

Forman, Petscher, & Stanley, in review




---

---

---

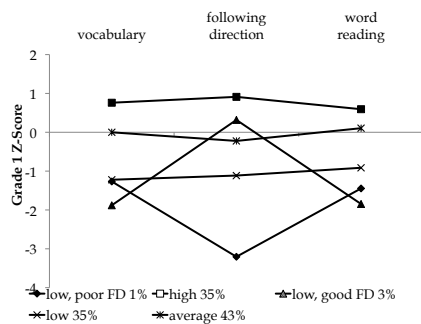
---

---

---

---

---



18

Forman, Petscher, & Stanley, in review




---

---

---

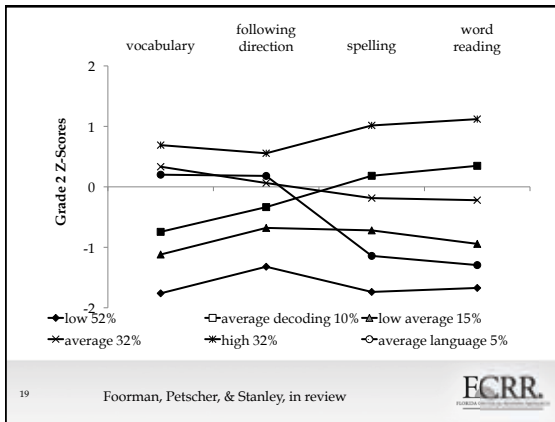
---

---

---

---

---




---

---

---

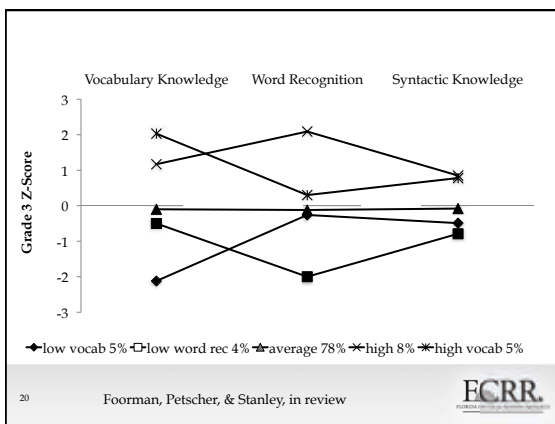
---

---

---

---

---




---

---

---

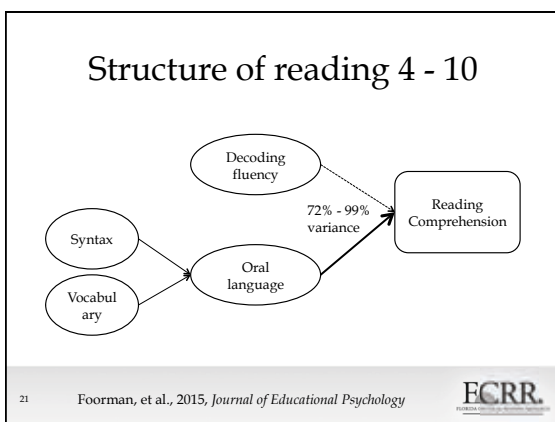
---

---

---

---

---




---

---

---

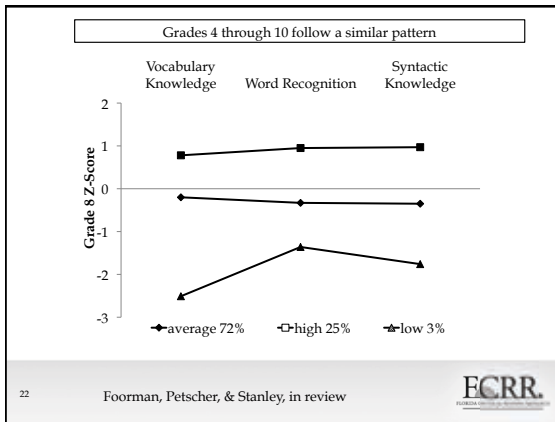
---

---

---

---

---




---

---

---

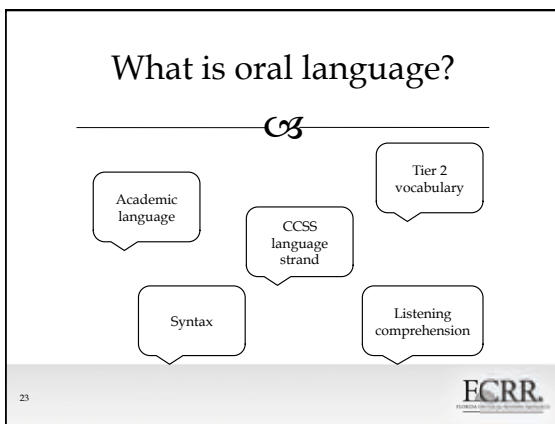
---

---

---

---

---




---

---

---

---

---

---

---

---

### 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

24

FCRR  
FLORIDA CENTER FOR READING RESEARCH

---

---

---

---

---

---

---

---



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

25

Foorman, 2013

ECRR  
EVIDENCE CENTER FOR READING RESEARCH

---

---

---

---

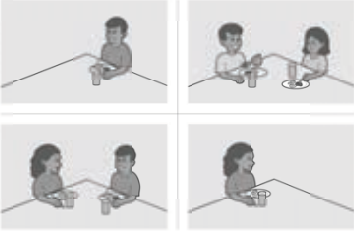
---

---

---

---

### Early oral language



*"The girl is eating dinner by herself."*

26

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

ECRR  
EVIDENCE CENTER FOR READING RESEARCH

---

---

---

---


---

---

---

---

### Early oral language



*"Before you put the book at the end of the row, click on the cat."*

27

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

ECRR  
EVIDENCE CENTER FOR READING RESEARCH

---

---

---

---

---

---

---

---

## Syntactic Knowledge

Pizza is one of my favorite foods,  
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.*

28

FCRR  
FLORIDA CENTER FOR READING RESEARCH

---

---

---

---

---

---

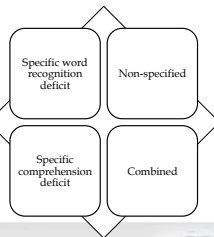
---

---

## Poor readers



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



29

Catts & Kamhi, 2005

FCRR  
FLORIDA CENTER FOR READING RESEARCH

---

---

---

---

---

---

---

---

## Questions

[http://padlet.com/adrea\\_truckenmi/OSPA](http://padlet.com/adrea_truckenmi/OSPA)



30

FCRR  
FLORIDA CENTER FOR READING RESEARCH

---

---

---

---

---

---

---

---

## 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

31




---

---

---

---

---

---

---

---



*"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

32




---

---

---

---

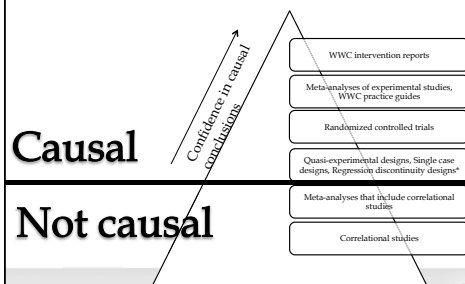
---

---

---

---

## Evidence is a continuum



33




---

---

---

---

---

---

---

---

## Using the WWC

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



34

---

---

---

---

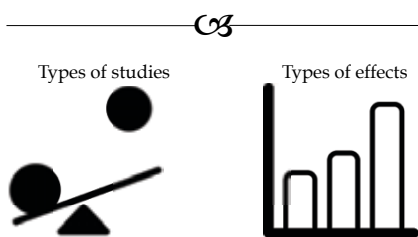
---

---

---

---

## Getting to a definition of evidence-based



35

ECRR

---

---

---

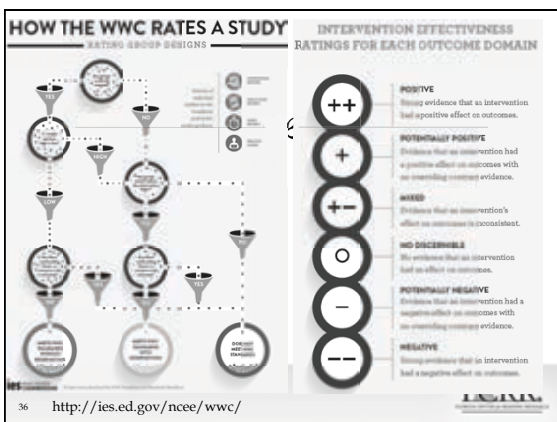
---

---

---

---

---



36

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

ECRR

---

---

---

---

---

---

---

---

## One definition of evidence-based

WWC term	Definition
<b>Study rating</b>	
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.
<b>Intervention effectiveness rating</b>	
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

37

EDUCA Clearinghouse on Research and Statistics

---

---

---

---

---

---

---

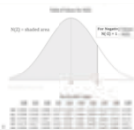
---

## 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  
 Improvement index =  $(0.67 - 0.50) \times 100\%$   
 Improvement index = 17%

**Interpretation:** If the average student in the control condition had received the treatment, that student would have moved from the 50<sup>th</sup> percentile to the 67<sup>th</sup>  
 \*assumes normal distribution & homogeneity of variance



(WWC handbook, page F.10  
<http://ies.ed.gov/ncee/wwc/documentsum.aspx?sid=19>)

38

---

---

---

---

---

---

---

---

## 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

39

ECRR  
 EDUCATION CLEARINGHOUSE ON RESEARCH AND STATISTICS

---

---

---

---

---

---

---

---

## 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

40

ECRR  
EDUCATION COUNCIL OF THE REGION OF CALIFORNIA

**CAUTION!**  
Rank ordering by improvement index is NOT the first & last step in choosing an intervention

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

41

Jump to findings for: 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
Lexia Partners	Students: Beginning Reading	21	++	Medium to Large
OpenRead™	Students: Beginning Reading	20	++	Small
Understanding Readers (Understanding Readers)	Students: Beginning Reading	20	++	Small
Myon VICTORY	Adolescents	20	++	Medium to Large
Peer-Assisted Learning Strategies	Literacy (Adolescents)	11	++	Small
Early Intervention in Reading (EIR)	Literacy: Beginning Reading	11	++	Small

Intervention Effectiveness Rating

Student Population	Improvement Index (averaged over the groups studied)	Effectiveness Rating	Extent of Evidence
Algebra	21	++	Medium to Large
Reading comprehension	21	++	Medium to Large
Reading literacy	19	++	Medium to Large
Reading achievement	9	0	Small

Find What Works for these outcomes.

**Scope of Research Meeting Standards**

Grade: K-1

Delivery Method: Individual

Program Type: Supplement

Guidance: Mixed

Studies Reviewed: Total = 48 (prior study retracted)  
 Items Included = 2  
 Items Excluded = 3

42

## 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

43



---

---

---

---

---

---

---

## Questions

[http://padlet.com/adrea\\_truckenmi/OSPA](http://padlet.com/adrea_truckenmi/OSPA)



44



---

---

---

---

---

---

---

## Activity

1. Go to [http://ies.ed.gov/ncee/wwc/Publications\\_Reviews.aspx](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)

45



---

---

---

---

---

---

---

## Activity debrief

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

46



---

---

---

---

---

---

---

## General evidence-based instructional practices



For elementary & secondary students

47



---

---

---

---

---

---

---

## 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

48



---

---

---

---

---

---

---



## 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

49

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*)

50



---

---

---

---

---

---

---

## 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.

51



---

---

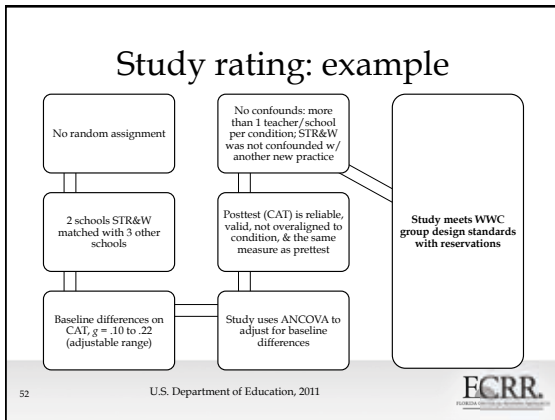
---

---

---

---

---




---

---

---

---

---

---

---

---

## Teaching academic language to improve comprehension

❧

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

53

**ECRR**  
EVIDENCE CENTER FOR RESEARCH REPORTS

---

---

---

---

---

---

---

---

### 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.		♦	

54 Baker, et al., 2014, p. 7

**ECRR**  
EVIDENCE CENTER FOR RESEARCH REPORTS

---

---

---

---

---

---

---

---

## 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

55

Truckenmiller, in prep




---

---

---

---

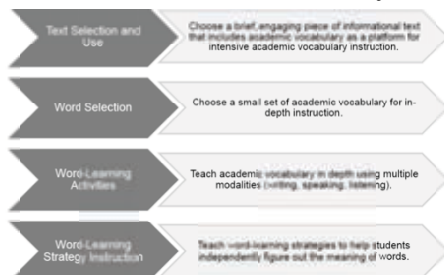
---

---

---

---

## 1. Teach academic vocabulary words



56

IES, May 2014  
[http://ies.ed.gov/ncee/wwc/pdf/practice\\_guides/wwc\\_ellwebinarslides\\_052114.pdf](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 understanding the text	Appears in other content areas	Offers	Multiple meanings and uses	Great language potential
Environment	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Exhibit	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
Inspect	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Investigation			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Option				<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Pursuit	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	

57

IES, May 2014




---

---

---

---

---

---

---

---

## 1. Word-learning activities

**Generate student-friendly definitions**  
Paraphrase your text to get something or be somebody. Or, stuff you do.

**Role play**  
Know Expert Role Play:  
In your opinion, what actions should be pursued in displaying an exhibit for sale?

**Extended writing**  
Write About It:  
Consider 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.

58 IES, May 2014 ECRR

---

---

---

---

---

---

---

---

## 1. Word-learning strategies

**Context clues**  
Word parts (morphology)  
Cognates

**option**  
...A natural environment for a gorilla has grass and trees, while an unnatural environment is a cramped cement area.  
option in Spanish  
option in Portuguese  
option in Italian  
option in Greek

VERBS	NOUNS
Investigate	Investigation
Exhibit	Exhibition
Opt	Option

59 IES, May 2014 ECRR

---

---

---

---

---

---

---

---

## 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.

60 IES, May 2014 ECRR

---

---

---

---

---

---

---

---



## 4. Provide small-group instruction

<b>Specify content to students' needs</b>	Use assessment information (screening, diagnostic, embedded) to target instruction
<b>Small group format</b>	Group students of same native language but differing abilities in pairs or 3-5 students
<b>Basic foundational skills</b>	For students who struggle with basic foundational reading skills, spend time not only on these skills, but also on vocabulary, and listening and reading comprehension strategies
<b>Scaffolded instruction</b>	Provide scaffolded instruction that includes frequent opportunities for students to practice and review newly learned skills and concepts in various contexts over several lessons to ensure retention

64 IES, May 2014 **ECRR**

---

---

---

---

---

---

---

---

## 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."*

65 Baker et al., 2014 **ECRR**

---

---

---

---

---

---

---

---

## Effects on adolescent comprehension

```

graph TD
    A[Instruction implemented 50 minutes, every day for 9 weeks in regularly scheduled 7th grade social studies class] --> B[Activities: concept learning & focus on big ideas, peer-mediated learning, opportunities for student discourse]
    B --> C[Components: explicit vocabulary instruction, use of video & discussion, graphic organizers & writing activities, heterogeneous peer pairing]
    C --> D[Coaching, professional development, in-class support, ongoing problem solving]
    C --> E[Significant impact on curriculum-based assessments of comprehension (Hedges' g = .47 - .71) & vocabulary (g = .36 - .54)]
  
```

Vaughn et al., 2009 **ECRR**

---

---

---

---

---

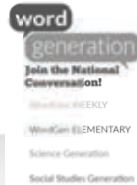
---

---

---

## 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](http://wordgen.serpmedia.org)



67

---

---

---

---

---

---

---

## 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/www/publications\\_reviews.aspx](http://ies.ed.gov/ncee/www/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](http://wordgen.serpmedia.org/papers_presentations.html)

68



---

---

---

---

---

---

---

## Questions

[http://padlet.com/adrea\\_truckenmi/OSPA](http://padlet.com/adrea_truckenmi/OSPA)



69



---

---

---

---

---

---

---

## Aligning assessments with decisions



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

70




---

---

---

---

---

---

---

## Assessments & decisions

Decision	Assessment	Example
Who needs more intensive instruction?	Screening score	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	MAP diagnostic RAPID percentile ranks
How do we know if the student made progress?	Growth-sensitive score from screening or diagnostic tasks	MAP RIT score RAPID ability scores
Which lesson or section within the curriculum does the student(s) need?	Curriculum-embedded formative assessment	Curriculum placement assessment SRA check-out

71




---

---

---

---

---

---

---

## 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

72




---

---

---

---

---

---

---



# 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

73

**ECRR**  
EFFECTIVE COMMUNITY REFORMS

---

---

---

---

---

---

# 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).  
 74 Schatschneider, Petscher, & William (2008)  
 Truckenmiller et al. (under review)

**ECRR**  
 EDUCATIONAL COMMUNITY RESEARCH REPORT

---

---

---

---

---

---

# 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 6 Fall NWF 36

Grade 6 Fall NWF 12

Grade 6 Fall PSF 36

Winter NWF

Winter ORF

Winter PSF

Spring NWF

Spring ORF

Spring PSF

**Reading Comprehension (SAT10)**

What is the student's level of risk?

High Risk Student Low Risk

0.01 0.99

Source	Source reliability	Probability of success
Based on the student's score, this student has a 41% chance of passing the SAT10 assessment and the SAT10 is rated as "Low". The student is at high risk.		
Based on the student's score, this student has a 41% chance of passing the SAT10 assessment and the SAT10 is rated as "Low". The student is at high risk.		

**ECRR**  
EFFECTIVE CURRICULAR READING RESEARCH

---

---

---

---

---

---

## 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

76

Shapiro, 2004, p. 25



---

---

---

---

---

---

---

## Questions

[http://padlet.com/adrea\\_truckenmi/OSPA](http://padlet.com/adrea_truckenmi/OSPA)



77



---

---

---

---

---

---

---

## 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 et al., 2009)

78



---

---

---

---

---

---

---

## 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

79

FCRR  
FLORIDA CENTER FOR READING RESEARCH

---

---

---

---

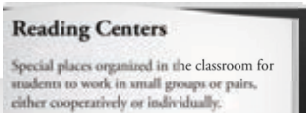
---

---

---

## Using student center activities grades K-5

[http://www.fcrr.org/for-educators/sca\\_cc.asp](http://www.fcrr.org/for-educators/sca_cc.asp)



80

FCRR  
FLORIDA CENTER FOR READING RESEARCH

---

---

---

---

---

---

---

Download activity books by skill

[http://www.fcrr.org/for-educators/sca\\_cc.asp](http://www.fcrr.org/for-educators/sca_cc.asp)

OR

Access individual activities by standard

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

81

A graphic titled "Comprehension Expository Text Structures" with the subtitle "Expository Text Structures Expository Part 1: Text". It includes a list of activities and a diagram of a text structure. The diagram shows a central box labeled "Expository" with four surrounding boxes: "Expository are the largest text structures", "Expository are the largest text structures", "Expository are the largest text structures", and "Expository are the largest text structures". Below the diagram is a section titled "Expository Text Structures" with a list of activities and a diagram of a text structure.

---

---

---

---

---

---

---

## 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

82




---

---

---

---

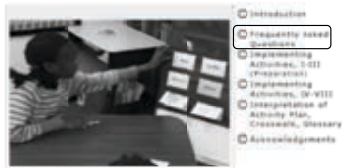
---

---

---

---

## Watch – example set-up



83




---

---

---

---

---

---

---

---

## Materials

Teacher Resource Guide	
Grades K - 1	<a href="http://www.fcrr.org/curriculum/pdf/GK-1/TRG_Final_Part1.pdf">http://www.fcrr.org/curriculum/pdf/GK-1/TRG_Final_Part1.pdf</a>
Grades 2-3	<a href="http://www.fcrr.org/curriculum/PDF/G2-3/2-3TRG_1.pdf">http://www.fcrr.org/curriculum/PDF/G2-3/2-3TRG_1.pdf</a>
Grades 4-5	<a href="http://www.fcrr.org/curriculum/PDF/G4-5/45TRGPartOne.pdf">http://www.fcrr.org/curriculum/PDF/G4-5/45TRGPartOne.pdf</a>
Glossary	<a href="https://www.pinterest.com/thefcrr/glossary/">https://www.pinterest.com/thefcrr/glossary/</a>
Printable glossary K - 1	<a href="http://www.fcrr.org/curriculum/pdf/GK-1/TRG_Final_Part3.pdf">http://www.fcrr.org/curriculum/pdf/GK-1/TRG_Final_Part3.pdf</a>
Printable glossary 2 - 3	<a href="http://www.fcrr.org/curriculum/PDF/G2-3/2-3TRG_2.pdf">http://www.fcrr.org/curriculum/PDF/G2-3/2-3TRG_2.pdf</a>
Printable glossary 4 - 5	<a href="http://www.fcrr.org/curriculum/PDF/G4-5/45TRGPartTwo.pdf">http://www.fcrr.org/curriculum/PDF/G4-5/45TRGPartTwo.pdf</a>

84




---

---

---

---

---

---

---

---

## 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

85

Kosanovich, Weinstein, & Goldman, 2009




---

---

---

---

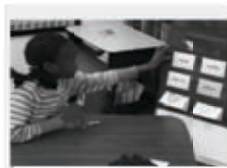
---

---

---

---

## Watch – example groupings



- Introduction
- Frequently Asked Questions
- Implementing Activities: 1-100
- Implementing Activities: 101-200
- Implementation of Activity Plans: Crosswalk, Summary
- Acknowledgments

86




---

---

---

---

---

---

---

---

## Aligning center activities to CCSS

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

87




---

---

---

---

---

---

---

---

## 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

88



---

---

---

---

---

---

---

## 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

89



---

---

---

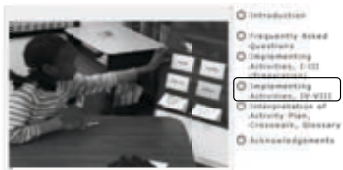
---

---

---

---

## Watch - routine



90



---

---

---

---

---

---

---

## Early completion activities



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

91



---

---

---

---

---

---

---

## 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

92



---

---

---

---

---

---

---

## Considerations for support



### Ohio schools

- 
- 
- 

### Involve others

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

93



---

---

---

---

---

---

---

## 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.

94

ECRR  
EDUCATION CENTER FOR RESEARCH AND REFORM

---

---

---

---

---

---

---

## Differentiating in secondary



- Heterogeneous peer pairing
- Small groups with different levels of text on a similar topic
- Read 180 rotation
  - Whole group teacher directed instruction
  - Individualized computer-assisted instruction
  - Teacher-directed small homogeneous groups
- Reciprocal teaching in groups



95

ECRR  
EDUCATION CENTER FOR RESEARCH AND REFORM

---

---

---

---

---

---

---

## 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 education to use this time to problem-solve instructional questions and to build collective knowledge and expertise.

96

IES, May 2014  
[http://ies.ed.gov/ncee/wwc/pdf/practice\\_guides/wwc\\_ellwebinarslides\\_052114.pdf](http://ies.ed.gov/ncee/wwc/pdf/practice_guides/wwc_ellwebinarslides_052114.pdf)

ECRR  
EDUCATION CENTER FOR RESEARCH AND REFORM

---

---

---

---

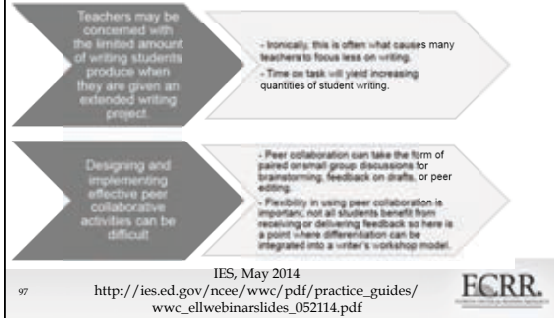
---

---

---



## Lessons learned



## Example from Tampa, grades 6-8

Progress Monitoring Assessments	Date(s)	If	Then	Programs/Materials/Strategies
Grades 6-8 Administer FAIR-4S 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><b>WRT is below 30<sup>th</sup> percentile</b></p> <ul style="list-style-type: none"> <li>Assess fluency (rate, accuracy and expression) through having the student orally read a passage.</li> <li>If the student reads fluently, then work on comprehension strategies.</li> <li>If the student struggles with reading fluently, then work on strategies addressing fluency (rate and accuracy).</li> <li>If the student has a high error rate, provide instruction in basic phonics (letter/sound patterns, syllable types, etc.).</li> </ul> <p><b>VKT is below 30<sup>th</sup> percentile</b></p> <ul style="list-style-type: none"> <li>Provide instruction in base/root words and prefixes/suffixes.</li> <li>Provide other intensive vocabulary instruction.</li> </ul> <p><b>SKT is below 30<sup>th</sup> percentile</b></p> <ul style="list-style-type: none"> <li>Provide explicit instruction in sentence construction and determining how clauses and ideas relate to one another throughout a text.</li> </ul>	<p><b>If a student's scores indicate difficulties with word recognition (WRT, fluency) only:</b></p> <p>Expert 21; Rubicon Issues21; Literacy Design Collaborative; Classroom Novel Sets; Classroom Libraries; Comprehensive Instructional Sequence</p> <p><b>If a student's scores indicate difficulties with oral language (VKT, SKT) only:</b></p> <p>READ180; Rubicon Issues21; Literacy Design Collaborative; Classroom Novel Sets; Classroom Libraries; Comprehensive Instructional Sequence</p> <p><b>If a student's scores indicate difficulties with both decoding (WRT) and oral language (VKT, SKT):</b></p> <p>Academy of Reading; MCI; S.F.I.R.E.; Literacy Design Collaborative; Classroom Novel Sets; Classroom Libraries; Comprehensive Instructional Sequence</p>

### Activity #4

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

## Questions

[http://padlet.com/adrea\\_truckenmi/OSPA](http://padlet.com/adrea_truckenmi/OSPA)



100

FCRR  
FLORIDA CENTER FOR READING RESEARCH

---

---

---

---

---

---

---

## Coming Soon!

- Consider for your professional learning communities
  - Early literacy intervention: A self-study guide for implementation
    - By Dombek, Foorman, Garcia, & Smith <http://rel-se.fcrr.org/>
  - Is There an Evidence Base for Response to Intervention in Reading?
    - By Gersten, Gonchar, Haymond, & Dimino <http://rel-se.fcrr.org/>
  - Foundational Skills to Support Reading for Understanding in Kindergarten through 3<sup>rd</sup> Grade
    - By Foorman, Coyne, Denton, Dimino, Hayes, Justice, Lewis, & Wagner [http://ies.ed.gov/ncee/wwc/Publications\\_Reviews.aspx](http://ies.ed.gov/ncee/wwc/Publications_Reviews.aspx)
  - Summary of 20 years of research on the effectiveness of adolescent literacy programs and practices (grades 6 - 12)
    - By Herrera, Truckenmiller, & Foorman <http://ies.ed.gov/ncee/edlabs/projects/project.asp?projectID=464>

101

FCRR  
FLORIDA CENTER FOR READING RESEARCH

---

---

---

---

---

---

---