

Using Data to Target Tier 2 and Tier 3 Reading Interventions

Matthew Burns, Ph.D.



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Interventions for Children with LD

Reading comprehension	1.13
Direct instruction	.84
Psycholinguistic training	.39
Modality instruction	.15
Diet	.12
Perceptual training	.08

Kavale & Forness, 2000

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The answer??

Education that is special

Unique learning needs

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RTI

The systematic use of assessment data to most efficiently allocate resources in order to enhance learning for all students.

Burns & VanDerHeyden, 2006

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Multi-Tiered Academic Interventions (Burns, Jimerson, & Deno, 2007)

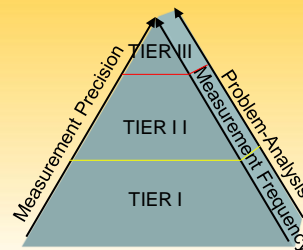
Tier I: Universal screening and progress monitoring with quality core curriculum: All students,

Tier II: Standardized interventions with small groups in general education: 15% to 20% of students at any time

Tier III: Individualized interventions with in-depth problem analysis in general education : 5% of students at any time

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RTI and Problem-Solving



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Problem Solving

- Tier I – Identify discrepancy between expectation and performance for class or individual (**Is it a classwide problem?**)
- Tier II – Identify discrepancy for individual. Identify category of problem. (**What is the category of the problem?**)
- Tier III – Identify discrepancy for individual. Identify causal variable. (**What is the causal variable?**)

National Reading Panel

- Is phonemic awareness instruction effective in helping children learn to read?
- Reviewed 52 studies of PA instruction.
- Three general outcomes were explored
 - PA tasks such as phoneme manipulation,
 - spelling,
 - and reading tasks such as word reading, pseudoword reading, reading comprehension, oral text reading, reading speed, time to reach a criterion of learning, and miscues

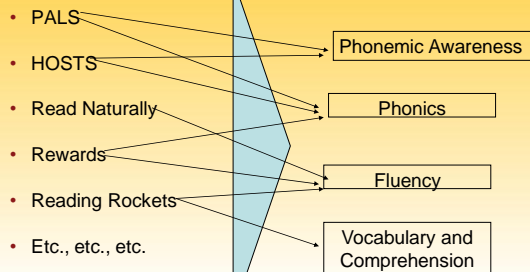
National Reading Panel Results

- PA instruction demonstrated better efficacy over alternative instruction models or no instruction
- Improved PA measures (strong), reading ($d = .53$) and spelling skills
- Teaching one or two PA skills was preferable to teaching three or more
- PA instruction benefited reading comprehension (Ehri et al.).

Means and Ranges of Effect Sizes by Reading Outcome Measure

	N	Mean ES	SD	Minimum	Maximum
Pseudowords	24	.84	.80	-.19	3.60
Words in Isolation	48	.92	.89	-.05	4.33
Contextual Reading	24	.37	.38	-.37	1.18

Tier II Interventions



National Reading Panel

Phonemic Awareness



Phonics



Fluency



Vocabulary

Berninger et al., 2006



Comprehension

Assess 4 NRP Areas

- Phonemic Awareness
 - Phoneme segmentation fluency
- Phonics
 - Nonsense word fluency (WJ Pseudoword)
- Fluency
 - Oral reading fluency (TOSCRF)
- Vocabulary/Comprehension

Category of Problem MN HS

- 9-12 with approximately 1600 students
- 69.2% pass reading
- 9th-10th grade
- 28% low on MAP (~225)
- 45% Low on TOSCRF (~100)
 - 64% low on phonics (~65)
 - 36% acceptable phonics (~36)

Groups

- Randomly assigned to two groups
 - Read 180
 - Targeted (phonics – REWARDS, fluency – Read Naturally, comprehension – Read 180)
- Wait list control group
- 20 minutes each day for 13 weeks in addition to reading and study skills

Variable	Targeted Interventions		Control		Waitlist Control	
	Mean	SD	Mean	SD	Mean	SD
Fluency Pretest	90.17	7.65	89.88	9.73	na	na
Fluency Posttest	98.33	7.27	94.32	8.77	na	Na
First Maze	19.52	4.20	20.00	8.99	na	na
Last Maze	27.10	5.98	27.33	10.54	na	na
Maze Growth	.84	.60	.54	.97	na	Na
MAP Fall	206.00	9.25	211.00	10.11	210.37	6.56
Map Winter	217.21	7.56	212.40	8.06	212.78	6.04

ANCOVA for fluency $F(1, 42) = 4.98, p < .05, d = .50$

ANCOVA for Maze slope $F(1, 44) = 1.04, p = .31, d = .32$.

ANCOVA for MAP $F(2, 74) = 5.84, p < .05, \text{partial } \eta^2 = .14$.

Florida Center for Reading Research

www.fcrr.org

- Click – For Teachers
- Click – Interventions for Struggling Readers
- Click – Supplemental and Intervention Programs

<http://www.fcrr.org/FCRRReports/CRReportsCS.aspx?rep=supp>

Tier III

Intensive Problem Analysis

Meta-analytic Research for Reading Interventions

❖ Auditory Reception	.21
❖ Auditory Association	.44
❖ Visual Reception	.21
❖ Visual Association	.39
❖ Auditory Sequential Memory	.32
❖ Visual Sequential Memory	.27
❖ Psycholinguistic training	.39
❖ Modality instruction	.15
❖ Perceptual training	.08

Kavale 2001, Kavale & Forness, 1999



Meta-analytic Research for Reading Interventions

➤ Formative evaluation	.71
➤ Fuchs & Fuchs (1986)	
➤ Direct instruction	.84
➤ Explicit reading comprehension instruction	1.13
➤ Kavale & Forness (2000)	

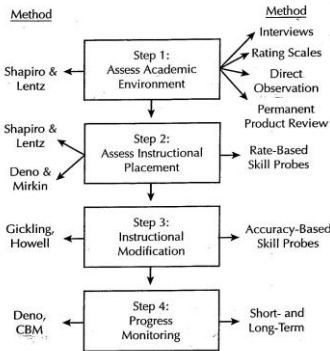


FIGURE 1.1. Integrated model of curriculum-based assessment. Adapted from Shapiro (1990, p. 331). Copyright 1990 by the National Association of School Psychologists. Adapted by permission of the author.



Instructional Modification for Tier 3



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.



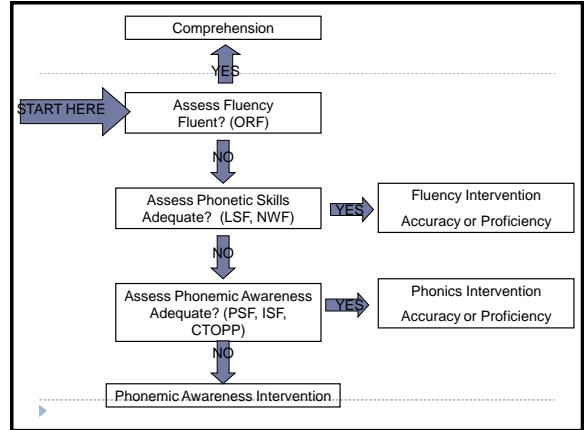
Accuracy

- Contextual Reading
 - 93% - 97% known material
- Everything Else
 - 90% known

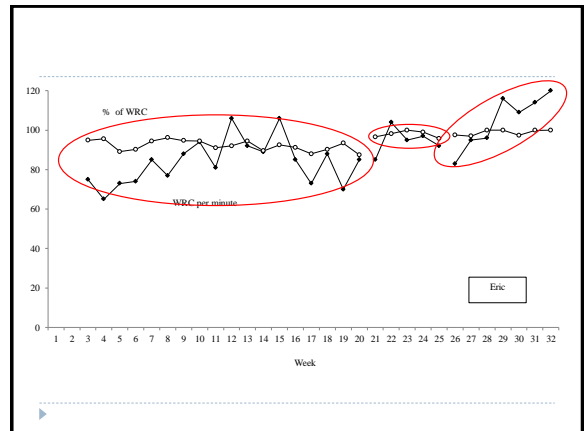
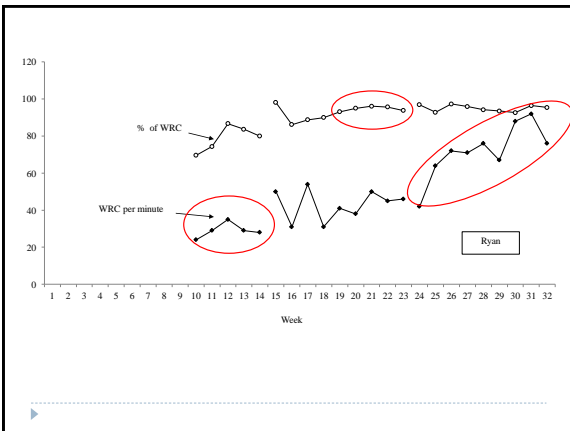
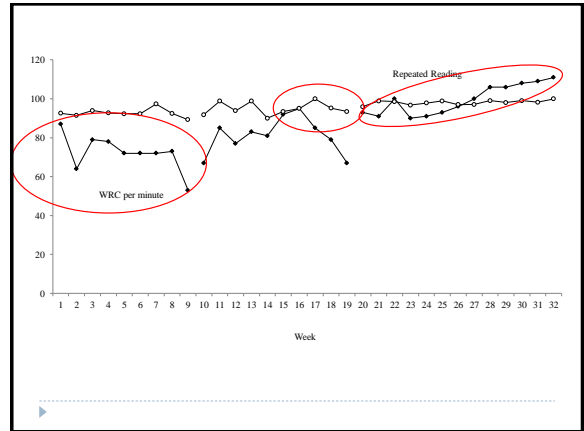


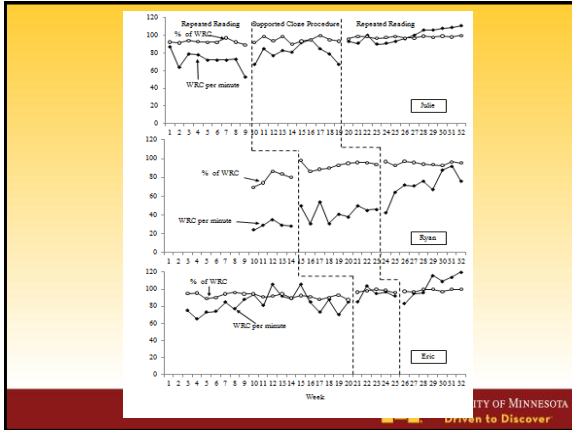
Rate

- Once a student is accurate, the main concern is proficiency which is measured by rate
 - Rate is commonly measured by schools
 - e.g., CBM
- Rate cut points are often based on normative expectations for the skill of concern
- Rate is also an indicator of when a student moves from the proficiency to the generalization stage



Learning Hierarchy	Phonemic Awareness	Phonics	Fluency
Acquisition	Explicit instruction in blending and segmenting (Blackman et al., 2001)	Incremental Rehearsal with letter sounds (Tucker, 1989) Explicit instruction in letter sounds (Carnine et al., 2004)	Incremental Rehearsal for words (Burns, 2007) Listening passage preview (Rose & Sherry, 1984) Supported Cloze Reading (Rasinksi, 2003) Phrase drill (O'Shea, Munson, & O'Shea, 1984)
Proficiency	Language & Listening (Adams et al., 1998)	Word boxes & word sorts (Joseph, 2000)	Repeated reading (Moyer, 1982) Read Naturally
Generalization	Discrimination and differentiation training		
Adaption	Problem-solving activities and simulations		





Peter

- Second Grade
- NWEA test this fall, he scored at the 4th percentile for reading
- Reading fluency score was 13 WRC/M
 - Well below average range.
- Participates in Read Naturally, (where he is placed at grade level 1.0)

Peter

- ORF: 13 wcm with 60% accuracy
- Phonics:
 - NWF: 24 sounds/minute with 67% known
 - 2nd grade rate cut score is 30 words/min
- Phonemic Awareness
 - PSF: 38 with 93% accuracy
 - Cut score is 35 sounds/min

3rd grade male

Median fluency score was 30 words/minute with between 68% and 72% correct (below 10th percentile)

Nonsense word fluency = 65 sounds (50 is established) correct/minute with 94% accurate

3rd grade male

Scored below the 5th in reading

38 words/minute on grade level texts with 83.5% known

Nonsense word fluency = 62 correct sounds per minute with 91% accuracy. (50 is established)

Column Header	Cat	Plate	Bait
First row modeled for student	Hat	Fate	Train
Student competes remaining items independently	Bat	Cake	Afraid
	Mat	Late	Paint
	Flat	Debate	Rain
	Splat	Rake	Wait

<http://usm.maine.edu/sehd/future/>





burns258@umn.edu

