Interventions for Students with Reading Disabilities: Requirements at the School and Classroom Level

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“Overcoming Dyslexia, Springfield, Mass, April, 2006"
A central problem in reading instruction arises, not from the absolute level of children’s preparation for learning to read, but from the diversity in their levels of preparation.

(Olson, 1998)
What are the most important ways children are diverse—when it comes to learning to read?

1. They are diverse in their talent and their preparation for learning to read words accurately and fluently.
“Phonological talent” is normally distributed in the population.

Children can be strong in this talent-like my grandson Andrew.
“Phonological ability” is normally distributed in the population.

Children can be moderately weak in this talent-like David.

Percentile Ranks

Standard Scores

- 2nd
- 16th
- 50th
- 84th
- 98th
- 2nd
- 16th
- 50th
- 84th
- 98th

Children can be moderately weak in this talent-like David.
Each of these kinds of weakness is normally distributed in the population.

Serious difficulties—probably require special interventions and a lot of extra support—like Alexis.
What are the most important ways children are diverse when it comes to learning to read?

1. They are diverse in their talent and their preparation for learning to read words accurately and fluently.

2. They are diverse in their oral language knowledge and abilities—vocabulary and world knowledge.

3. They are diverse in their abilities to manage their learning behaviors and their motivation to apply themselves to learning to read.
The challenge of diversity in talent and preparation for learning to read

Diversity in talent and preparation

1

Diversity of educational response

30

Alexis  David  Andrew

100

70
The challenge of diversity in talent and preparation for learning to read

Diversity in talent and preparation

Diversity of educational response

Interventions and differentiated instruction in the classroom
What are the key ingredients at the classroom and school level needed to prevent reading difficulties in young children?
A model for preventing reading failure in grades K-3: The big Ideas

1. Increase the quality, consistency, and reach of instruction in every K-3 classroom

2. Conduct timely and valid assessments of reading growth to identify struggling readers

3. Provide more intensive interventions to “catch up” the struggling readers

The prevention of reading difficulties is a school-level challenge
The continuum of instructional power within the model for preventing reading failure

1. Increase the quality, consistency, and reach of instruction in every K-3 classroom

   If lots of students in the school are at risk, the first level of intervention is spending more time and improving quality of initial instruction—everyone gets this—

   90 minute block is an intervention

   120 minute block is a stronger intervention

   The intervention continuum begins with differentiated instruction offered by the classroom teacher during the 90 minute block
A common structure for the total time spent teaching reading

Initial, systematic, explicit instruction in essential skills and knowledge – 30-60 minutes

To the extent time for this is increased, and instruction is more powerful, it is an “intervention for the whole group”

Differentiated instruction in small groups targeted to the needs of individual students – 60-90 minutes

This is the beginning of intervention continuum (time and focus and power) based on individual student need
Classroom organization should be related to teaching objectives
Classroom Organization: Learning Centers for differentiated groups

- **Teacher-Led Center**
  - Small group instruction
    - Teaching “on purpose”
    - Careful observation of individual students
    - Addresses particular individual needs
    - Opportunities for responsive scaffolding

- **Student Centers**
  - Academically engaged
  - Accountability
  - Group, Pair, Cooperative, Individual
Differentiated instruction in small groups
Classroom Organization: Learning Centers for differentiated groups

Points of vulnerability with this system

Students waste time at independent learning centers because they are not engaged and centers are not focused and leveled properly
Effective independent student learning activities...
Classroom Organization: Learning Centers for differentiated groups

Points of vulnerability with this system

Students waste time at independent learning centers because they are not engaged and centers are not focused and leveled properly

To download up to 240 independent student learning activities for K-1 classrooms, go to
http://www.fcrr.org/activities/

Can also download instructions on classroom management during small group instruction, and soon, up to 70 minutes of video training
### Phonological Awareness

**Part One**
- Rhyme
- Alliteration

**Part Three**
- Phonemes

**Part Two**
- Sentence Segmentation
- Syllables
- Onset and Rime

### Phonics

**Part One**
- Letter Recognition

**Part Three**
- Onset and Rime

**Part Five**
- Syllable Patterns
- Morpheme Structures

**Part Two**
- Letter-Sound Correspondence

**Part Four**
- Word Study

### Fluency

**All Parts**
- Letter Recognition
- Letter-Sound Correspondence

- High Frequency Words
- Oral Reading

### Vocabulary

**All Parts**
- Word Identification/Words in Context
- Word Categorization/Word Knowledge

- Words That Describe/Word Meaning
- Word Structure/Word Analysis
Objective
The student will sort sounds of letters in words.

Materials
- Word cards (Activity Master P063.AM1a - P063.AM1f)
  - May glue to tongue depressors or popsicle sticks.
- Containers (e.g., cups)
  - Label the containers (e.g., use markers, construction paper taped on, sticky labels).
- Paper
- Pencil

Activity
Students will sort words based on letter-sound combinations into containers.
1. Place containers and word cards on the table.
2. Taking turns, students match the vowel sound in the word to the vowel on the container.
3. Place the word in the matching container.
4. List words by vowel sounds.
5. Teacher evaluation

Extensions and Adaptations
- Use different words containing variant correspondences.
Phonics
Vowel Closed Sort

/ə/ /ā/

ant   ax
apron   able
acre   and
after   April
apple   agent
<table>
<thead>
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<tr>
<td>end</td>
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Classroom Organization: Learning Centers for differentiated groups

Points of vulnerability with this system

Students waste time at independent learning centers because they are not engaged and centers are not focused and leveled properly.

Behavior management issues interfere with teacher-led small group instruction.

Small group instruction is not really differentiated (time, frequency, focus) by student need.
A mistake we often make in education is to plan the curriculum materials very carefully, arrange all the instructional materials wall to wall, open the doors of the school, and then find to our dismay that they’ve sent us the wrong kids.
1. Increase the quality, consistency, and reach of instruction in every K-3 classroom

We have a long way to go to improve the quality of differentiated instruction and support

Instruction should be differentiated to meet the needs of individual students in at least four ways

- **Frequency of meeting in small groups** – every day, three times per week, etc.
- **Size of instructional group** – 3 students, 6 students, 8 students, etc.
- **Focus of instruction** – work in phonemic awareness in phonics, work in fluency and comprehension, etc.
- **Lesson format** – guided reading vs. skills focused lessons
1. Increase the quality, consistency, and reach of instruction in every K-3 classroom

Guided Reading Lesson Structure

**Purpose:** to allow students to integrate their new acquired skills and knowledge while reading text for meaning

“Guided Reading is a context in which a teacher supports each reader’s development of effective strategies for processing novel texts at increasingly challenging levels of difficulty” (Fountas & Pinnell, 1996, p. 3).

- Selecting the text
- Introducing the text
- Reading the text
- Discussing the text
- Teaching for strategic activities
- Extending meaning (optional)
- Word Work (optional)
1. Increase the quality, consistency, and reach of instruction in every K-3 classroom

Guided Reading Lesson Structure

The *Guided Reading* lesson structure provides teachers the opportunities to monitor how well students are applying skills to reading of text, encourage and support application of skills during text reading (e.g., word level skills and comprehension skills), engage students in thinking about the meaning of text, and build a sense of reading as a meaningful, enjoyable activity.
1. Increase the quality, consistency, and reach of instruction in every K-3 classroom

**Guided Reading Lesson Structure**

Limitations for students still acquiring initial skills

- Does not support systematic instruction and practice on foundational knowledge and skills
- Does not provide enough opportunities for mastery oriented practice on foundational skills
- Does not provide a good structure for systematic review required by struggling readers
- Often, the leveled books used in guided reading lessons do not provide good practice on early phonemic decoding skills
1. Increase the quality, consistency, and reach of instruction in every K-3 classroom

**The Skills focused lesson format**

**Purpose:** to provide explicit and systematic instruction, as well as extended and focused practice on specific skills and knowledge for students who need this before attempting to integrate these skills in a guided reading lesson. To provide more focused instruction and practice than is possible within a guided reading format.
1. Increase the quality, consistency, and reach of instruction in every K-3 classroom

The skills focused lesson format:

These lessons could draw upon lesson formats and content from the core reading program to reinforce knowledge and skill that was only weakly learned when it was taught in the whole group format. Could also use materials from supplemental or intervention programs.

Many students will need explicit re-teaching of both knowledge elements and skills, as well as extended opportunities to practice the application of these skills in a variety of contexts ranging from individual words, to phrases, to sentences, to connected text. Skills-Focused Lessons will be successful to the extent that they are fast-paced, interactive, and targeted appropriately on critical skills for each reading group.
An example of how this might work in a first grade classroom

**Group 1** meets every day – 4 students

**Focus** – phonemic awareness, phonics, and word reading

**Activities** – explicit letter-sound instruction and practice for fluency, explicit phonemic awareness toward segmenting 3 phoneme words, blending practice, sight word practice for fluency, word meanings emphasized

**Group 2** meets every day – 4 students

**Focus** – phonemic awareness, phonics, and word and sentence reading

**Activities** – segmenting 3 and 4 phoneme words, extended word work, work with high frequency words, supported sentence reading and discussion
An example of how this might work in a first grade classroom

Group 3 meets 3 times per week – 6 students

Focus – phonics and paragraph reading

Activities – continued explicit word work to build confidence and fluency in decoding, practice reading decodable text, support for meaning, move to paragraph reading and interpretation-emphasizing word meanings

Group 4 meets 2 times per week – 6 students

Focus – phonics, reading comprehension, and vocabulary

Activities – guided reading lesson format, with explicit word work on advanced phonemic decoding strategies
Making Sense of Phonics
Isabel Beck
Guilford Press
19.95 at Amazon.Com
A model for preventing reading failure in grades K-3: The big Ideas

1. Increase the quality, consistency, and reach of instruction in every K-3 classroom

2. Conduct timely and valid assessments of reading growth to identify struggling readers

3. Provide more intensive interventions to “catch up” the struggling readers

The prevention of reading difficulties is a school-level challenge
Screening or Progress monitoring assessment in 2nd Grade

Correct words per minute

- Sept
- Dec
- Feb
- May

Expected Progress

- 32
- 48
- 64
- 96
Tier II Intervention

- Tier II is almost always given in small groups.
- Tier II should always increase the intensity of instruction.
The Logic of Instructional Intensity

If a child performs below grade level targets on a screening or progress monitoring measure, they are already substantially behind in required development.

To achieve the grade level standard by the end of the year, these students must learn critical skills faster than their grade level classmates.
Screening or Progress monitoring assessment

Correct words per minute

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--- | --- | --- | ---
16   | 32  | 64  | 96

Expected Progress
The Logic of Instructional Intensity

If a child performs below grade level targets on a screening or progress monitoring measure, they are already substantially behind in required development.

To achieve the grade level standard by the end of the year, these students must learn critical skills faster than their grade level classmates.

The most direct way to increase learning rate is by increasing the number of positive, or successful, instructional interactions (pii) per school day.
What is a Positive Instructional Interaction (Pii)

Teacher explains a concept clearly at the right level, and the child is actually attending-processing the information.

Teacher models a correct response and the child attends to the model.

Teacher corrects students error in a way that increases the chance for the student to respond correctly the next time.

Teacher reinforces a correct response in way that increases probability child will respond correctly on future occasions.
The Goal of Increased Instructional Intensity

“School based preventive efforts should be engineered to maintain growth in critical word reading skills at roughly normal levels throughout the elementary school period”

(Torgesen, 1998)
There are serious consequences that follow from getting a slow start in learning to read…. 

Poor readers get less reading practice from the beginning of first grade

Mean words read by each child in reading sessions at three points in the year

Biemiller, 1977-78
TIER II Interventions

Tier II is almost always given in small groups.

Tier II should always increase the intensity of instruction.

Tier II must be precisely targeted at the right level on student’s most critical learning needs.

Tier II must increase the explicitness of instruction.
Explicit Instruction

- Nothing is left to chance; all skills are taught directly.
- Student practice activities are carefully guided with “instructive” error correction.
- Practice activities are carefully engineered to produce mastery.
- Development of critical skills is carefully monitored—instruction is focused on mastery.
An Example of an Effective Intervention
Design of Study

1. Most “at risk” first graders from five elementary school—PPVT above 70

2. Instruction provided in 45 min. sessions every day from October through May in groups of 3 or 5 by experienced teachers or well-trained paraprofessionals

3. Used a structured (scripted) reading program that contained instruction and practice in phonemic awareness, phonics, fluency, and comprehension

4. Used a number of methods to achieve fidelity of implementation
   - 3 days of initial training
   - Weekly supervisory visits
   - Monthly inservice (3 hours)
Work on phonemic awareness
Blending sounds into words
Directly building sight recognition of high utility words
Comprehension-story grammar...
Two types of scaffolding....
Programmatic Scaffolding

Instructional sequences organized so that students have the knowledge and skills they need to respond before they are asked to respond

Micro level within lessons
- Modeling of correct responses
- Complete and clear explanations

Embedded in the instructional sequence
- Oral blending skills before blending printed words
- Awareness of phonemes before learning how they are represented in print
- Grapheme-phoneme knowledge before decoding
Responsive Scaffolding

Teacher follows an error with a question or comment that directs the child to do the thinking necessary to correct the response – a Pii

On video
Teacher notices error – stretches word “slim”
Asks question—what’s the last sound you hear in slim?
Child responds -- /m/
Teacher asks, pointing to spelling, “does that match?”
Two types of scaffolding....
Growth in Word Reading Ability

Growth in word reading ability is shown across different months and national percentiles. The data indicates an increase in reading ability from October to May, with a notable rise in May. The percentile distribution spans from the 25th to the 75th percentile, with a significant concentration around the 50th percentile.
Growth in Correct Words Per Minute on First Grade Level Passages

Comprehension on SAT9 = 50th percentile
Tier II interventions across the grade levels

Kindergarten – 20 minutes, small group, push in

First grade – 30-45 minutes, small group, push in or additional instruction outside the block
One important way to enhance the power of instruction during the 90 minute block is to have some of the small group instruction provided by another teacher or paraprofessional.
Tier II interventions across the grade levels

Kindergarten – 20 minutes, small group, push in

First grade – 30-45 minutes, small group, push in or additional instruction outside the block

2-3 grades – 30-45 minutes, small group, push in plus another 30-45 minutes outside of reading block

or

2nd and 3rd Grade – an “intervention” core, smaller class for 90 minutes—”walk and read”
Four Second Grade Classes
Intervention teacher

Orderly movement between classes

22 22 22 22

15 24 24

22 22 22 22

25 24 15 24
Possible schedule for a 90 minute intervention class in 2\textsuperscript{nd} and 3\textsuperscript{rd} grade

2 teachers -- 30 minute rotations

Group of 5 – decoding and fluency- low, mid, hi

Group of 5 – fluency, comp, vocab – low, mid, hi

Group of 5 – technology-learning center
As we work to solve this problem, we **will** need to try some new things.

“In an increasingly complex world, sometimes old questions require new answers.”
How can immediate, intensive interventions be scheduled and delivered?

1. Delivered by regular classroom teacher during the “uninterrupted reading period”

2. Delivered by additional resource personnel during the “uninterrupted reading period”, or at other times during day

3. Delivered by classroom and resource personnel during after school or before school programs

4. Delivered by well-trained and supervised paraprofessionals during the “uninterrupted reading period” or other times

5. Delivered by computers throughout the day
TIER III: Intensive intervention

Tier III is intensive, strategic, instruction specifically designed and customized small-group or 1:1 reading instruction that is extended beyond the time allocated for Tier I and Tier II.
What are the critical elements of effective interventions?

Ways that instruction must be made more powerful for students “at-risk” for reading difficulties.

More powerful instruction involves:

- More instructional time
- Smaller instructional groups
- More precisely targeted at right level
- Clearer and more detailed explanations
- More systematic instructional sequences
- More extensive opportunities for guided practice
- More opportunities for error correction and feedback

\[ \text{resources} \]
\[ \text{skill} \]
Another resource for teachers and schools to improve differentiated instruction and interventions:

To find objective, teacher-written reviews of commercially available intervention programs and materials, go to: http://www.fcrr.org/FCRRReports/

About 70 supplemental/intervention program reviews are available
What about interventions for older students?

There are really two problems to address…

1. We have many students with reading disabilities in late elementary, middle and high school right now, who did not receive the benefit of powerful preventive instruction and continue to struggle with basic skills…

2. Many students with reading disabilities need continued support for the development of more advanced reading skills as they encounter increasingly complex text in middle and high school ….
A comprehensive model for reading instruction in late elementary, middle, and high school

1. Intensive Reading Classes for struggling readers—taught by reading specialists

2. More effective instruction in content knowledge and understanding-made accessible for weaker readers

3. Content teachers provide instruction that helps students improve their skills in how to learn from reading—reading strategies

4. Ongoing formative assessments as well as end of year outcome assessments

http://smarttogether.org/clc/index.html
What is currently known about the effects of intensive remedial interventions for older students with serious reading difficulties
Change in Reading Skill for Children with Reading Disabilities who Experience Growth in Reading of .04 Standard Deviations a Year

Hanushek, Cain, & Rivkin, 1998
A study of intensive, highly skilled intervention with 60 children who had severe reading disabilities

Children were between 8 and 10 years of age

Had been receiving special education services for an average of 16 months

Nominated as worst readers: at least 1.5 S.D’s below grade level

Average Word Attack=69, Word Identification=69, Verbal IQ=93

Randomly assigned to two instructional conditions that both taught “phonics” explicitly, but used different procedures with different emphasis

Children in both conditions received 67.5 hours of one-on-one instruction, 2 hours a day for 8 weeks

Children were followed for two years after the intervention was completed
Time x Activity Analyses for the Two Intervention Approaches

<table>
<thead>
<tr>
<th>Activity</th>
<th>LIPS</th>
<th>EP</th>
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<tbody>
<tr>
<td>Phonemic Awareness and Phonemic Decoding</td>
<td>85%</td>
<td>20%</td>
</tr>
<tr>
<td>Sight Word Instruction</td>
<td>10%</td>
<td>30%</td>
</tr>
<tr>
<td>Reading or writing connected text</td>
<td>5%</td>
<td>50%</td>
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Growth in Total Reading Skill Before, During, and Following Intensive Intervention

![Graph showing growth in total reading skill with intervals in months between measurements. The graph compares LIPS and EP across pretest, posttest, and 1 and 2 year follow-ups.](image)
Growth in phonemic decoding during intervention & follow-up

![Graph showing growth in phonemic decoding with data points for Pretest, Posttest, 1 year, and 2 years. The graph includes lines for LIPS and EP with standard scores indicated.](image-url)
Growth in text reading accuracy during intervention & follow-up

<table>
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<th>Pretest</th>
<th>posttest</th>
<th>1 year</th>
<th>2 years</th>
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<tbody>
<tr>
<td>Standard Score</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>90</td>
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</tr>
<tr>
<td>LIPS</td>
<td>EP</td>
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</tbody>
</table>

- LIPS
- EP
Growth in comprehension during intervention & follow-up

- Pretest
- Posttest
- 1 year
- 2 years

Standard Score

LP 
EP 
LIPS 

90
Growth in fluency during intervention & follow-up

- Pretest
- Posttest
- 1 year
- 2 years

Standard Score

LIPS

EP
Oral Reading Fluency was much improved on passages for which level of difficulty remained constant.

Absolute change in rate from pretest to 2-year follow-up.

**Most difficult passage**

Pretest -- 38 WPM, 10 errors

Posttest -- 101 WPM, 2 errors

**Next most difficult passage**

Pretest -- 42 WPM, 6 errors

Posttest -- 104 WPM, 1 error
Disparity in outcomes for rate vs. accuracy in five remediation studies

Beginning level of Word Identification Skill

Standard Score

Accuracy

Rate
These are interesting and challenging times for anyone whose professional responsibilities are related in any way to literacy outcomes among school children. For, in spite of all our new knowledge about reading and reading instruction, there is a widespread concern that public education is not as effective as it should be in teaching all children to read.
The report of the National Research Council pointed out that these concerns about literacy derive not from declining levels of literacy in our schools but rather from recognition that the demands for high levels of literacy are rapidly accelerating in our society.
Projected growth in “sight vocabulary” of normal readers and struggling readers before and after remediation.
Adolescent Literacy: Other interventions for older students

High level decoding and fluency - Rewards

Assumes proficiency in early decoding

Targeted for students who have difficulties reading multisyllable words or who read slowly (60-120 WPM)

Adolescent Literacy: Other interventions for older students

Direct instruction in comprehension

Teachers explicitly explain and model a comprehension strategy

Guided practice with feedback with discussion

Independent practice and review, with further discussion

Teaching students how to think about what they read

“Questioning the Author”

Done with whole classes or in small groups

Done by every subject matter teacher or by specialists

Done consistently throughout the year, not necessarily every day or throughout the entire lesson
The basic purpose of Questioning the Author is to make public the processes of comprehension.

Essential features:

1. It treats text as the product of a fallible author, as "someone’s ideas written down."

Dr. Isabel Beck introducing Questioning...
The basic purpose of Questioning the Author is to make public the processes of comprehension.

**Essential features:**

1. It treats text as the product of a fallible author, as “someone’s ideas written down.”

2. It deals with text through general teacher-posed questions such as “What is the author trying to say?” or “What do you think the author means by that?”
The role of queries in Questioning the Author
The basic purpose of Questioning the Author is to make public the processes of comprehension.

**Essential features:**

1. It treats text as the product of a fallible author, as “someone’s ideas written down.”

2. It deals with text through general teacher-posed questions such as “What is the author trying to say?” or “What do you think the author means by that?”

3. It takes place on-line, in the context of reading as it initially occurs.

4. It encourages discussion in which students are urged to grapple with ideas in the service of constructing meaning.
More teacher techniques in Q the A...
A comprehensive literacy solution for middle and high school

1. Remember that proficiency involves both reading accurately and thinking accurately.

Content area teachers must be part of the solution.

2. Remember the most struggling readers are far behind their peers in many areas.

Reading teachers must teach them basic and advanced reading skills as intensively and skillfully as the school can manage.
A final concluding thought....

There is no question but that providing the right kind of interventions for students with dyslexia is a difficult challenge in most school settings...

It will involve professional development for teachers, school reorganization, careful assessments, and a relentless focus on the individual needs of every child...

But, its not the most difficult thing we could be faced with...
Consider this task for example...
Thank You