Research-Based Practices that Align with the Montana Dyslexia Law

@burnsmk1

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States with a Dyslexia Law

https://improvingliteracy.org/state-of-dyslexia

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What is Dyslexia?

"Dyslexia is a specific learning disability that is neurobiological in origin.

It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities.

These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction.

Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge."

Adopted by the IDA Board of Directors, Nov. 12, 2002.

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Montana Dyslexia Law

- A school district shall utilize a screening instrument aimed at identifying students at risk of not meeting grade-level reading benchmarks. The screening instrument must:
- (i) be administered to:
- (A) a child in the first year that the child is admitted to a school of the district up to grade 2; and
- (B) a child who has not been previously screened by the district and who fails to meet grade-level reading benchmarks in any grade;
- (ii) be administered by an individual with an understanding of, and training to identify, signs of dyslexia; and
- (iii) be designed to assess developmentally appropriate phonological and phonemic awareness skills.

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Montana Dyslexia Law

- (4) The office of public instruction shall:
- (b) provide guidance to school districts related to:
- (i) the early identification of students with dyslexia, including best practices for universal, valid, and reliable screening methods and other assessments in support of the requirements of subsection (3)(b) that:
- (A) have minimal or no cost to a district; and
- (B) are able to be integrated with a district's existing reading programs;

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Montana Dyslexia Law

- (c) If a screening under subsection (3)(b) suggests that a child may have dyslexia or a medical professional diagnoses a child with dyslexia, the child's school district shall take steps to identify the specific needs of the child and implement best practice interventions to address those needs. This process may lead to consideration of the child's qualification as a child with a disability under the Individuals With Disabilities Education Act.

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Early Warning Signs - Myths

- Preschool
  - May talk later than most children
  - May have difficulty pronouncing words, i.e., *busgetti* for *spaghetti*, *mawn lower* for *lawn mower*
  - May be unable to recall the right word
  - May have trouble interacting with peers
  - May be unable to follow multi-step directions or routines
  - Fine motor skills may develop more slowly than in other children

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Early Warning Signs - Myths

- Early Elementary
  - Letter reversals – *d* for *b* as in, *dog* for *bog*
  - Word reversals – *tip* for *pit*
  - Inversions – *m* and *w*, *u* and *n*
  - Transpositions – *felt* and *left*
  - Substitutions – *house* and *home*
  - May transpose number sequences and confuse arithmetic signs (+ - x / =)
  - May be impulsive and prone to accidents
  - May have difficulty planning
  - Often uses an awkward pencil grip (fist, thumb hooked over fingers, etc.)
  - May have trouble learning to tell time
  - May have poor fine motor coordination

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Early Warning Signs

May be slow to add new vocabulary words

May have difficulty with rhyming

May have trouble learning the alphabet, numbers, days of the week, colors, shapes, how to spell and write his or her name

May have difficulty telling and/or retelling a story in the correct sequence

Often has difficulty separating sounds in words and blending sounds to make words

Seems to be unable to recognize letters in his/her own name

Has difficulty decoding single words (reading single words in isolation)

May be slow to learn the connection between letters and sounds

A family history of reading and/or spelling difficulties

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DSM – 5 (APA)

- Specific Learning Disorder – Reading, not dyslexia.

a. Difficulty in at least one of the following areas that has persisted for at least 6 months despite the provision of extra help or targeted instruction – (a) inaccurate and slow reading, (b) understanding meaning of what is read, (c) spelling, (d) written expression (grammar, punctuation or organization), (e) understanding number concepts, facts, or calculation, and (f) mathematical reasoning.

b. The affected academic skills are substantially and quantifiably below those expected for age and cause impairment in academic, occupational, or everyday activities

c. Onset during the school-age years, although may not fully manifest until young adulthood in some individuals

d. Intellectual Disabilities, uncorrected auditory or visual acuity problems, other mental or neurological disorders or adverse conditions (psychosocial adversity, lack of proficiency in the language of instruction, inadequate instruction) must be ruled out before a diagnosis of SLD can be confirmed.

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Dyslexia

In 1880s it was Word Blindness

- Believed to be visual

Term first used in 1930 by physicians

- "dys" bad or difficult
- "lexia" language

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SLD Definition

- Kirk (1963) – LDA inaugural meeting in Chicago
- PL 94-142 (1975), PL 105-17 (IDEA 97), and PL 108-466

○ Specific Learning Disability (SLD) – a disorder in one or more of the basic psychological processes involved in language

○ Imperfect ability to listen think, speak, read, write, spell, or do mathematic calculations

○ Includes perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia

○ Does not include learning problems due to visual, hearing, or motor handicaps, mental retardation, emotional disturbance, or environmental, cultural, or economic disadvantage.

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Illinois Test of Psycholinguistic Ability (ITPA)

Kirk, McCarthy, & Kirk (1968)

Based Information Processing

Uses

- Assess LD and develop interventions
- Train the deficit area
- Utilize areas of strength
- Use multisensory presentations more appropriately
- Remediate prerequisite deficits

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Criticism of ITPA

- Low reliability
- Inadequate validity
- Significant cultural bias (Kaplan & Saccuzzo, 2001)
- Hammill & Larsen (1974)
  - Reviewed 39 studies
  - 54% to 75% were negative
  - No instructional relevance

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1975 to 1977

PASSAGE OF IDEA

REGULATIONS CAME OUT IN 1977

MOST COMMON APPROACH TO LD DIAGNOSIS

CLINICAL JUDGMENT

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The Great Compromise

A severe discrepancy between the student's apparent potential for learning and his or her low level of achievement.

- Below average for age
- Below expected levels based on ability

One or more areas

- Oral Expression
- Listening Comprehension
- Written Expression
- Basic Reading Skills
- Reading Comprehension
- Mathematics Calculation
- Mathematics Reasoning

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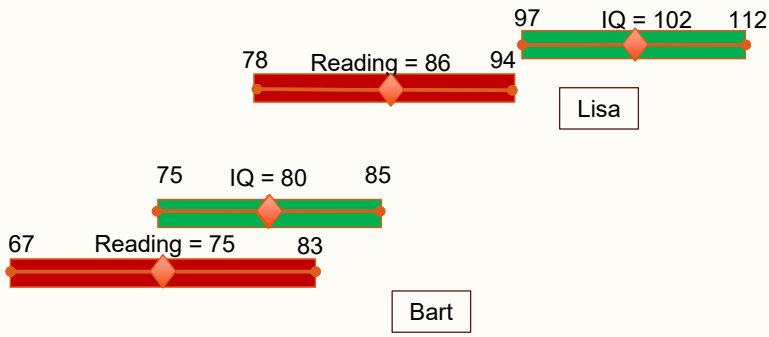
SLD Identification



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Purposes of Assessment

Screening: Which of my students are not meeting grade level expectations given Universal Instruction?

- E.g., STAR, NWEA

Diagnostic: What are the specific needs of students who struggle?

E.g., measures of specific skills

Monitoring Progress: What does the student's growth look like?

E.g., CBM (Aimsweb, Acadience, DIBELS, FastBridge)

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Screener	MAP < 25th %ile	MAP ≥ 25th %ile	Total
Oral Reading Fluency (ORF)			
ORF < Benchmark Goal	276	145	421
	a	b	
ORF ≥ Benchmark Goal	46	501	547
	c	d	
Total	322	646	968
Informal Reading Inventory (RI)			
RI < Benchmark Goal	90	189	279
	a	b	
RI ≥ Benchmark Goal	200	367	567
	c	d	
Total	290	556	846

Sensitivity = a / (a + c)
.86 for CBMF
.31 for F&P

Specificity = d / (b + d)
.78 for ORF
.66 for F&P,

Correct Classification = (a + d) / N
.80 for ORF
.54 for F&P

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Variable		n	%
Grade	Kindergarten	23	20.0
	First	22	19.1
	Second	29	25.2
	Third	41	35.7
Race or Ethnicity	African-American	12	10.4
	Asian	3	2.6
	Hispanic	8	7.0
	White	89	77.4
	Other/Multi	3	2.6
Gender	Female	61	53.0
	Male	54	47.0

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Diagnostic Accuracy of Shaywitz DyslexiaScreen to Predict Low Phonological Awareness

		Phonological Awareness*	
		At-Risk	Not At-Risk
Shaywitz DyslexiaScreen	At-Risk	18 a	21 b
	Not At-Risk	33 c	27 d

* As measured by the Comprehensive Test of Phonological Processing (2nd ed.).

Sensitivity = a / (a + c) = .35
Specificity = d / (b + d) = .44
Overall Correct Classification = (a + d) / n = .45.

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Diagnostic Accuracy of DIBELS Composite to Predict Low Phonological Awareness

		Phonological Awareness*	
		At-Risk	Not At-Risk
DIBELS Composite	At-Risk	46 a	17 b
	Not At-Risk	5 c	33 d

*As measured by the Comprehensive Test of Phonological Processing (2nd ed.).

Sensitivity = a / (a + c) = .90
Specificity = d / (b + d) = .66,
Overall Correct Classification = (a + d) / n = .78.

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A Word About RAN

Variable	*N*	*n*	*r*
Outcome			
Reading Accuracy	79	12,239	.42
Reading Fluency	55	15,710	.49
Stimulus			
Letters	55	13,124	.51
Numbers	60	12,622	.48
Pictures	32	8,409	.35
Colors	25	2,402	.33

Araújo, S., Reis, A., Petersson, K. M., & Faísca, L. (2015). Rapid automatized naming and reading performance: A meta-analysis. *Journal of Educational Psychology, 107*(3), 868–883. https://doi.org/10.1037/edu0000006

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Dyslexia Guidelines

- Skill
- Phonological awareness
- RAN
- Nonsense Word
- Letter-Sound/Sound Symbol
- Fluency

- Measure
- Initial (First) Sound Fluency
- Phoneme Segmentation Fluency
- LNF
- NWF (Word Attack), LSF
- Letter Sound Fluency
- Oral reading fluency

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Screening Process

- Screen with PA (FSF, PSF, PAI) and LNF for kindergarten
- Screen with decoding for first grade (NWF)
  - Low, look at PA and LNF
- Screen with CBM-R for 2nd – 5th
  - Low accuracy (93% 1st – 3rd, 95% 4th and 5th) = low decoding
  - Assess NWF or WA for kids who score low
- Screen with comprehension for MS and HS
  - (use CBM-R or decoding if low)

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What About Spelling

Spelling = decoding

Terrible screener

Kids with low decoding are poor spellers, BUT

Bunch of kids who are poor spellers who decode fine

Good diagnostic

WTW (already have it then use it)

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Step 1 – Get a Good Reading Screener

Reliable

Quick

Easy to use

Informs instruction

Preferably cheap!

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Step 2 – Consider Classroom

- The hallmark of dyslexia is not poor reading performance
- It is poor reading performance in the face of effective reading instruction.
- Most children who struggle to learn to read do not have dyslexia
- Poor reading performance should signal the need for screening.

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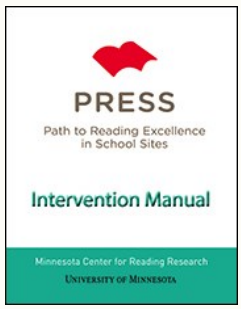
PRESS

http://presscommunity.org



PRESS
Path to Reading Excellence in School Sites

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Kindergarten Winter*

LSF

Criterion = 20 Sounds per minute

Name		Fall
KA		25
BA		29
SW		20
RA		15
TV		12
JP		18
PJ		25
YD		14
CA		29
GA		0
OG		19
SM		4
TJ		12
AD		1
GM		17
QL		4
TE		29
CJ		3
VR		3
LD		2
RL		4
Median		14

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What is the Class Median?

MODEL

Student	Grade	Winter Benchmark 101 ORF WRC	Errors
A	3	21	8
B	3	18	6
C	3	87	1
D	3	110	0
E	3	46	6
F	3	92	1
G	3	89	3
H	3	98	1
I	3	119	2
J	3	96	2
K	3	50	8
L	3	122	2
M	3	97	1
N	3	49	6
O	3	105	0
P	3	86	6
Q	3	89	2
R	3	76	3
S	3	112	3
T	3	141	1
U	3	94	2
Class Median			

Student	Grade	Winter Benchmark 101 ORF WRC	Errors
B	3	18	6
A	3	21	8
E	3	46	6
N	3	49	6
K	3	50	8
R	3	76	3
P	3	86	6
C	3	87	1
G	3	89	3
Q	3	89	2
F	3	92	1
U	3	94	2
J	3	96	2
M	3	97	1
H	3	98	1
O	3	105	0
D	3	110	0
S	3	112	3
I	3	119	2
L	3	122	2
T	3	141	1
Class Median		92	

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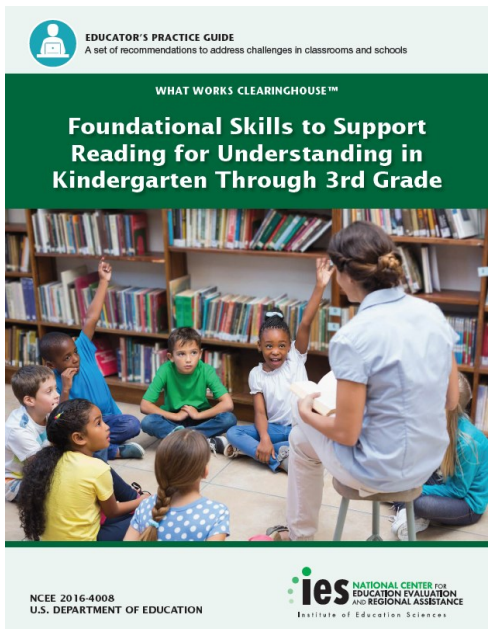

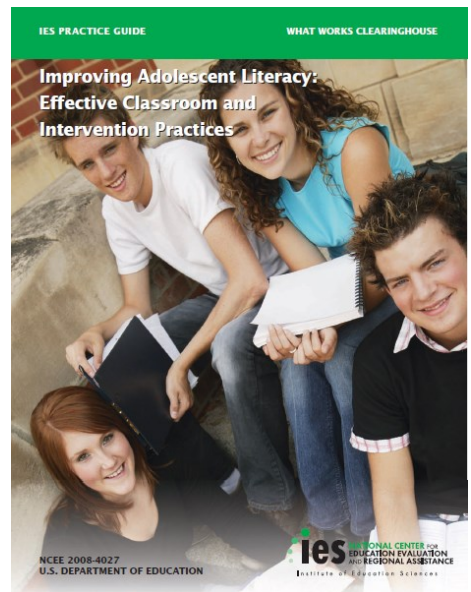

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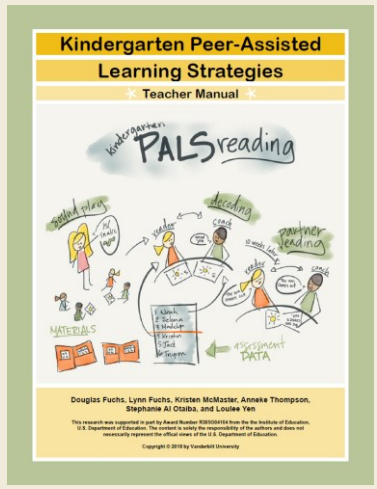

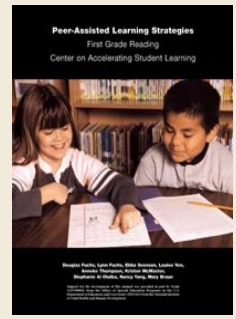

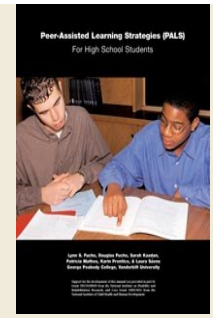

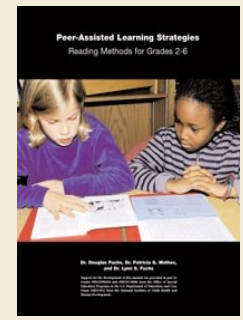

Classwide Intervention

http://kc.vanderbilt.edu/pals/

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Spring Benchmark			90
Student	Grade	ORF	
		WRC	Errors
A	2	31	6
B	2	47	5
C	2	47	4
D	2	48	4
E	2	51	2
F	2	54	3
G	2	55	4
H	2	58	7
I	2	61	7
J	2	61	1
K	2	65	0
L	2	71	1
M	2	78	2
N	2	82	6
O	2	84	0
P	2	86	0
Q	2	95	0
R	2	98	2
S	2	108	1
T	2	121	2
U	2	141	3
Class Median			

Partner Reading Partnerships

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Procedure

Partner Reading	Paragraph Shrinking
1. Stronger reader reads aloud for 5 minutes 2. The weaker reader reads aloud the SAME text for 5 minutes	1. For 5 minutes the stronger read continues reading new text in the story, stopping after each paragraph to summarize 2. For 5 minutes the weaker reader continues with the new text, stopping after each paragraph to summarize

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Timeline

- **Collect Data: Pre-test (fluency and comprehension)**
- **Day 1:** Train Students on Set Up Procedures and Partner Reading, Practice Reading for 10 minutes, Error Correction
- **Day 2:** Train Students on Paragraph Shrinking, Practice Reading for 10 minutes
- **Day 3-10:** Partner Reading, Paragraph Shrinking 15 minutes every day
- **Collect Data: Post-test (fluency and comprehension)**

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What we found: 3rd grade Partner Reading data

Third Grade

Third Grade Benchmark	91 Words Read Correctly (WRC)		
	Pre Intervention Class Median (WRC)	Post Intervention Class Median (WRC)	Slope (WRC)
Class 1	81	104	11.5
Class 2	87	115	14

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What we found: 3rd grade Partner Reading data

	Students Below Benchmark Pre Intervention	Students Below Benchmark Post Intervention	Total Students in Class
Third Grade Class 1	10	5	20
Third Grade Class 2	13	5	23

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Science Project

- Approximately 140 4th and 5th graders
- Science content
- Readworks.org
- Grade level science MAZE
- 2 weeks

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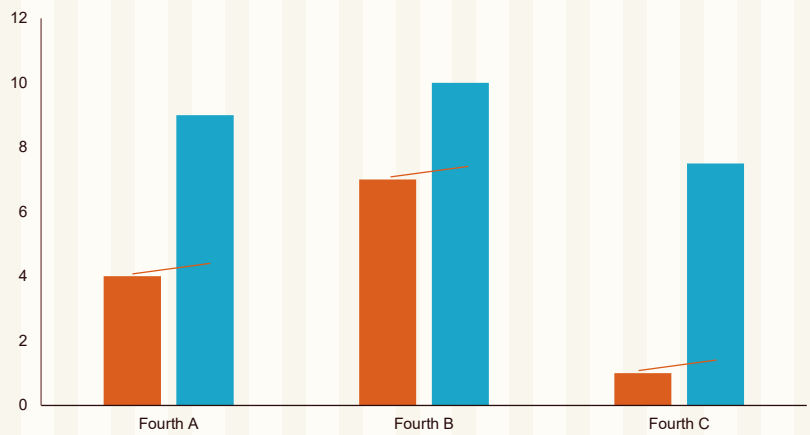
MAZE Growth 4th Grade



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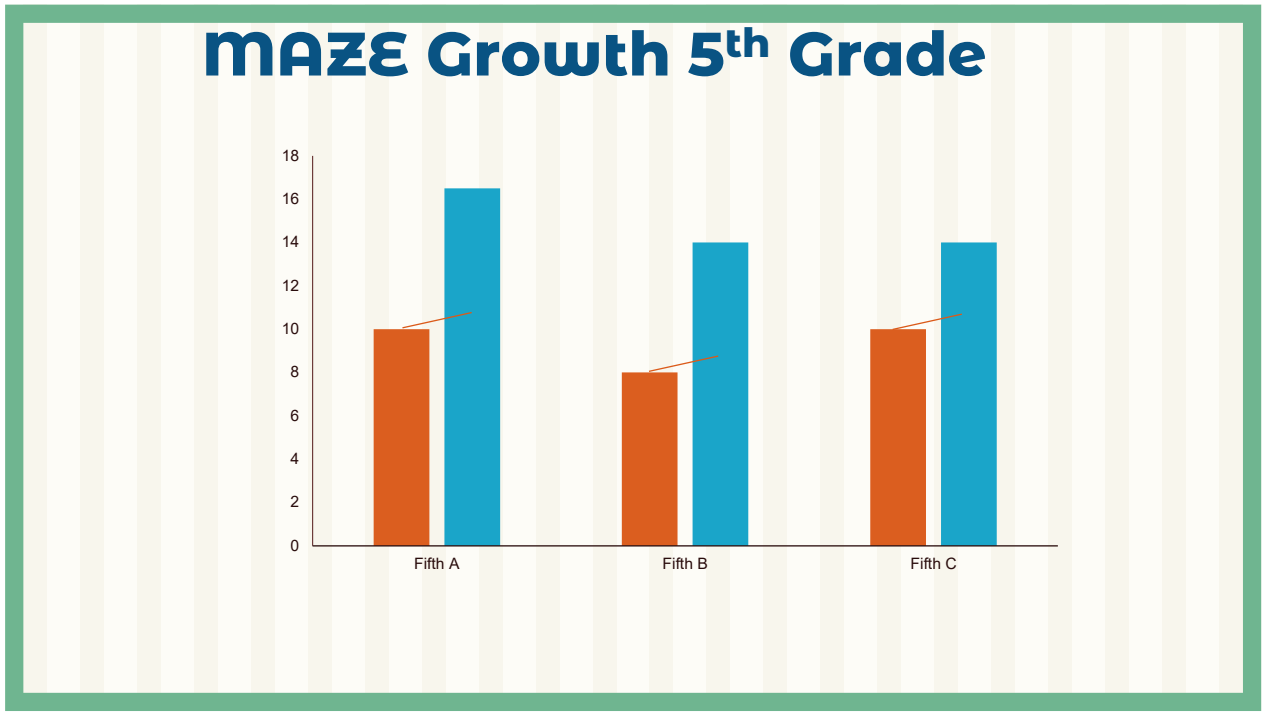
MAZE Growth 5th Grade
18
16
14
12
10
8
6
4
2
0
Fifth A
Fifth B
Fifth C

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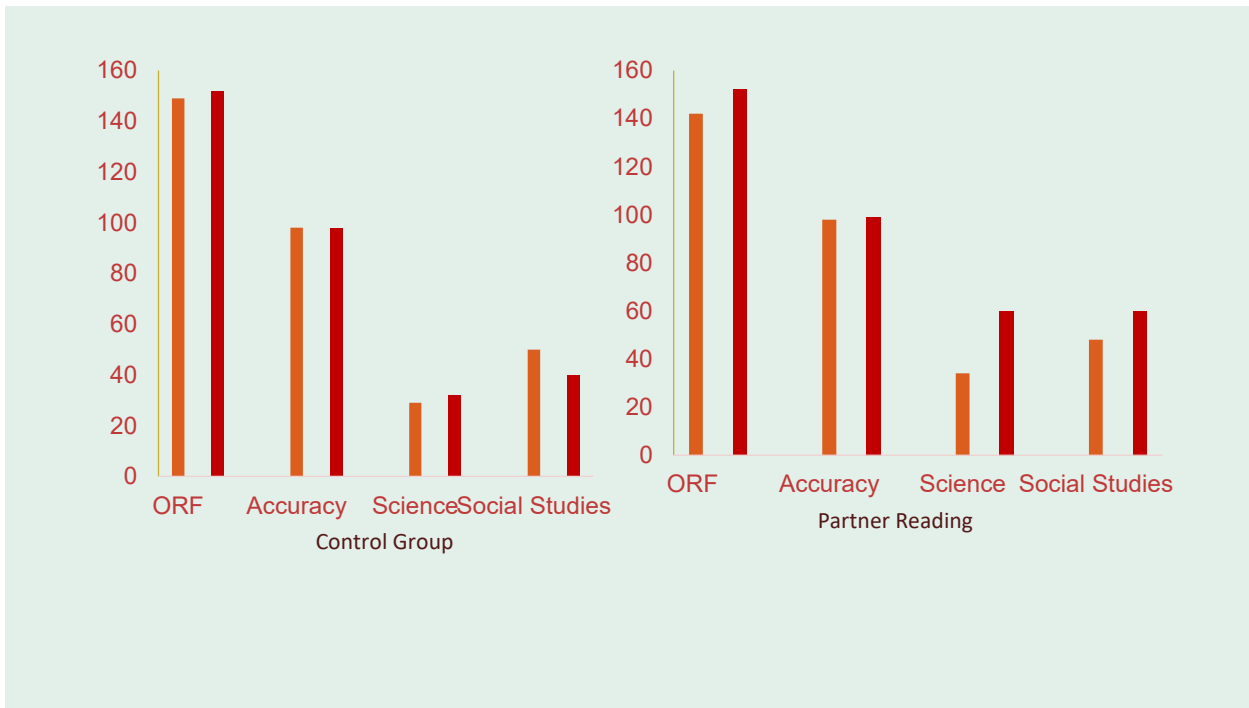
160
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Social Studies
Partner Reading

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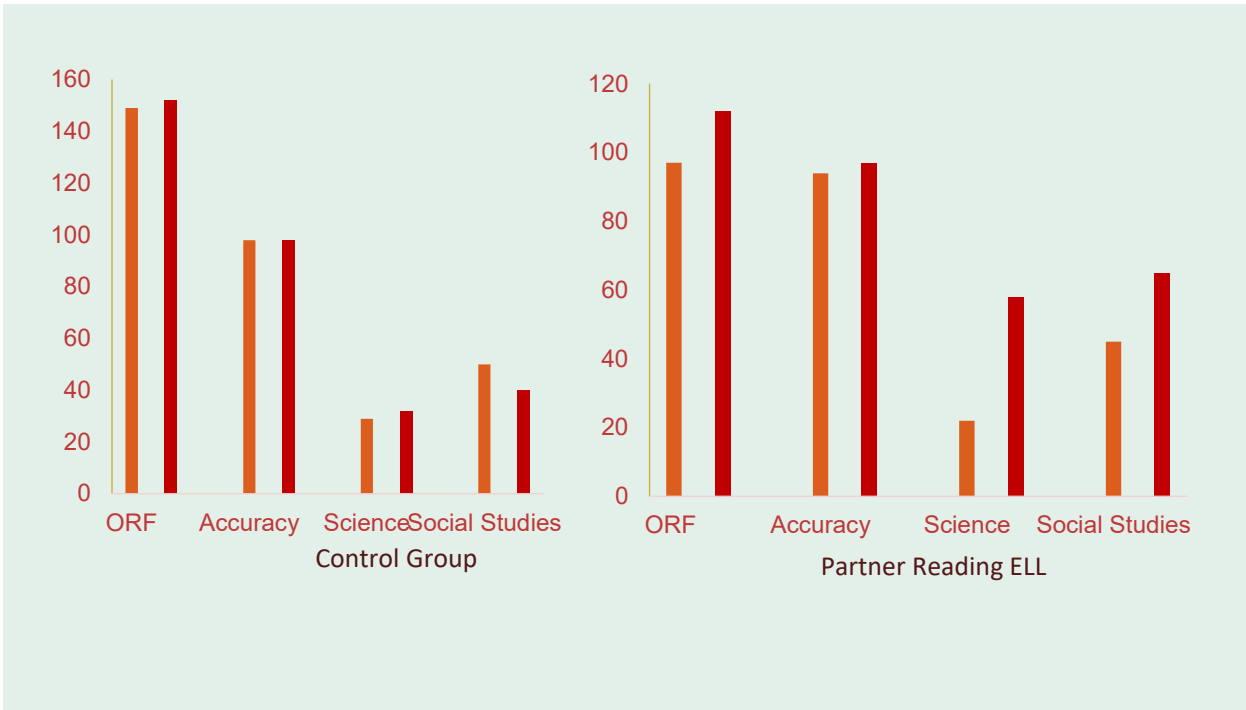
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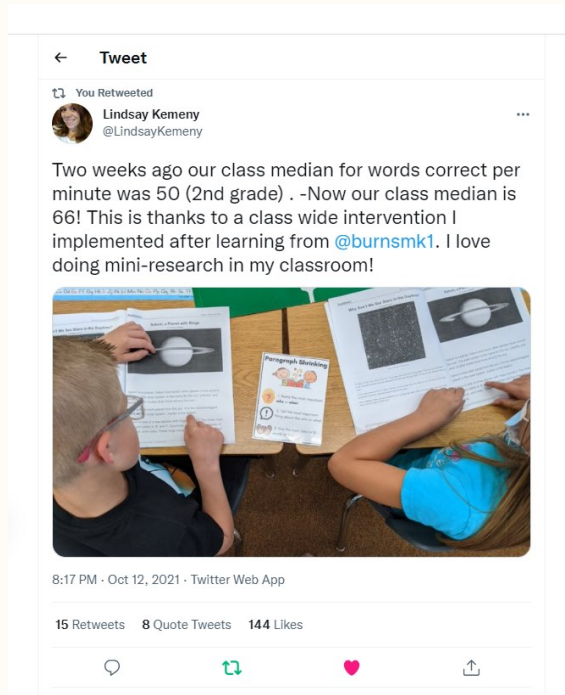
Tweet
You Retweeted
Lindsay Kemeny
@LindsayKemeny
Two weeks ago our class median for words correct per minute was 50 (2nd grade) . -Now our class median is 66! This is thanks to a class wide intervention I implemented after learning from @burnsmk1. I love doing mini-research in my classroom!
8:17 PM · Oct 12, 2021 · Twitter Web App
15 Retweets 8 Quote Tweets 144 Likes

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Agreement

Pre CBM-R score and MAP-R score = 69.6%

Post CBM-R score and MAP-R score = 91.3%

	CBM-R Pre	CBM-R Post	MAP-Reading Score
Student 1	48	92	189
Student 2	122	142	194
Student 3	126	147	196
Student 4	82	113	190
Student 5	102	117	188
Student 6	77	97	190
Student 7	51	70	161
Student 8	84	95	192
Student 9	80	82	174
Student 10	102	127	188
Student 11	83	106	189
Student 12	38	47	149
Student 13	104	115	196
Student 14	152	161	211
Student 15	143	158	205
Student 16	115	125	195
Student 17	142	160	224
Student 18	114	127	196
Student 19	13	40	138
Student 20	75	92	185
Student 21	141	136	205
Student 22	87	105	189
Student 23	49	47	145
Median	87	113	190

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Intervention

The child's school district shall take steps to identify the specific needs of the child and implement best practice interventions to address those needs. This process may lead to consideration of the child's qualification as a child with a disability under the Individuals With Disabilities Education Act.

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Interventions for Children with LD

Reading comprehension	1.13
Direct instruction	0.84
Psycholinguistic training	0.39
Modality instruction	0.15
Diet	0.12
Perceptual training	0.08

Kavale & Forness, 2000

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Tier 2

Student	Measure	# of Weeks Pre BEA	Pre BEA Slope
1	WRC	20	0.25
2	WRC	12	-0.64
3	WRC	10	1.50
4	LSC	22	-0.15
5	WRC	6	3.00
6	WRC	10	-3.05
7	WRC	16	0.07
8	WRC	14	0.71
9	WRC	8	0.90
10	LSC	20	1.32
11	WRC	8	-0.25
12	WRC	18	0.11
13	WRC	18	0.44
14	WRC	6	0.00
15	LSC	22	0.29
16	LSC	14	0.82
17	LSC	12	0.23

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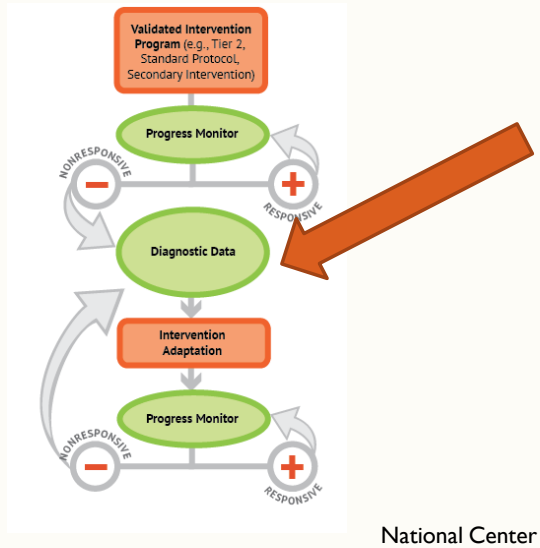
Framework to Intensify Interventions



National Center for Intensive Interventions

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Aptitude by Treatment Interaction (ATI)

- Differential intervention effectiveness based on student aptitudes (cognitive processes).
- Chronbach, 1957
- Makes intuitive sense – popular.

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Resurgence in ATI

- RTI – tier 3
- Measures of cognitive processes:
  - abilities would predict student outcomes better than CBM (Hale, 2006)
  - Provide data useful for designing interventions (Fiorello et al, 2006; Floyd et al., 2003; Hale et al., 2001).
- Current measures of underlying aptitudes are more sophisticated than those used in Cronbach's research (Swanson, 1987).

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Merge Neuropsych and RTI (Feifer, 2008)

- We should assess cognitive constructs such as verbal IQ, executive functioning, working memory, attention, and reading fluency.
- "Specifying the underlying linguistic and cognitive factors associated with poor reading comprehension skills may be helpful toward developing more effective intervention strategies to assist children" (p. 824), especially for those receiving a Tier 3 intervention.

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Table 2
Median Effect Sizes for Each Variable

Variable	*k*	Median *g*	95% CI	Fail-safe *N* for a small effect	Fail-safe *N* for a large effect
Use of data					
Screening	30	.41	.31–.51	32	15
Designing interventions	4	.42	−.05–.89	4	2
Tier of intervention					
Small group	15	.30	.18–.42	8	9
Individual	16	.44	.28–.60	19	7
Type of assessment					
Cognitive function	8	.17	−.07–.41	NA	6
Phonological/phonemic awareness	13	.50	.34–.66	20	5
Reading fluency	11	.43	.29–.57	13	5
Mixed	2	.26	.12–.40	1	1

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Executive Functioning (EF)

- Jacob and Parkinson (2015) - 67 Studies
- Most of studies occurred in 2010 or later
- EF and academic skills are correlated (equal for reading and math)
- Changing skills in EF **did not** lead to increased skills in reading and math
- No evidence for causal link between EF and reading or math

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Working Memory

Melby-Lervag & Hulme, 2012

Verbal Ability .13

Comprehension and problem solving Children (-.05)

Young children (.03)

Word Decoding .13

Arithmetic .07

"There was no convincing evidence of the generalization of working memory training to other skills."

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Table 1. summary of Meta-Analyses Regarding Cognitive Processes and Academic interventions

Study	Description	k	d
Burns et al. (in press)	Academic interventions from cognitive processing measures	37	0.17
Kearns & Fuchs (2013)*	Academic outcomes of cognitively focused intervention	34	0.44
	matched to cognitive deficits	5	0.48
	Compared to no intervention	11	0.58
	Compared to academic interventions	34	0.26
Melby-Lervag & Hhulme, (2013)	Working memory training and academic outcomes	8	0.11
	mathematics	7	0.07
	Decoding	7	0.13
	Verbal ability (comprehension)	8	0.13
Scholin & Burns (2012)	Predicting response to intervention for reading with IQ	18	0.27
Stuebing et al. (2009)	Relationship between IQ and academic outcomes	22	0.32
Stuebing et al. (2015)	Cognitive characteristics and response to intervention	54	0.46
	baseline characteristics and growth curves	36	0.65
	baseline characteristics and gain scores	30	0.43
	baseline characteristics and posttest	54	0.30
Schwaighofer et al. (2015)	Near and far transfers for working memory training	47	0.15
	mathematics	15	0.09
	Decoding	14	0.15
	Verbal ability (comprehension)	29	0.21
Total		**203**	**0.27**

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Table 2
Median Effect Sizes for Each Variable

Variable	*k*	Median *g*	95% CI	Fail-safe *N* for a small effect	Fail-safe *N* for a large effect
Use of data					
Screening	30	.41	.31–.51	32	15
Designing interventions	4	.42	−.05–.89	4	2
Tier of intervention					
Small group	15	.30	.18–.42	8	9
Individual	16	.44	.28–.60	19	7
Type of assessment					
Cognitive function	8	.17	−.07–.41	NA	6
Phonological/phonemic awareness	13	.50	.34–.66	20	5
Reading fluency	11	.43	.29–.57	13	5
Mixed	2	.26	.12–.40	1	1

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Skill-By-Treatment Interaction

- Burns, Codding, Boice, & Lukito, 2008
- Interventions selected based on student functioning in the specific skill
- Systematically identify and manipulate environmental conditions that are directly related to a problem
- Isolate target skill deficits

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Instructional Hierarchy:
Stages of Learning

	Acquisition	Proficiency	Generalization	Adaption
Learning Hierarchy	■Slow and inaccurate	■Accurate but slow	■Can apply to novel setting	■Can use information to solve problems
Instructional Hierarchy	■Modeling ■Explicit instruction ■Immediate corrective feedback	■Novel practice opportunities ■Independent practice ■Timings ■Immediate feedback	■Discrimination training ■Differentiation training	■Problem solving ■Simulations

Haring, N. G., & Eaton, M. D. (1978). Systematic instructional procedures: An instructional hierarchy. In N. G. Haring, T. C. Lovitt, M. D. Eaton, & C. L. Hansen (Eds.) *The fourth R: Research in the classroom* (pp. 23-40). Columbus, OH: Charles E. Merrill.

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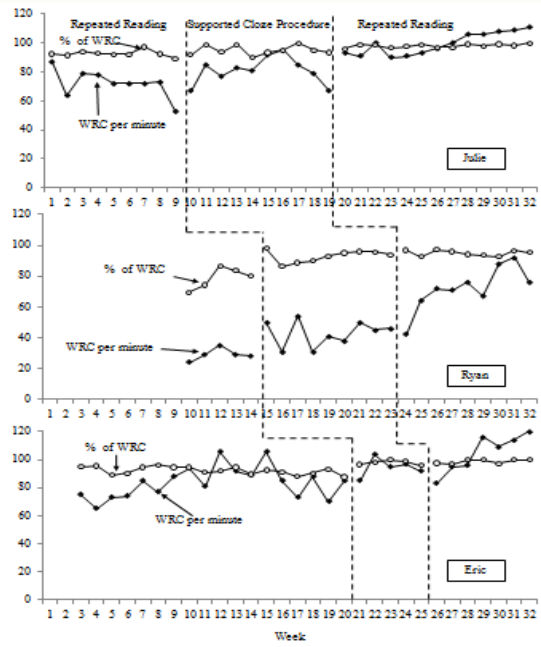
Results



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Learning Process

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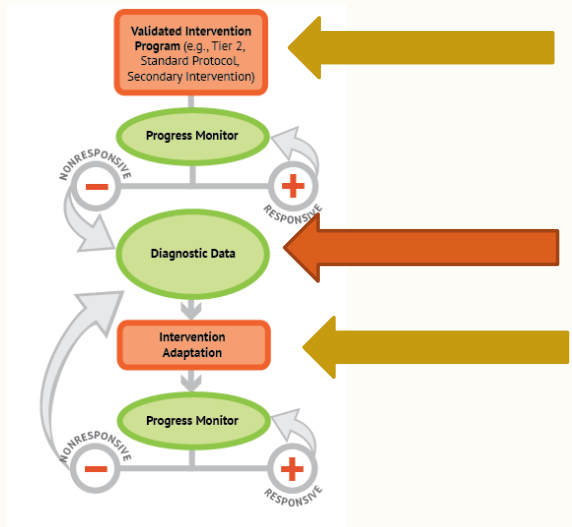
Framework to Intensify Interventions



National Center for Intensive Interventions

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Problem Analysis

- At the end of the lesson, can the kid do it? (Learn it in the first place?)
- If the kid learns it, does she remember it the next day?
- If she remembers it, can she apply or use it?

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Acquire

Validated protocol – different target

Adaption - Acquisition rate or make stimuli more salient and errorless

Retain

Validated protocol - Increased repetition within lesson (IR)

Adaption - Increased repetition across lessons or frequent review

Generalize

Validated protocol – comprehension or application interventions

Adaption - Integrate a variety of forms of the letters, words, numbers etc., including those similar to how they are presented during assessment into intervention sessions

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Acquire – Not learning it in the first place

- Validated Program – Right Target
- Modification – Errorless and Salient

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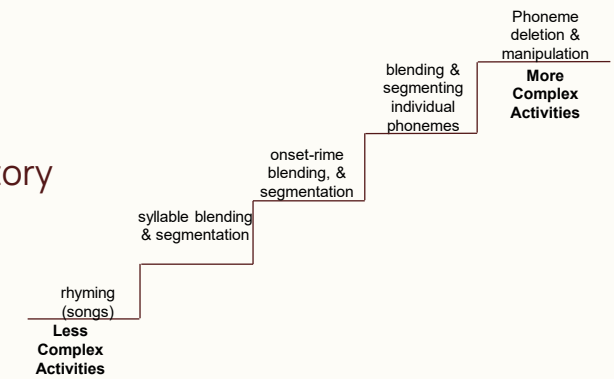
Right Target

- Decoding rather than fluency? PA rather than decoding?
- Easier math objective?
- Within domain?
  - Easier text
  - Decoding inventory



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Acquire – Not learning it in the first place

- Validated Program – Right Target
- Modification – Errorless and Salient

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Errorless - Listening Passage Preview

1. Select a passage to student that he/she will read for class
2. Present the text and tell him or her that you will read aloud while he or she follows along. This will help him or her read the page better.
3. Tell the student to follow along with finger
4. Read the text at a comfortable rate while monitoring if child is following
5. Have the student read the passage aloud

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Errorless - Phrase Drill

- Encourages words by word reading
- Strong error correction technique
- Likely to generalize learned words
- Takes more time than other approaches to error correction

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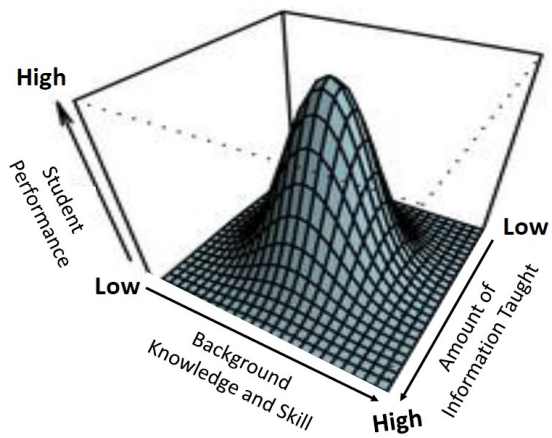

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Retention – Not remembering what was learned

- Validated Program – Increase repetition within session
  - Incremental Rehearsal
  - Repeated Reading
  - Word Sorts
- Modification – Increase repetition across sessions
  - Pocket words
  - Recall practice effect

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Incremental Rehearsal

- Developed by Dr. James Tucker (1989)
- Folding in technique
- Rehearses one new item at a time
- Uses instructional level and high repetition

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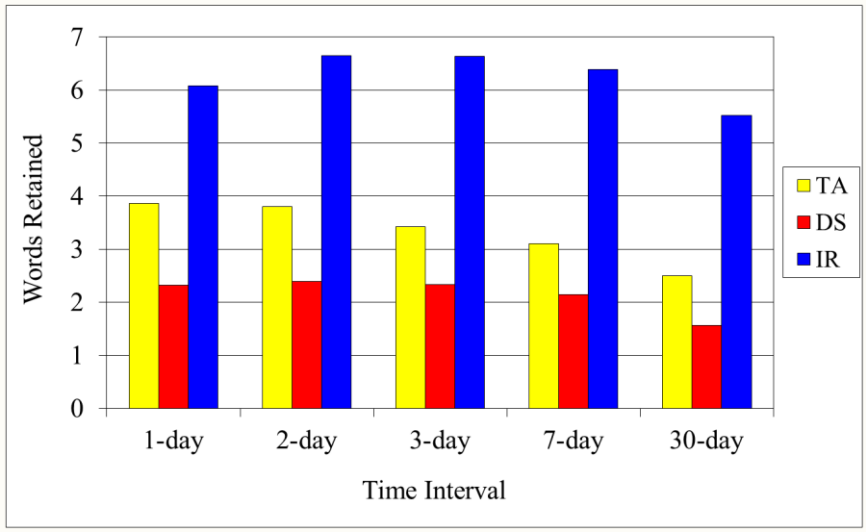
Mean Number of Words Retained



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Incremental Rehearsal Effectiveness

Bunn, R., Burns, M. K., Hoffman, H. H., & Newman, C. L. (2005). Using incremental rehearsal to teach letter identification with a preschool-aged child. *Journal of Evidence Based Practice for Schools, 6,* 124-134.

Burns, M. K. (2007). Reading at the instructional level with children identified as learning disabled: Potential implications for response–to-intervention. *School Psychology Quarterly,* 22, 297-313.

Burns, M. K. (2005). Using incremental rehearsal to practice multiplication facts with children identified as learning disabled in mathematics computation. *Education and Treatment of Children, 28,* 237-249.

Burns, M. K., Dean, V. J., & Foley, S. (2004). Preteaching unknown key words with incremental rehearsal to improve reading fluency and comprehension with children identified as reading disabled. *Journal of School Psychology, 42,* 303-314.

Codding, R. S., Archer, J., & Connell, J. (2010). A systematic replication and extension of using incremental rehearsal to improve multiplication skills: An investigation of generalization. *Journal of Behavioral Education, 19,* 93-105.

Matchett, D. L., & Burns, M. K. (2009). Increasing word recognition fluency with an English language learner. *Journal of Evidence Based Practices in Schools, 10,* 194-209.

Nist, L. & Joseph L. M. (2008). Effectiveness and efficiency of flashcard drill instructional methods on urban first-graders' word recognition, acquisition, maintenance, and generalization. *School Psychology Review, 37,* 294-208.

Peterson, M., Brandes, D., Kunkel, A., Wilson, J., Rahn, N., Egan, A., & McComas, J. J. (2014). Teaching letter sounds to kindergarten English language learners using Incremental Rehearsal. *Journal of School Psychology, 52,* 97-107.

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Repeated Readings

- One of the oldest and most well-researched interventions
- High OTR
- Generalizes to passage and similar ones

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Repeated Reading

Objective:	To increase fluent reading on passages for students who • read with high accuracy • show benefit from repeated practice on the same passage
Materials:	2 copies each of texts that the student can read with at least 95% accuracy Stop-watch Pencil/pen for teacher to mark errors

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Sequence:

1. Teacher explains that students will be reading a passage multiple times to work on increasing fluency (fluency is rate and accuracy and expression – not just speed)
2. Teacher gives copies of passages to student
3. (Optional Step) Student whisper reads passage to him/herself while tracking with his/her finger to figure out unknown words. Students may ask about any unknown words.
4. Teacher explains that for the first reading out-loud, the student will read for 1 minute.
5. Teacher says "Begin" (not "Start") and starts stop-watch.
6. Student reads passage out-loud.
7. Teacher marks errors and monitors stopwatch. At one minute, teacher says "Stop" and marks the last word read by the student.
8. Teacher records number of correct words per minute and graphs results, showing the graph to the student.
9. Teacher provides standard error correction for each word the student read in error. ("That word is _____. What word?" The student repeats the word. Teacher says, "Yes. That word is _____." Student goes back to the beginning of the sentence to begin again.)
10. Repeat steps 5-9 at least two more times for a minimum of 3 timed readings (student reads, teacher times, words read correctly are recorded, and errors are corrected). Additional repetitions may be completed if student's fluency continues to improve through these readings.

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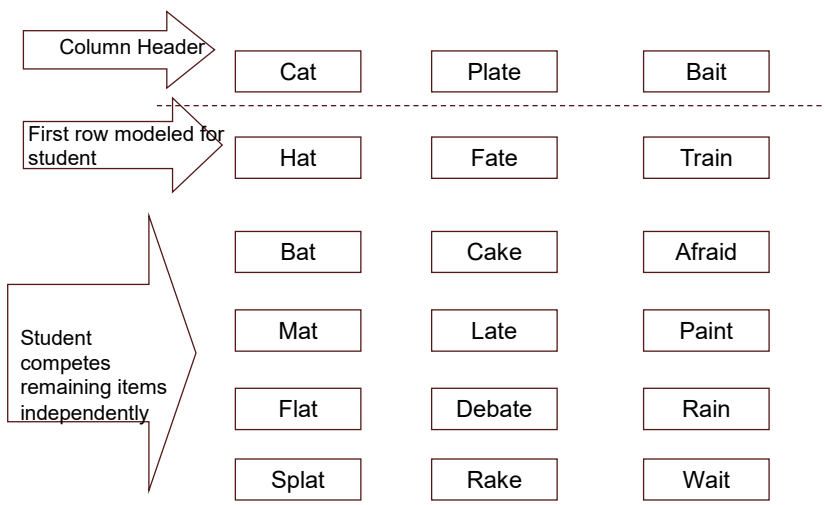

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Retention – Not remembering what was learned

- Validated Program – Increase repetition within session
  - Incremental Rehearsal
  - Repeated Reading
  - Word Sorts
- Modification – Increase repetition across sessions
  - Pocket words
  - Recall practice effect

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Increase Repetition

- Increase number of reads for repeated reading
- More examples in word sorts
- More items in C-C-C and practice sheets

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Retention Intervention

- Short sessions
- Twice per day
- Test retention at the end of each day
- Start with review

81

Generalization – Not applying what was learned

- Validated Program
  - Concept Map
  - Reciprocal Teaching
- Modification – Teach how you want them to use it

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Comprehension is affected by

1 & 2) Background knowledge and vocabulary

3) Correct inferences about reading

4) Word reading skill

5) Strategy use

(Cromley & Azevedo, 2007)

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Concept Maps

- http://www.schrockguide.net/concept-mapping.html
- https://www.eduplace.com/graphicorganizer/
- https://www.teachervision.com/graphic-organizers/printable/6293.html

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Generalization – Not applying what was learned

- Validated Program
  - Concept Map
  - Reciprocal Teaching
- Modification – Teach how you want them to use it

85

Generalization

- Integrate a variety of forms of the letters, words, numbers etc., including those similar to how they are presented during assessment into intervention sessions

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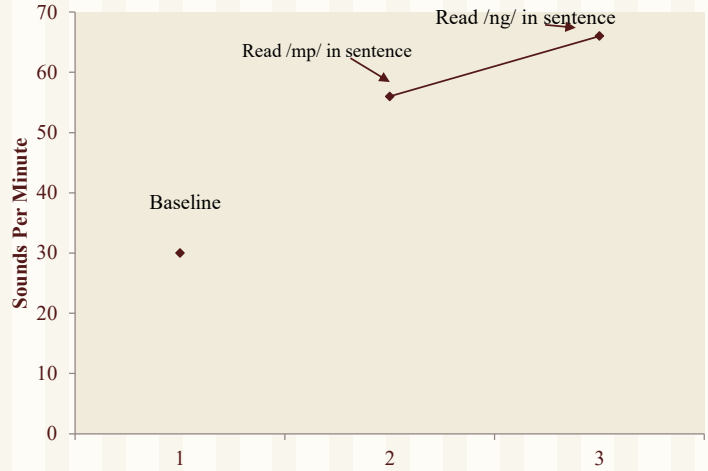
Generalization



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Results

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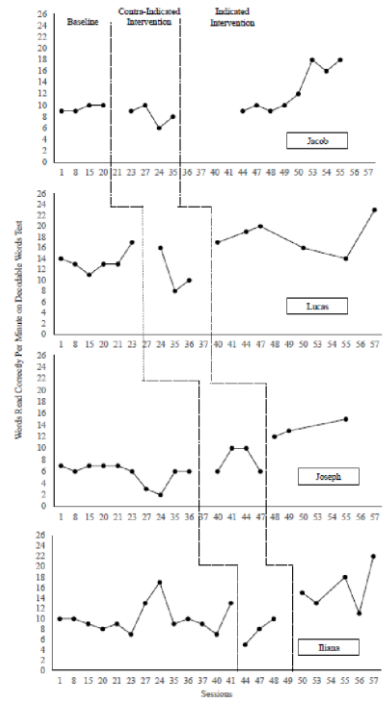

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Tier 2

Student	Measure	# of Weeks Pre BEA	Pre BEA Slope	# of Weeks Post-BEA	Post BEA Slope	Change in Slope
1	WRC	20	0.25	2	8.00	7.75
2	WRC	12	-0.64	8	0.55	1.19
3	WRC	10	1.50	14	1.68	0.18
4	LSC	22	-0.15	8	0.12	0.26
5	WRC	6	3.00	8	3.43	0.43
6	WRC	10	-3.05	9	3.03	6.08
7	WRC	16	0.07	7	0.46	0.39
8	WRC	14	0.71	9	2.78	2.07
9	WRC	8	0.90	8	1.06	0.16
10	LSC	20	1.32	2	8.00	6.68
11	WRC	8	-0.25	12	0.08	0.33
12	WRC	18	0.11	6	1.77	1.66
13	WRC	18	0.44	6	3.03	2.59
14	WRC	6	0.00	6	-0.40	-0.40
15	LSC	22	0.29	9	1.08	0.80
16	LSC	14	0.82	7	2.93	2.11
17	LSC	12	0.23	8	2.52	2.30

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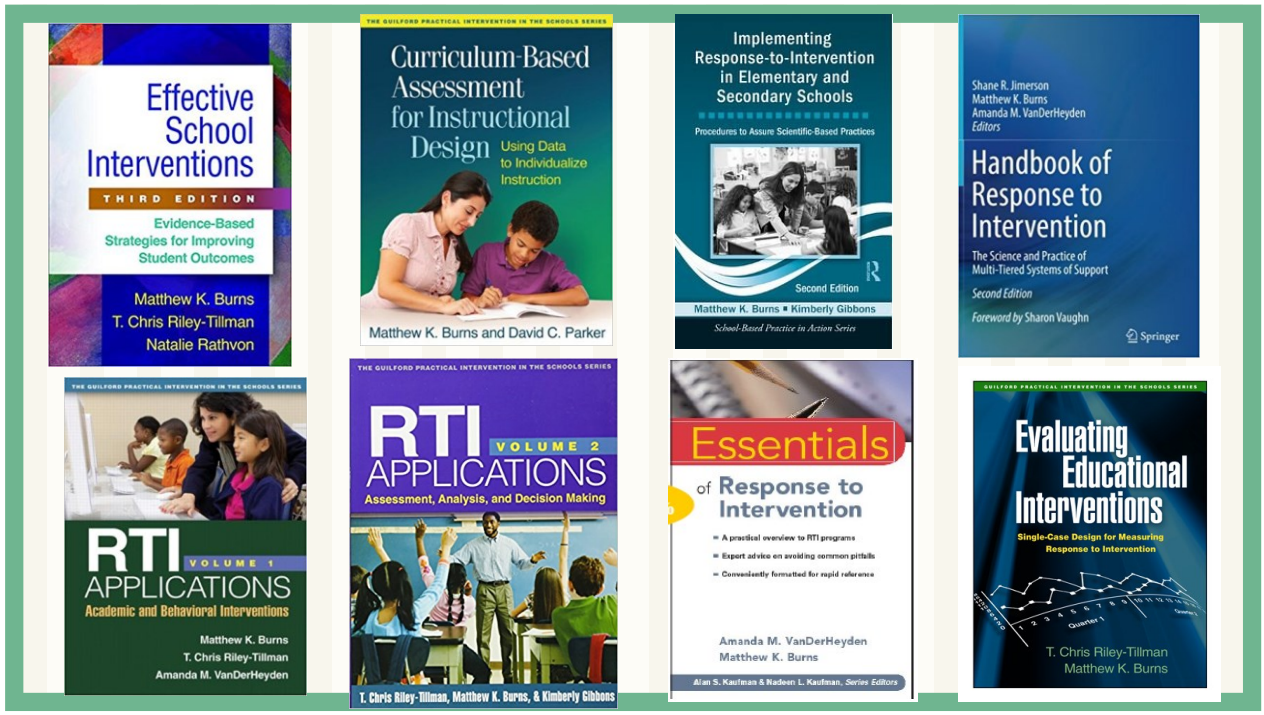

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Thanks!

Any questions?

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