Evidence-based interventions for preventing reading failure

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Disclaimer

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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.

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Post questions

http://padlet.com/adrea_truckenmi/OSPA



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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

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Components of Reading

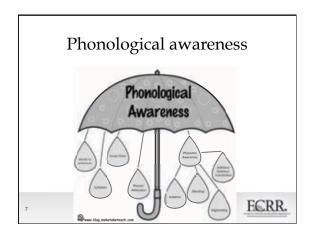
A fresh look at the big 5

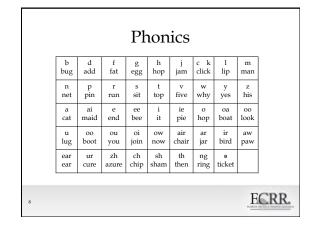
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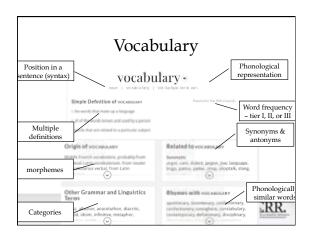
The Big 5

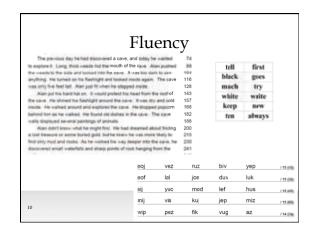
bility to hear, identify ounds in spoken langua Phonological awareness Phonics Fluency Vocabulary Mental representation of the tex Comprehension

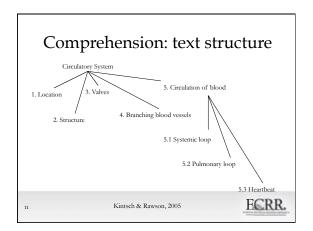
National Reading Panel, 2000

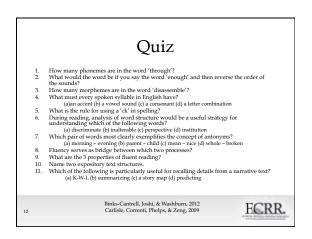


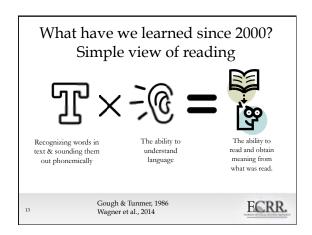


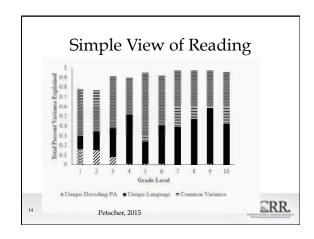


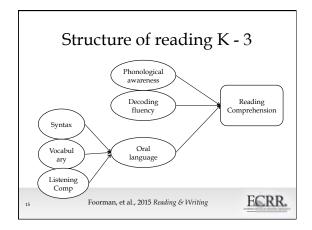


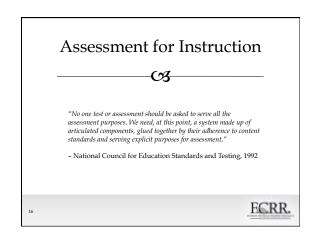


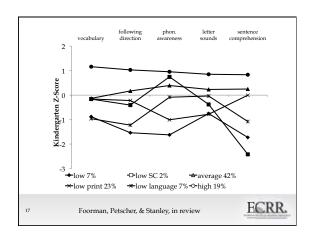


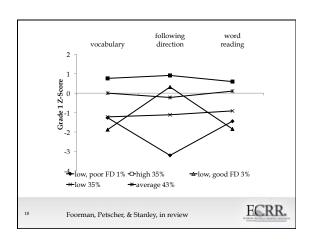


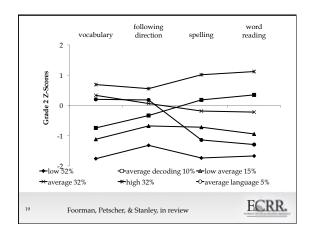


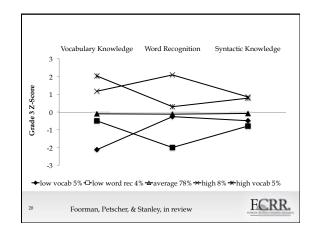


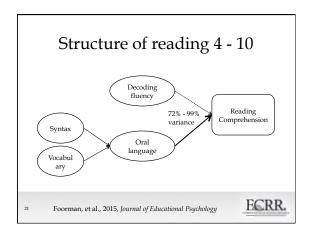


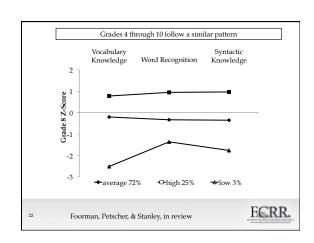


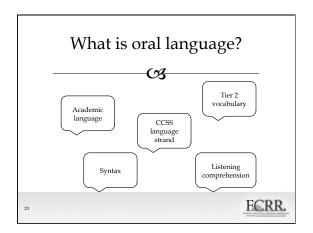






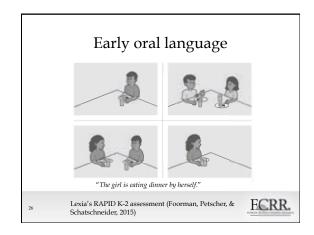


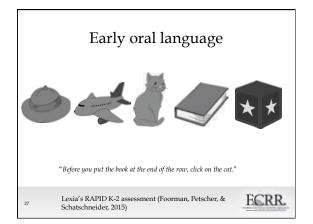


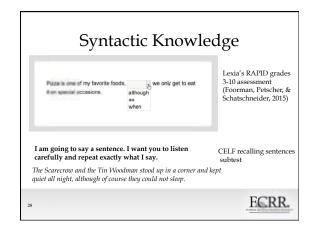


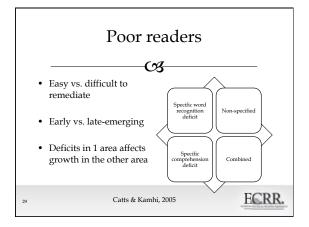
Defining new(ish) concepts • syntax, or grammar, is the set of rules governing the arrangement of words to form meaningful sentences. The rules of syntax include adding the right inflictional endings or suffixes to words (narphology), as well as knowing the proper order of the words of the control of the control of the control of 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 fiere and now and allows students to predict, hypothesis, reason, problem-solve, or compare and contrast (e.g., discussing what tile 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

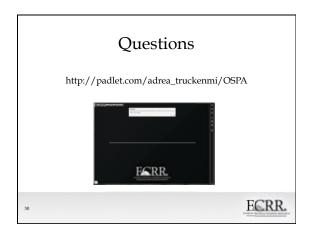
The Academic Language of Disciplines						
	English	Mathematics	History	Science		
text type	literary	informational or technical, symbolic, diagrams	expository, argumentative, persuasive	Informational or technical, diagrams		
text structure	plot, setting, characterization, point of view, verse, rhyme	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		

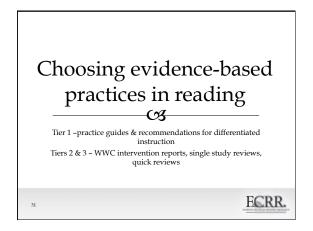


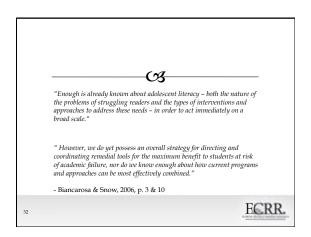


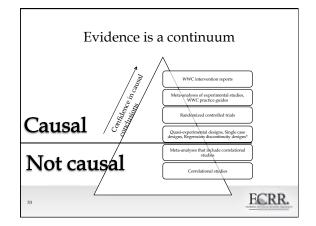


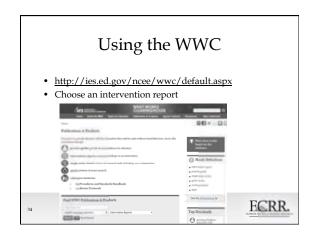


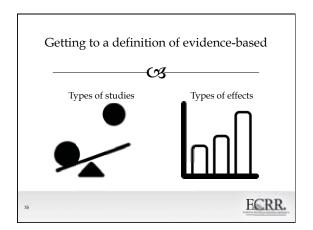


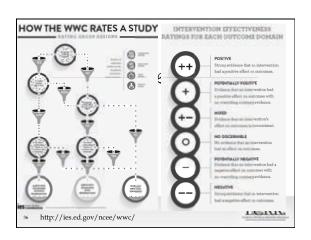




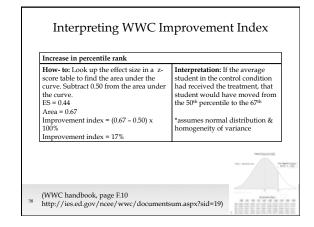








One definition of evidencebased WWC term Definition Study rating Studies receiving this rating provide the highest degree of confidence that an observed effect was caused by the interventior Only well-implemented randomized controlled trials that do not have problems with attrition may receive this highest rating. Meets standards without 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 2 or more studies show statistically significant positive effects, at least 1 of which meets WWC standards without reservations (i.e., randomized controlled trial) Positive effect (++) At least 1 study shows statistically significant or substantively Potentially positive effects (+)



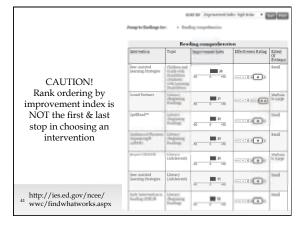
Extent of evidence

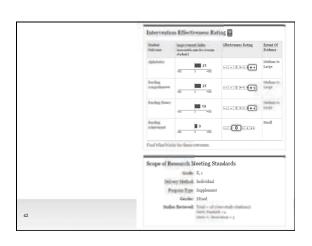
- Small
 - Includes only 1 study OR
 - Only 1 school OR
- Sample size < 350 students (14 classrooms)
- · Medium to large
 - > 1 study
 - > 1 school
 - Sample size > 350 students

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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

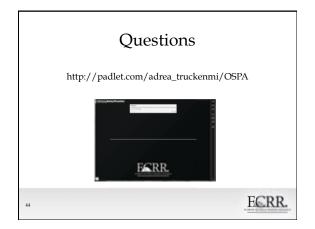




Factors affecting improvement index

- 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
- 1. Go to http://ies.ed.gov/ncee/wwc/rubications_keviews.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

 **The control of the cont
- - 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?

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General evidence-based instructional practices

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For elementary & secondary students

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Practice guides General qualities of instructional practices that have worked What Works learinghouse across several studies. Determined by an expert panel's review of studies that meet WWC standards D+ . DO

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
- 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)

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Adolescent literacy: example

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Student team reading & writing

- Partner reading
- rarmer 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.

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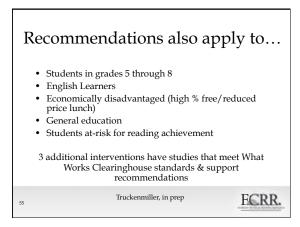
Study rating: example No confounds: more than 1 teacher/school per condition; STR&W was not confounded w/ another new practice No random assignmen osttest (CAT) is reliable alid, not overaligned to condition, & the same measure as prettest Study meets WWC group design standards with reservations Baseline differences of CAT, g = .10 to .22 (adjustable range) Study uses ANCOVA to adjust for baseline ECRR.

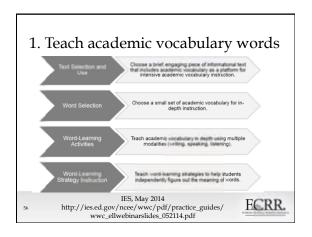
Teaching academic language to improve comprehension

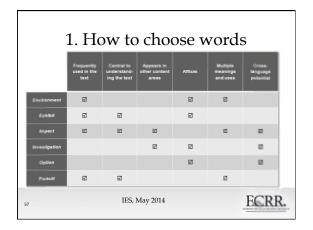
AKA oral language, listening comprehension, considerations for teaching English Learners

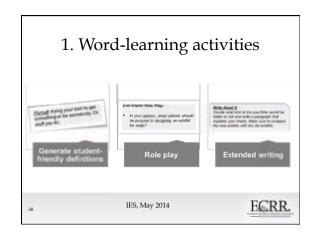
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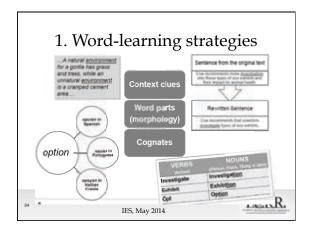
Recommendations Levels of Evidence Minimal Evidence Recommendations Teach a set of academic vocabulary worth into across several days using a variety of instructi activities. Integrate oral and written English tar into content area teaching. Prove structured opportunities to develop write language skills. wide small-group instructional intervention to stu-res straggling in areas of literacy and English lan-Baker, et al., 2014, p. 7 ECRR.

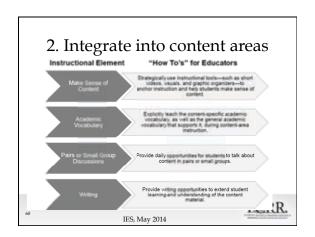


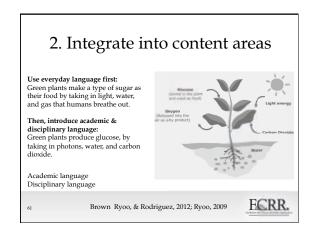


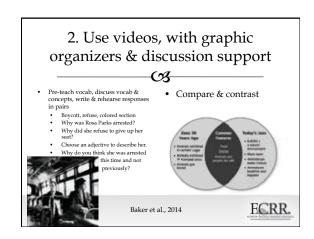


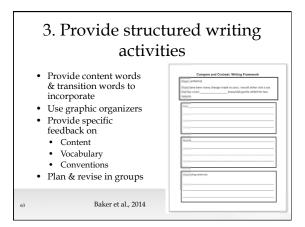


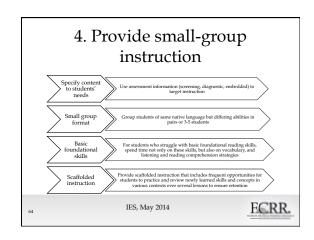


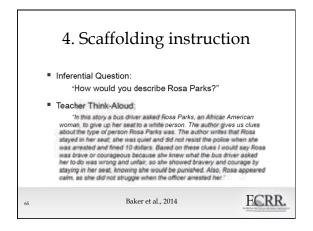


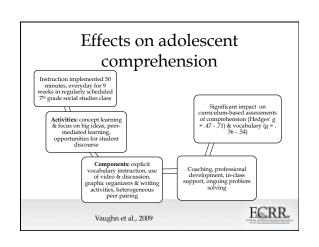












Summary

- 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



Further study - PLC

- Baker, S., Lesaux, N., Javanthi, M., Dimino, J., Proctor, C. P., Morris, J., Gersten, R., Haymond, K., Kieffer, M. J., Linan-Thompson, S., & Newman-Gonchar, R. (2014). Teaching ecademic content and literacy to English learners in elementary and middle school (NCEE 2014-4012). Washington, D.C. 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 I: Research-based Recommendations for Instruction and Academic Interventions

 Book I: Research-based Recommendations for Serving Adolescent Newcomers.

- 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



Questions http://padlet.com/adrea_truckenmi/OSPA ECRR. ECRR.

Aligning assessments with decisions

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

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Assessment Example Who needs more intensive instruction? Screening score MAP RIT score RAPID reading success probability Fails state test

Assessments & decisions

Decision

Percentile ranks (look at student's strengths & weaknesses) from diagnostic tasks OR What type of instruction does the MAP diagnostic RAPID percentile ranks student need? Curriculum-embedded easures How do we know if the Growth-sensitive score from student made progress? screening or diagnostic tasks MAP RIT score RAPID ability scores Which lesson or section within the curriculum does the student(s)

Curriculum-embedded formative assessment Curriculum placement assessment SRA check-out **FCRR**

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

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

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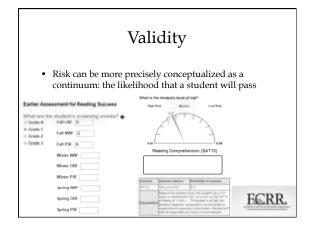
Validity

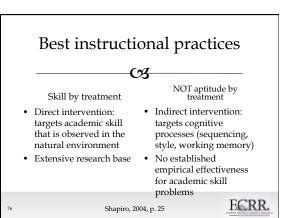
 You can calculate the classification accuracy in your school, with your screening & outcome measure, and your base rate
 Sensitivity = a / (a + c)

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

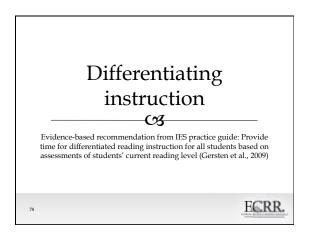
Sensitivity = a / (a + c)Specificity = d / (b + d)False positive rate = b / (b + d)False negative rate = c / (a + c)Positive predictive power = a / (a + b)Negative predictive power = d / (c + d)Overall classification rate = (a + d) / (b + d)

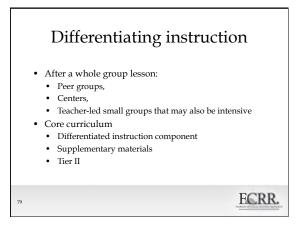
National Center on Response to Intervention (2013). 4 Schatschneider, Petscher, & William (2008) Truckenmiller et al. (under review)

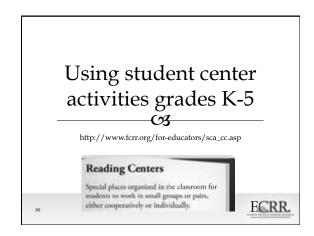


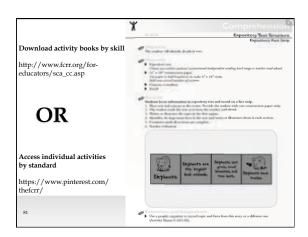


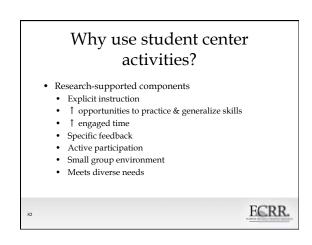


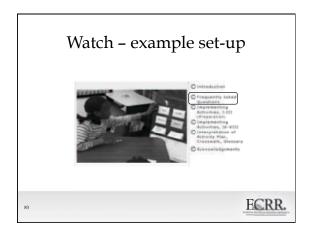


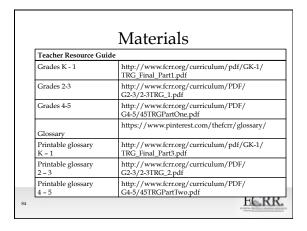










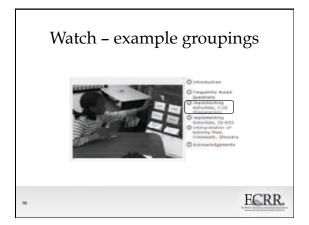


Steps

- 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

Kosanovich, Weinstein, & Goldman, 2009





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

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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

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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
- · Monitor participation for behavior, errors, mastery
- Consultant/coach ask about behavior issues during follow-up

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Watch - routine ECRR.

Early completion activities

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

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Grade labels NOT needed

- The grade level label is based on when schools typically teach the skill and is NOT a label for the
- 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

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Considerations for support

OB

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.

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Differentiating in secondary



- Heterogeneous peer
- 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

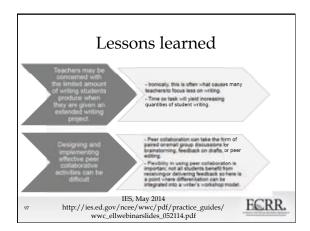
Reciprocal teaching in groups

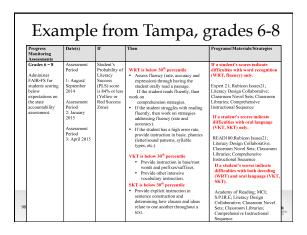


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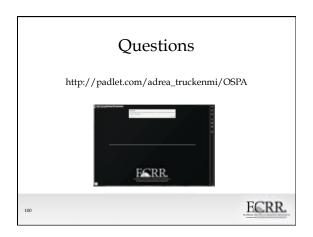
Lessons learned ECRR. http://ies.ed.gov/ncee/wwc/pdf/practice_guides/ wwc_ellwebinarslides_052114.pdf

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	Activity #4	Who needs instruction?	What materials or resources will we use?	What additional materials or resources do we need?		
	Alphabetics Decoding, phonics, phonology,				Differentiated	
	morphology, spelling				Intervention	
	Oral language word meanings, academic language; ,morpholog				Differentiated	
	, syntax, grammar, ohesion				Intervention	
	Comprehension connected text, text organization &				Differentiated	
99	structure, strategies, metacognition				Intervention	-



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 3nd Grade

 By Foorman, Coyne, Denton, Dimino, Hayes, Justice, Lewis, & Wagner http://iss.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

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