Learning Disabilities:
Assessment and Intervention Practices for the Classroom

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Acknowledgments

This presentation is based on the work of several researchers including:

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Group Expectations

Be responsible
- Attend to the “Come back together” signal
- Active participation…Please ask questions

Be Respectful
- Please allow others to listen
  - Please silence all cell phones
  - Please limit sidebar conversations
- Share “air time”
- Please refrain from email and Internet browsing

Be Safe
- Take care of your own needs
Intended Outcomes

• Share research findings related to instruction and interventions for students identified with Specific Learning Disabilities in decoding and comprehension within a Multi-Tiered System of Supports

• To provide participants with effective assessment and instructional practices for students identified with Specific Learning Disabilities
Agenda

1.0 Defining Learning Disability
2.0 How to intensify instruction for students with Learning Disabilities
3.0 Interventions for decoding
4.0 Interventions for reading comprehension
5.0 Assessment and Progress Monitoring
1.0 Defining Learning Disability
IDEA 2004/OSERS Regulations

• Must not require the use of a severe discrepancy between intellectual ability and achievement…

• Must permit the use of a process based on the child’s response to scientific, research-based intervention; and

• May permit the use of other alternative research-based procedures for determining whether a child has a specific LD

OSERS Regulations

• To ensure that underachievement in a child suspected of having a specific learning disability is not due to lack of appropriate instruction in reading or math, the group must consider...

• Data that demonstrate ..the child was provided appropriate instruction in regular education settings delivered by qualified personnel; and

• Data-based documentation of repeated assessments of achievement at reasonable intervals, reflecting...student progress during instruction

Word-Level Reading Disabilities (WLRD)

• Synonymous with “dyslexia” historically described as “word blindness”

• Term “dyslexia” became prominent due to work of Samuel Orton

• Morgan (1896) “a primary and often profound problem in reading and spelling single words in isolation”

Fletcher, Lyon, Fuchs, & Barnes (2019)
Dyslexia Definition

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.

Lyon, Shaywitz, & Shaywitz (2003)
Dyslexia Definition (continued)

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

Lyon, Shaywitz, & Shaywitz (2003)
Prevalence

- Commonly estimated at 3-7%
- Historically, studies have estimated 5-15%
- Higher rates can be misleading given variations in criteria used to identify
- Most common form of LD is word level reading disability or dyslexia: 80-90% of all children served in special education with LD have difficulty with word level skills

Fletcher, Lyon, Fuchs, & Barnes (2019)
Core Cognitive Processes

• Substantial evidence: phonological awareness must develop in order to learn to read words

• “The existing evidence does not support a persistent core deficit in naming speed for readers with dyslexia”

• Phonological (Working) Memory for verbal and/or sound based information not clear due to correlation with phonological awareness

Hulme, Bowyer-Crane, Carrol, Duff, and Snowling (2012); Vukovic & Siegel, (2006)
Neurobiological Factors

• Genetic studies show moderate to high heritability of word-reading skills

• There is a neurobiological substrate underlying WLRD related to readiness of brains to develop the neural network that mediates reading

• This network is malleable and home literacy and instructional environments make a difference

Fletcher, Lyon, Fuchs, & Barnes (2019)
Neurobiological Factors (cont.)

“When the child begins to read, the brain changes in ways that permit mediation of word recognition, illustrating a fundamental form of neural plasticity” (Dehaene, 2009; Wolf, 2007)

Fletcher, Lyons, Fuchs & Barnes (2019)
Two Essential Policy Issues

1. Early intervention and an emphasis on beginning reading through explicit, comprehensive core reading instruction (Tier 1) is essential for preventing dyslexia supplemented with extended time in small group (Tier 2).

2. Students in grade 3 and beyond who do not receive or benefit adequately from early intervention, need intense differentiated instructional approaches (Tier 3). Supplement don’t supplant.

Fletcher, Lyon, Fuchs, Barnes (2019)
Activity 1.2
• With your shoulder partner, review slides 9-16
  • What information is affirming what you already knew?
  • What information is new for you?
2.0 How to Intensify Instruction for Students with Learning Disabilities
Principles of Effective Instruction for Students with LD

1. Instructional explicitness
2. Minimization of the learning challenge
3. Proper terminology
4. Speeded practice
5. Cumulative review
6. Simple and direct language
7. Incorporate self-regulation strategies
8. Comprehensive instructional approaches
9. Extended duration and time on task
10. Progress monitoring

Fletcher, Lyon, Fuchs, Barnes (2019)
1. Instructional Explicitness

• “Instruction that does not leave anything to chance and does not make assumptions about skills and knowledge that children will acquire on their own” (Torgesen, 2004)

• Facilitated by provision of background knowledge and vocabulary, advance organizers, guided and independent practice, corrective feedback and maintenance checks
2. Minimization of the Learning Challenge

- Anticipate and plan instruction to avoid confusion
- Letter sounds:
  - Separate auditorily and/or visually similar letters (e/i, b/d)
  - Introduce continuous sounds early (/m/, /s/)
  - Teach sounds that have high utility (m, s, a, t,)
  - Teach an explicit "sounding out" strategy
3. Proper Terminology

• Give students the vocabulary that captures important concepts and procedures, and use frequently

• Teach key vocabulary explicitly and use consistently (e.g., main ideas, summarization)

• Provide important background knowledge
4. Speeded Practice

• Practice designed to develop fluency with foundational skills with the goal of freeing up attention for higher-order aspects of the learning task

• Timed repeated readings of same and different passages is well established as a general practice and specifically for students with LD (Chard, Vaughn, & Tyler, 2002)
5. Cumulative Review

“Cumulative practice is a method for providing distributed practice by including practice opportunities that address both previously and newly acquired skills. Provide students with multiple practice attempts, in order to address issues of retention as well as automaticity.”

(Archer and Hughes, 2011)
Activity 2.1

• Review Principles 1-5
• Discuss with your shoulder partner:
  • Which of the first 5 principles of effective instruction do you identify as strengths of your instruction?
  • Which of these principles do you want to strengthen within your classroom/school?
6. Simple and Direct Language

- “Use consistent, unambiguous wording and terminology. The complexity of your speech (e.g., vocabulary, sentence structure) should depend on students’ receptive vocabulary, to reduce possible confusion.” (Archer and Hughes, 2011)

- Require students to repeat explanations in their own words
7. Incorporate Self-Regulation Strategies

• Students with LD often have difficulty with attention, motivation and self-regulation

• By the time students enter into intensive intervention such as special education, they have experienced repeated failure leading to avoidance, and emotional stress

• Incorporate motivators to help students regulate their attention and persistence
8. Comprehensiveness

• Targeted interventions in specific areas as needed

• When possible, focus on interventions that include word recognition, spelling, automaticity, and comprehension
9. Extend Duration and Time on Task

- Many interventions fail to last long enough or to provide enough time in instruction for students with LD.
- Supplanting instruction through some kind of pull-out actually reduces the amount of instructional time. Tiers 2 and 3 must increase time on task and the duration of intervention.
10. Progress Monitoring

• Use of ongoing progress monitoring systems help teachers know when an instructional adjustment is needed

• Weekly to bi-weekly assessments

• Students who are not responding to instruction can be identified quickly with immediate adjustments to instruction, and continued progress monitoring
Activity 2.2

• Review Principles 6-10
• Discuss with your shoulder partner:
  • Which of the last 5 principles of effective instruction do you identify as strengths of your instruction?
  • Which of these principles do you want to strengthen within your classroom/school?
3.0 Interventions for Decoding
Phonics Research

• Direct instruction in the **alphabetic principle** facilitates early reading acquisition (Stanovich, 1994)

• Phonics instruction also improves students’ **fluency, spelling and reading comprehension** (National Reading Panel, 2000)

• First graders’ **decoding** ability continues to be a major factor in **comprehension** as students progress through the grades (The Connecticut Longitudinal Study)

• The ability to decode **long words** increase the **qualitative differences** between good and poor readers (Perfetti, 1986)
Research Findings

• Primary academic skill deficits that lead to the identification of dyslexia involve difficulties with accuracy and fluency of decoding skills, and spelling

• Treatment is most effective if intervention begins early and involves explicit, differentiated and multicomponent instruction

Fletcher, Lyons, Fuchs & Barnes (2019)
What Program to Use?

"The specific program is less important than how it is delivered...Critical finding.. programs that are explicit, oriented to academic content, teach to mastery, provide scaffolding and emotional support and monitor progress while introducing programmatic adjustments to ensure intervention is addressing individual student needs are more effective"

Fletcher, Lyon, Fuchs, and Barnes, 2019
Some Comprehensive Program Options

• Corrective Reading
• Peer Assisted Learning Strategies
• Reading Mastery
• Phonics for Reading
• REWARDS

• Reviews of other programs can be found at What Works Clearinghouse (https://ies.ed.gov/ncee/wwc/FFW/Results?filters=,Literacy)
Activity 3.1

• Read the handout, “Intervention: Fundamental Principles for Word Level Reading Disabilities”

• Talk with your shoulder partner:
  • How are these principles evidenced in your schools curriculum for students with Learning Disabilities?
  • Which principles need to be strengthened within the curriculum?
Phonics – Types of Words

• Regular Words
  • A word in which all letters represent their most common sounds (e.g., mad, slump, trust)

• Irregular Words
  • A word in which one or more letters does not represent the most common sound (e.g., was, of)

• High Frequency Words (can be regular or irregular)
  • Only 13 words (a, and, for, he, is, in, it, of, that, the, to, was, you) account for 25% of print (Johns, 1980)

• Sight Words
  • Any word read at a regular rate without subvocalizing the individual sounds in the word
Phonics Instructional Routines

1. Associate letters and sounds
2. Blend sounds/parts to read words
3. Read words to build automaticity
4. Segment and spell words (dictation)
5. Read decodable text
Activity 3.2

• Review the Instructional Routines Bookmarks for Phonics instruction Grades 2-3

• Talk with your shoulder partner:
  • Which routines are already a part of your daily instructional routines?
  • Which routines do you need to add to your decoding instruction?

• Similar bookmarks are available for K-1 and 4-5 at KRESA Print Phonics Bookmarks (https://kresa.myprintdesk.net/DSF/SmartStore.aspx?6xni2of2cF0P58Liz6ypcA0ykpczL2rMWXWpKB7ywWVX9t5rxO6Rsq/oidVlcKc#!/CategoryHome/e/28)
4.0 Interventions for Comprehension
Specific Reading Comprehension Disability

Definition

- Based on the discrepancy of intact word reading and poorer reading comprehension.

Prevalence

- Estimates 1%-15% depending on exclusionary criteria and cut points, and age and grade level.
- Co-occurrence of word reading and reading comprehension is high and rdg. comp. and language skills is high.

Fletcher, Lyon, Fuchs, Barnes (2019)
Specific Skills Instruction

Focused on teaching some of the component skills and knowledge that can be applied to texts such as vocabulary, inference, and text structure.

All skills taught explicitly and systematically and in the context of reading.
Strategy Instruction

Involves explicit instruction in concepts, schemas, metacognition, and mediated learning, such as monitoring for meaning during reading, self-questioning, differentiating reading based on task demands etc.
Reading Comprehension Intervention

• The most effective instruction for children with reading comprehension difficulties, whether for skills-specific interventions or comprehension strategy intervention, is **explicit** rather than incidental, or based on exposure.

• Field lacks studies that assess the relative effectiveness of various approaches.
Reading Comprehension Interventions

• When these research-based interventions are implemented at the classroom level, students with LD gain as much or more than typically performing peers.

• Results from teaching at the classroom level were similar to teaching in a small group for supplemental instruction. (not the case for code-based instruction where small group is more effective)

Connor, Piasta, Fishman, Glasney, Schatschnieder, Crowe, Morrison (2009)
Some Promising Research Based Programs

- **Promoting Adolescents’ Comprehension of Text** (Vaughn, Wanzek and Colleagues)
- **INFER** (Fritschmann, Deshler, and Schumaker, 2007)
- **Learning Strategies Curriculum** (Schumaker, Deshler, & McKnight, 2002)
- **Peer Assisted Learning Strategies**

Fletcher, Lyon, Fuchs, Barnes (2019)
Activity 4.1

- Read the handout, "Intervention: Fundamental Principles Teaching Reading Comprehension"
- Talk with your shoulder partner:
  - How are these principles evidenced in your schools curriculum for students with Learning Disabilities?
  - Which principles need to be strengthened within the curriculum?
5.0 Assessment and Progress Monitoring
Student Progress Monitoring

• Allows teachers to:
  • Evaluate the academic performance of students over time
  • Quantify rates of improvement or responsiveness to instruction
  • Evaluate instructional effectiveness
Curriculum Based Measurement (CBM)

• Scientifically validated form of student progress monitoring that incorporates standard methods for test development and administration and data use

• Over 30 years of research documenting reliability, validity and instructional utility

• Brief and easy to administer

• Acadience is based on this research literature
CBM in Reading

• Passage Reading Fluency (ORF)
• Reading Maze

These tests are more global measures of reading that assess many of the components of reading—word reading, accuracy, fluency, and comprehension.
IEP focused on CBM

- Monitors student performance with respect to the year-end goal
- Tests measure the same skills and level of difficulty
- “Equivalent” units allow for rate of progress to be determined
- Graphic display supports decision making along the way and documents instruction
Sample IEP Statements Using CBM

- Present level:
  - Katy reads passages at the 3\textsuperscript{rd} grade level at a rate of 57 words correct per minute (wcpm).

- Goal:
  - In 30 weeks, given passages at the 3\textsuperscript{rd} grade level, Katy will read at a rate of 102 words correct per minute.

- Objective:
  - In nine weeks Katy will read passages at 71 wcpm.

Stecker and Hosp (2005)
Katy’s Present level (Baseline) and Goal

Stecker and Hosp (2005)
Activity 5.1

- Here are Katy’s scores for the last 8 weeks. Is Katy making adequate progress?

<table>
<thead>
<tr>
<th>Week 3</th>
<th>59</th>
<th>Week 8</th>
<th>59</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 4</td>
<td>60</td>
<td>Week 9</td>
<td>64</td>
</tr>
<tr>
<td>Week 5</td>
<td>58</td>
<td>Week 10</td>
<td>61</td>
</tr>
<tr>
<td>Week 6</td>
<td>62</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 7</td>
<td>64</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Plot these data on Katy’s ORF Graph
Essentials to Make Instructional Decisions

- Use a trend line on student graph (after 7-8 weeks of data)
- Use concrete decision rules
- Show instructional changes to provide a full picture of the student’s progress and instructional strategies used to improve outcomes

https://rti4success.org
Calculating Slope: Tukey Method

- **Step 1:** Divide the data points into 3 equal sections by drawing 2 vertical lines. (If the points divide unevenly, group them approximately.)

- **Step 2:** In the first and third sections, find the median data-point and the median instructional week. Locate the place on the graph where the two values intersect and mark with an “X.”

- **Step 3:** Draw a line through the two Xs, extending to the margins of the graph. This represents the trend line, or line of improvement.
Calculating Slope

Weeks of Primary Prevention

WIF: Correctly Read Words Per Minute
Activity 5.2

• Is Katy making adequate progress?
• Calculate and plot the trend line on Katy’s graph
Trend Line Analysis

If 4 weeks of instruction have occurred and eight data points collected, the trend line can be compared to the goal line using the following criteria:

1. If the student’s trend line is steeper than the goal, increase the goal.

2. If the student’s trend line is flatter than the goal line, the student is making insufficient progress. Revise the instructional program.

3. If trend line and goal line are the same, no change.

https://rti4success.org
Intensification Variables

1. Enablers
   a) Group size
   b) Allocated Time
   c) Instructor

2. Content

3. Instructional Design

4. Instructional Delivery

5. Behavior Support
   a) Prevent
   b) Respond

6. Generalization
Rule of thumb: Select appropriate adaptations that will likely yield the quickest results and then monitor the impact of the adaptation(s)
Student Progress Monitoring: Acadience

The graph shows an example of a progress monitoring graph automatically generated in the Acadience data system. It includes Pathways of Progress comparison lines.
Progress Monitoring: Acadience

This graph shows progress monitoring across 3 interventions, with the student making little progress during the first two interventions. The student shows a positive response to the third intervention.
Closing Review

Grouping students for instruction based on student skill, providing explicit instruction, monitoring their progress over small periods of time, adjusting instruction based on the data and providing feedback on their performance is one of the most powerful sets of educational practices that exists.

Miller and Tilly (2015)
References


References 2