

Methods for Increasing the Intensity of Reading Instruction for Students with Intellectual Disabilities

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Overview of Presentation

- Overview of Overall Research Project and Recent Findings
- Strategies for Increasing Intensity
 - *Everything but the kitchen sink...*
 - Key Factors
 - Word and Sentence Level Strategies
 - Book Level Strategies

Overview of Project Maximize:

Project Staff

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Overview of Project Maximize: Purpose

Determine if a ***comprehensive***, phonics-based, direct instruction ***reading program*** would be effective in teaching early reading and language skills to ***students with IQs ranging from 40-79***

Overview of Project Maximize: Design

- Longitudinal – 4 years (05-06 through 08-09)
- Random assignment to intervention or contrast group
 - Within school
 - Within IQ range (40-54; 55-69; 70-79)
- Students in Grades 1-4 when they began the study

Participants in 08-09 (last year)

<i>note: 186 different students participated at least one year; 3rd -6th grade in 08-09</i>	Treatment	Contrast
Borderline IQ (70-79*) *WASI or school testing	$n = 18$	$n = 16$
Mild IQ (55-69)	$n = 18$	$n = 15$
Moderate IQ (40-54)	$n = 18$	$n = 11$
TOTAL	$n = 56$	$n = 42$

Literature Review: Reading and Intellectual Disabilities (ID)

- Minimal amount of research
- Focused on mild ID, not moderate ID
- Focused on isolated subskills
 - Even students with moderate to severe levels of ID can learn to automatically recognize a fairly large number of words (sight words)
 - Phonics research is promising

*Browder, Wakeman, Spooner, Ahlgrim-DeLzell, & Algozzine, 2006;
Conners, Rosenquist, Sligh, Atwell, & Kiser, 2006*

Literature Review: Reading and Intellectual Disabilities (ID)

No research has been conducted to determine whether students with ID can learn to read by **fully processing the print and meaning** of connected text, as is consistent with current theories of reading development

Findings and Manuscripts

- Working on Final Data Analyses
- Allor, J.H., Mathes, P.G., Champlin, T., & Cheatham, J.P. (2009). Research-based techniques for teaching early reading skills to students with intellectual disabilities. *Education and Training in Developmental Disabilities, 44*, 356-366.
- Allor, J.H., Mathes, P.G., Jones, F.G., Champlin, T., & Cheatham, J.P. (2010). Individualized research-based reading instruction for students with intellectual disabilities. *TEACHING Exceptional Children, 42*, 6-12
- (year 2) Allor, J.H., Mathes, P.G., Roberts, K.R., Jones, F.G., & Champlin, T. (in press). Teaching students with moderate intellectual disabilities to read: An experimental examination of a comprehensive reading intervention. *Education and Training in Developmental Disabilities*.
- (year 3) Allor, J.H., Mathes, P.G., Roberts, J.K., Cheatham, J., & Champlin, T. (in press). Comprehensive reading instruction for students with intellectual disabilities: Findings from the first three years of a longitudinal study. *Psychology in the Schools*.

Research Questions:

Year 3, Psychology in the Schools

Do students with IQs between 40 and 69...

1. ...make significant progress on a variety of standardized measures of reading-related variables?
2. ...who participate in a comprehensive reading intervention outperform similar peers receiving typical special education instruction?

Design and Participants

- Longitudinal – 2 to 3 academic years (05-06 through 07-08)
- *Random assignment* to *intervention* or *contrast* group, within each of the 10 schools
- IQs ranged from 40-69
- treatment, $n = 34$; contrast, $n = 25$
- Intervention ranged from 46 to 106 weeks (mean = 79.54; $SD = 15.37$)

Intervention: Components

- Early Interventions in Reading (EIR)
 - Explicit, systematic and comprehensive
 - Foundation, Level 1*, Level 2*
 - *published by SRA/McGraw-Hill
- Supplemental language instruction
- Supplemental home-school connection materials
- Instructional Sessions
 - Daily by research teachers for 40-50 minutes
 - Taught in groups of 1-4

Overview of Instructional Strands Content

	Foundation	Level 1 ^{ab}	Level 2 ^b
Phonological Awareness	Phonological Awareness	Phonemic Blending Phonemic Segmenting	
Word Recognition/ Phonics	Letter Names	Letter-Sound Correspondences Sounding Out Strategy	"Tricky" Words (Irregular) Flexible Decoding "Stretch and Spell" (links PA segmentation to print) Syllable Types
Vocabulary	Common "Tier I" Words Linked to Text	"Tier II" Words – Direct Instruction; Linked to Text	"Tier III" Words – Expository/Narrative
Fluency	Cumulative Review of Word Recognition Skills	Word-Level Fluency Passage Fluency	
Comprehension	Listening Comprehension	Simple Strategies	More Complex Strategies

^aLevel 1 supplemented with additional Language Component

^bPublished by SRA

Measures by Construct

■ **Phonological Awareness**

- CTOPP subtests (untimed)
- DIBELS Phoneme Segmentation Fluency (timed)

■ **Phonemic Decoding**

- DIBELS Nonsense Word Fluency (timed)
- TOWRE Phonemic Decoding (timed)
- WLPB Word Attack (untimed)

■ **Word Identification**

- TOWRE Word Reading Efficiency (timed)
- WLPB Word Identification (untimed)

Measures by Construct (cont.)

■ **Comprehension**

- WLPB Passage Comprehension (untimed)

■ **Language**

- WLPB Language Subtests
- PPVT (untimed)
- EVT (untimed)

Question 1: Do students with IQs between 40 and 69 make significant progress on a variety of standardized measures of reading-related variables?

- On average, participants made educationally meaningful, statistically significant progress on standardized measures of reading and language after 2-3 years of instruction
- Caveats
 - High variability
 - Some students did not show gains on standardized measures, but did show gains on progress monitoring measures

Question 2: Do students with IQs between 40 and 69 who participate in a comprehensive reading intervention outperform similar peers receiving typical special education instruction?

- Statistically significant differences on phonemic awareness, phonemic decoding (word attack, NWF), oral reading fluency
- Effective sizes moderate to high on word recognition, vocabulary, listening comprehension
- No measurable difference on reading comprehension

Limitations

- Performance among students highly variable
- Though relatively large sample size for population, it is a relatively small sample size for the statistical methods
- Intervention was complex and comprehensive, making it difficult to determine which parts were causing positive effects
- Large number of measures required to assess outcomes, but increases probability of Type I error

In 2-3 years of intensive instruction, how much did students learn?

- Predicted value of score of “average” child after 105 weeks of instruction (approximately 3 school years)
 - PSF(segments per minute) 34.5 treatment; 17.83 contrast
 - NWF (sounds per minute) 55.49 treatment; 32.73 contrast
 - ORF (words per minute) 44.30 treatment; 26.69 contrast
- Predicted scores based on hierarchical linear modeling

Conclusions of Study

- Support for use of scientifically-based reading instruction for students with low IQs (ID range)
- IF Individualized and with high degrees of fidelity
- IF provided intensive, comprehensive instruction over an extended period of time

Key Factors in Increasing Intensity

- **Intense**

- repeated practice across the day and across days

- **Appropriate**

- practice of key skills at appropriate difficulty level (high degrees of accuracy)

- **Motivating**

- Set goals to increase self-determination and develop an internal locus of control
- Track amount of practice AND progress
- Change rewards frequently

- **Meaningful** (link to meaning as much as possible, but quickly)

Teacher's Role

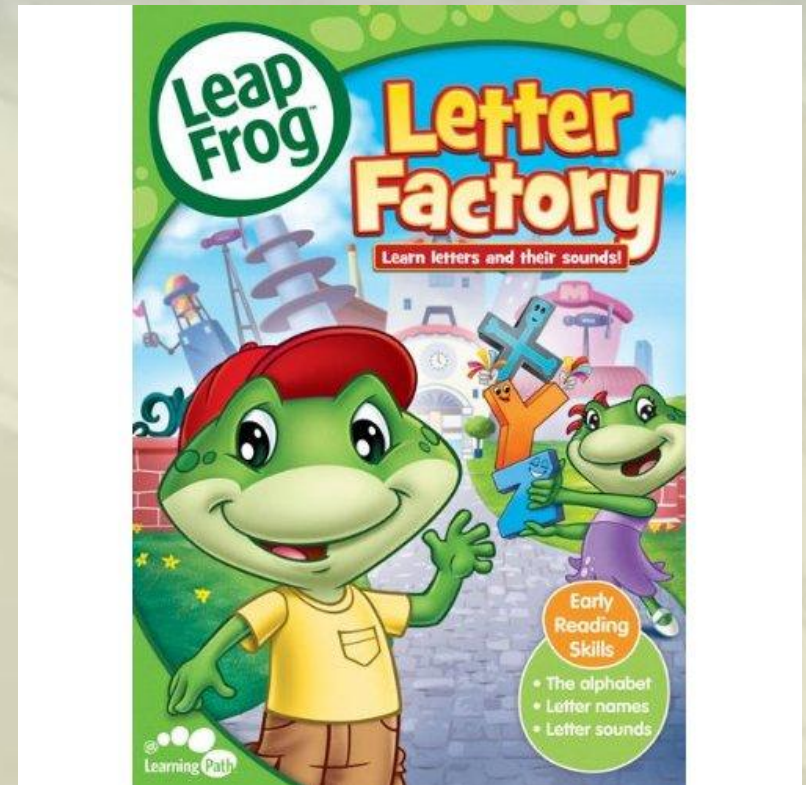
- ***Plan*** and ***monitor*** intense, appropriate, motivating, and meaningful practice
- Practice during instruction is implemented by teacher
- Practice outside instruction
 - Independent
 - Families
 - Peers
 - Paraprofessionals
 - Still planned and monitored by teacher

Increasing Intensity During Lessons

- Maintain a fast-pace
- Use incentives to manage behavior and increase time on task
- Tailor lessons to individual students/groups
 - Spend less time on clearly mastered skills and more time on challenging skills
 - Ex. Some of our students were doing great on letter-sound correspondences, but still struggling with phonemic awareness. Therefore, we reduced time spent on letter-sound correspondences, just reviewing briefly in each lesson or skipping that activity on some days

Use Technology Wisely

- Remember key factors
- *Letter Factory* Video
- Websites
 - Usually need support
 - Quality varies
- Etc.



Utilize existing resources

- Use activities and materials from curriculum other than your primary curriculum
- Remember Key Factors

Word Level Strategies

- High-Frequency Word Practice
 - Irregular (ex. was)
 - Regular (ex. can, did, had – Fry Word List)
 - Practice small sets of words in a variety of ways (example activities to follow)
 - Cumulative
 - Apply taught skills
 - Sound out words made up of taught letter patterns
 - Be sure the word follows the rules (*ai* as in *paid*, not *said*)

Activities for Word Level

- Puzzles
- Card Games
 - Old Maid
 - Concentration
 - Go Fish

Word Search

Read the sentence and choose the correct word to fit in the blank. Find your answer in the word search!

1. My _____ is red where I bumped it.

leg

log

2. I have ten ducks, six _____, and one dog .

fins

fish

3. The bird _____ on his hand.



lasted

landed

4. Ed _____ his hat in the van.

lasted

left

5. Ken and Jim _____ the bent step.

fixed

filled

Word Search

1	a	h	l	e	g	y	u
2	b	e	f	i	s	h	v
3	g	l	a	n	d	e	d
4	h	a	l	e	f	t	v
5	a	f	i	x	e	d	j



Sentence Level

- Practice words in sentences in a variety of ways
 - Arrange words to create sentences (video on next slide)
 - Read sentences and match to pictures
 - Fill in the blank sentences

Video

- Jacob
- IQ in low 50s
- Williams' Syndrome
- Video from 3rd year in our intervention
- At that point, he was in early to mid first-grade level
- During 4th year began to unitize words
- By the end of the study was reading approximately 30 words per minute



Increasing Intensity at the Text

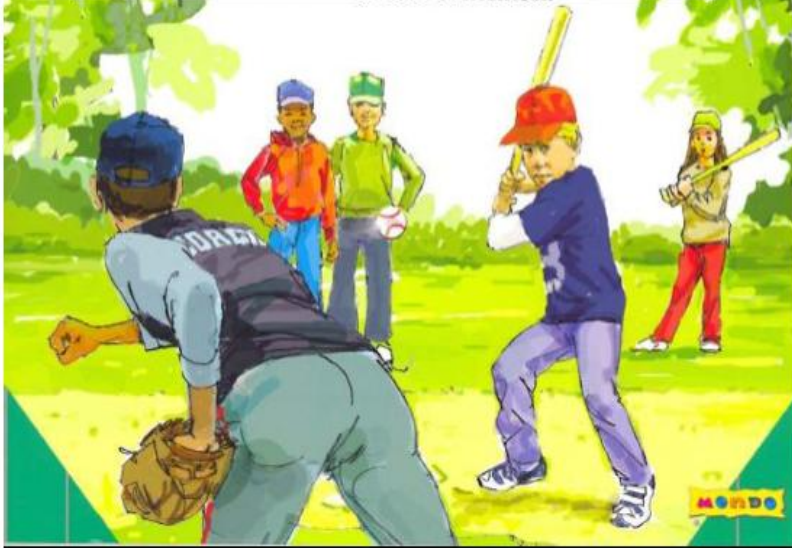
Level

- Independent
- Families, peers, paraprofessionals
- Selecting appropriate text
 - Instructional Level = 90-95% accuracy
 - <http://www.lexile.com/findabook/>
 - <http://www.readinga-z.com/>
- Motivating
 - Incentive programs
 - Tracking progress
 - Connect to ORF goals
- Meaningful

Increasing Intensity at the Text Level: Application Lessons

- Prepare students for text with “application” lessons that teach them to transfer skills learned during instruction in primary curriculum to specific texts
- Application Lessons are key activities from core curriculum using exact words in books students are being taught to read
- Lessons use exact wording of strategies from curriculum

UP AT BAT



By Joanna Guinther

Illustrated by Dick Smolinski

Adapted by Jill Allor



Crack! The bat hits the ball .

"I did it! I did it!" said Sam. "I hit the ball."

"Look at the ball!" said Tom. "Look at the ball go up ,
up, up!"

Where will the ball go ?

Activity G

hit	with	will
Sam	land	fun
can	hits	bat
not	fast	
Tom	did	

Activity B

look	said
do	want
I	looks
the	want
you	to

Activity F1.1

Will Sam hit the ball?



Bam! Sam hits the ball.



And back to word level...

- Identify words to practice from text
- Error analysis chart

Word in Text	Student said...
sat	sit
slip	--
sport	spot

- Arrows (post-it flags)
 - Students use these to mark “new” words (words they struggle to figure out)
- Practice these words and similar words

Project Maximize

- For further information:
www.smu.edu/Maximize

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