Disclosure

Dr. Kimbell is employed by Pearson publisher of many of the instruments that will be mentioned today.
1. Reversing letters and numbers means Dyslexia 
   True or False

2. What percentage of the population has Dyslexia?
   A. 1%
   B. 5%
   C. 12%
   D. 20%

Objectives:

1. Identify subtypes of reading disorders, including dyslexia.
2. Discuss best practices in identifying dyslexia.
3. Identify steps for an effective process to assess dyslexia in schools.
Definition of Dyslexia

Dyslexia = Dys + Lexis

Dys = Poor or Inadequate
Lexis = Words or Language
Three Types of Struggling Readers

<table>
<thead>
<tr>
<th>Decoding</th>
<th>Comprehension</th>
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<tbody>
<tr>
<td>Adequate</td>
<td>Adequate</td>
</tr>
<tr>
<td>Non-specific Reading Disability (Hyperlexia)</td>
<td>Specific Reading Disability (Dyslexia)</td>
</tr>
<tr>
<td>“Garden Variety” poor readers</td>
<td>Deficient</td>
</tr>
</tbody>
</table>

What is Dyslexia?

- Specific learning disability
- Neurological in origin
- Characterized by difficulties with
  - accurate and/or fluent word recognition,
  - poor spelling, and
  - poor decoding abilities.

(IDA; Adopted by the Board of Directors: November 12, 2002)
IDA: Definition of Dyslexia

Difficulties typically result from a deficit in the phonological component of language.

Difficulties are 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.

(IDA; Adopted by the Board of Directors: November 12, 2002)

Another Conceptualization of Dyslexia

Unexpected difficulty in reading for an individual who has the intelligence to be a much better reader.

Due to a difficulty in getting to the individual sounds of spoken language which affects the ability to speak, read, spell, and often learn a language.

(Cassidy-Mikulski Senate Resolution 275, 2015)
Shaywitz (2003)

...“the deficit responsible” for dyslexia “resides in the language system.”

“Dyslexia . . . a localized weakness within . . . the phonologic module.”
**Phonological Awareness**

- Identify and make oral rhymes
- Identify and work with syllables in spoken words
- Identify and work with onsets and rimes in syllables
- Identify sound units (phonemes) in spoken words

Children are ready to read when they can identify and manipulate larger parts of spoken language and when they are aware of other aspects of sounds.

**A Hybrid Model of Dyslexia Identification Considers . . .**

- Multiple Sources of Information
- Degree to which the student has responded to treatment
Hybrid Model of Dyslexia Identification

1. Symptoms
   - Lack of response to treatment
     - Alphabet Writing
     - Phonics/Letter Knowledge

2. Pre-reader difficulties
   - Word Reading/Decoding
   - Reading Fluency
   - Spelling
   - Written Expression
   - Reading Comprehension < Listening Comprehension

3. Reader difficulties
   - Word Reading/Decoding
   - Reading Fluency
   - Spelling
   - Written Expression
   - Reading Comprehension < Listening Comprehension
Causes/Correlates

- Phonological Processing
- Rapid Automatic Naming
- Auditory Working Memory
- Processing Speed
- Associative Memory
- Long-term Storage and Retrieval
- Orthographic Processing

Risk Factors

- Family History
- Language Impairment/Poor Receptive Vocabulary
Differences in Vocabulary Acquisition

(Adapted from Hart & Risley)

A weakness in oral language can adversely affect learning to read which, in turn, will affect reading to learn.
Possible Strengths

Fluid Reasoning and Problem Solving

Oral Language

Math

Pearson Dyslexia Toolkit

Screening Tools

Diagnostic Assessment Tools

Progress Monitoring Tools

Intervention Tools
# Pearson Dyslexia Toolkit

<table>
<thead>
<tr>
<th>SCREEN</th>
<th>ASSESS</th>
<th>INTERVENE</th>
<th>MONITOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>amswebPlus®</td>
<td>Process Assessment of the Learner, Second Edition™: Diagnostics for Reading and Writing (PAL™-II Reading and Writing)</td>
<td>Process Assessment of the Learner (PAL™) reading and writing lessons</td>
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<td>Kaufman Test of Educational Achievement™, Third Edition (KTEA™-3) Brief Form</td>
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<tr>
<td>Dyslexia index scores from the KTEA-3 and WJAT-III</td>
<td>Woodcock Reading Mastery Tests™, Third Edition (WRMT™-III)</td>
<td>SPELL-Links™ to Reading &amp; Writing</td>
<td>Growth Scale Value (GSV) Scores</td>
</tr>
</tbody>
</table>

Screening and Evaluation Tools for Dyslexia
Shaywitz DyslexiaScreen

- Brief teacher survey for identifying students at-risk for dyslexia.
- Intended for use with students experiencing academic difficulties, but can also be used to screen all students.
- Therefore...universal or Tier 2 capable
- 5 minutes (or less) using an online form
- Digital administration and scoring
- The classification accuracy data indicate moderately high sensitivity and specificity

What does the Shaywitz measure?

Observational Ratings Analyze:
  1. Phonological,
  2. Linguistic, and
  3. Academic performance

Ratings based on classroom teacher observations
- Subjectivity limited because teacher answers questions after having worked with student daily for 6-8 weeks.
At Risk vs. Not at Risk

<table>
<thead>
<tr>
<th>At Risk</th>
<th>Not at Risk</th>
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<tr>
<td>• Increase frequency and duration of interventions.</td>
<td>Monitor and support language and academic skills in general education setting.</td>
</tr>
<tr>
<td>• Select a more intensive intervention program.</td>
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<tr>
<td>• Monitor student’s academic performance.</td>
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<tr>
<td>• Refer student for comprehensive evaluation.</td>
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</table>

KTEA-3 and WIAT-III Dyslexia Index Scores

Ideal for screening
  • brief administration time
  • clinical sensitivity

Index scores are also sufficiently rigorous to contribute to a comprehensive diagnostic evaluation.

Breaux & Lichtenberger (2016).
KTEA-3 Dyslexia Index scores

- Two Dyslexia Index scores are provided for the KTEA–3: one for grades K–1, and another for grades 2–12
- Each of these Dyslexia Index scores are obtained by administering three subtests from either Form A or Form B of the KTEA–3
- The materials needed to administer and score the Dyslexia Index subtests are available as part of the KTEA–3 Comprehensive Form.

Dyslexia Index Scores - Purposes

Evaluation
- The KTEA-3 Dyslexia Index scores can serve as a starting point for a more comprehensive psychoeducational test battery.
- If the Dyslexia Index results suggest that further testing is necessary, administer the KTEA–3 Comprehensive Form
- All standard scores from the Dyslexia Index subtests can validly be applied to a more extensive assessment using the KTEA–3 Comprehensive
**Dyslexia Index Scores: Features and Benefits**

Useful as a quick dyslexia screener that can also contribute to a more in-depth subsequent evaluation using the KTEA-3 or WIAT-III (without re-administering those subtests)

- Excellent reliabilities (.90s) at every age/grade
- Strong clinical sensitivity
- Brief administration times
- Composite structures are based on clinical data as well as a strong empirical foundation
- Results are easy to interpret: 6 categories of Risk for Dyslexia

Included in each of the Dyslexia Index Manuals:
- Dyslexia Index composite norms tables, reliability, and validity data
- Score Computation Form and Graphical Profile (reproducible forms for hand scoring)
- Interpretation guidance and recommendations for next steps
- Reproducible Response Booklet pages for Spelling subtest

*Manual can be found in Q-interactive or Digital Assessment Library*
What’s next?

Diagnostic Assessment
How do I select tests for Diagnostic Assessment?

Test selection for Diagnostic Assessment should evaluate key components of Dyslexia

• Strengths
• Response to treatment (effective instruction)
• Potential areas of weakness
  • Symptoms
  • Cognitive Correlates
  • Risk Factors

Psychometric support vs theoretical support
• Test for reading vs. for dyslexia
### Diagnostic Assessment Tools

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<tr>
<td><strong>Phonics Skills/ Letter Knowledge</strong></td>
<td>• Letter &amp; Word Recognition</td>
<td>Letters</td>
<td>Early Reading Skills: Skills Analysis: Naming Letters; Letter-Sound Correspondence</td>
<td>Letter Identification</td>
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<td>• Letter Naming Facility</td>
<td>• Letter Checklist</td>
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<td><strong>Decoding Pseudowords</strong></td>
<td>Nonsense Word Decoding</td>
<td>Pseudoword Decoding</td>
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<td>• RAN-Words</td>
<td>• Oral Reading Fluency</td>
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<td>• Decoding Fluency</td>
<td>• Morphological Decoding Fluency</td>
<td>• Pseudoword Decoding Speed</td>
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<td>• Silent Reading Fluency</td>
<td>• Sentence Sense</td>
<td>• Word Reading Speed</td>
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<td><strong>Spelling</strong></td>
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<td>Word Choice</td>
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<td>Receptive Vocabulary</td>
<td>Reading Vocabulary</td>
<td>Are They Related?</td>
<td>• Listening Comprehension</td>
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<td>RAN Letters</td>
<td>Early Reading Skills SA:</td>
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<td>Phonological Processing Error Analysis: Blending</td>
<td>Sentences: Listening</td>
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<td>• Words</td>
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<td>Secondary Areas</td>
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<td>Reading Comprehension</td>
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<td>• Does It Fit?</td>
<td>Reading Comprehension</td>
<td>Passage Comprehension</td>
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<td>• Sentence Sense: Accuracy Score</td>
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<td>• Sentence Structure</td>
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<td>Sentences: Listening</td>
<td>Listening Comprehension: Oral Discourse Comprehension</td>
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<td>• Expressive Coding</td>
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<td>• Word Choice</td>
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## Assessment of Intellectual Functioning

- The Pearson toolkit for dyslexia diagnostic evaluations also includes tests of intellectual functioning.
- Within the context of a dyslexia evaluation, tests of intellectual functioning are used for:
  - PSW Analysis
  - Differential Diagnosis
## Cognitive Processing Areas for Dyslexia Evaluation

### WISC-V Measures of Key Cognitive Processing Areas for a Dyslexia Evaluation

<table>
<thead>
<tr>
<th>Cognitive Processing Area</th>
<th>WISC-V Index Score</th>
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<tbody>
<tr>
<td>Auditory working memory (phonological memory)</td>
<td>Auditory Working Memory (AWMI)</td>
</tr>
<tr>
<td>Rapid automatic naming</td>
<td>Naming Speed Index (NSI)</td>
</tr>
<tr>
<td>Verbal comprehension and reasoning</td>
<td>Verbal Comprehension Index (VCI)</td>
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<tr>
<td>Processing speed</td>
<td>Processing Speed Index (PSI)</td>
</tr>
<tr>
<td>Long-term storage and retrieval</td>
<td>Storage and Retrieval Index (SRI)</td>
</tr>
<tr>
<td>Associative memory (learning efficiency)</td>
<td>Symbol Translation Index (STI)</td>
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### Intervention
**Intervention Tools**

Pearson Dyslexia Toolkit

- Intervention Guide for Learning Disability (LD) Subtypes
- Process Assessment of the Learner (PAL) Research-Based Reading and Writing Lessons
- KTEA-3 teaching objectives and intervention statements
- WIAT-III intervention goal statements
- SPELL links

**Intervention Guide for LD Subtypes**

7 reading-related subtypes

- Phonological
- Orthographic
- Mixed Phonological-Orthographic
- Language (OWL-LD, SLI, LLD)
- Comprehension
- Fluency/Naming speed
- Global
### Intervention Planning Based on Subtypes of Reading-Related Learning Disabilities

#### Phonological Dyslexia
- Phonological core deficit
- Rely on visual and orthographic cues
- Rarely use letter-sound conversion
- Read irregular words better than pseudowords
- Listening comprehension stronger than reading comprehension

#### Orthographic Dyslexia
- Difficulty using visual-lexical route to reading and writing words
- Rely on phonological route
- Sound out words letter-by-letter
- Over-rely on sound-symbol relationships
- Pseudoword reading better than irregular word reading
- Listening comprehension stronger than reading comprehension

#### Mixed Phonological-Orthographic Dyslexia
- Severely impaired with difficulty using phonological route as well as the visual-lexical route to reading and writing words
- No consistent pattern of errors
- Difficulty with reading regular, irregular, and pseudowords
- Listening comprehension is stronger than reading comprehension
### Intervention Planning Based on Subtypes of Reading-Related Learning Disabilities

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
</table>
| **Language** | Oral and Written Language Learning Disability (OWL-LD)  
Poor listening and reading comprehension |
| **Fluency** | Poor reading fluency due to naming speed deficit  
Able to read and decode words accurately with adequate phonological processing skills |
| **Global** | Referred to as “garden variety” poor readers  
Difficulty with all reading-related skills |

### Intervention Planning Based on Subtypes of Reading-Related Learning Disabilities

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
</table>
| **Comprehension** | Specific comprehension deficit, sometimes referred to as hyperlexia  
Relatively rare and sometimes symptom of pervasive developmental disorder  
Poor listening and reading comprehension  
Fluency and accuracy of word recognition and decoding skills intact |
## Intervention Guide for LD Subtypes

### Hallmark indicators: skills/abilities that define or differentiate between subtypes.

- Cognitive Ability
- Phonological Processing
- Rapid Automatic Naming
- Listening Comprehension
- Orthographic Coding
- Oral Grammar
- Non-word Reading
- Word Recognition
- Reading Comprehension
- Reading Fluency
- Spelling

### Ancillary indicators: skills/abilities that are used to tailor recommendations.

- Handwriting legibility and speed (dysgraphia)
- Verbal comprehension and reasoning
- Auditory verbal working memory
- Processing speed
- Perceptual reasoning
**Intervention Report**

**DESCRIPTION OF SUBTYPE: MIXED PHONOLOGICAL/ORTHOGRAPHIC**

X's pattern of performance across key cognitive, language, and academic domains is similar to that of students with a mixed phonological and orthographic deficit.

---

**Intervention Guide for LD Subtypes**

**Essentials to remember:**

- The focus is intervention, not diagnosis
- The skill profile relies on judgment, not calculation
- Interventions are not guaranteed, expect some trial-and-error
**Intervention Report**

Students with a mixed deficit have difficulty mentally representing the sound patterns of the words in their language, which causes great difficulty in using the phonological route to reading and spelling, as well as difficulty in using the visual-lexical route to reading and writing words.

**Dysgraphia**

X’s poor handwriting legibility and lack of automaticity suggests that he may also benefit from interventions designed for students with dysgraphia, a disorder that affects handwriting, spelling, and written expression ability.
Double Deficit

X's pattern of weaknesses indicates a double deficit in phonological processing and naming speed. Students with slow naming speeds tend to need more exposure to new words before they can read them automatically due to difficulty developing orthographic representations of words.

Double Deficit

Double deficits in phonological processing and naming speed typically lead to significant reading difficulty due to challenges students experience with both the phonological and orthographic aspects of reading.
Progress Monitoring Tools

Pearson Dyslexia Toolkit

- Growth Scale Values (KTEA-3, WIAT-III, WRMT-III)
- Relative Performance Index (WRMT-III)
- aimswebPlus
Growth Scale Values (GSV)

- Equal interval scale
- Measure ability on a developmental continuum
- Compare performance over time
- Measure growth and track individual progress
References and Resources


References and Resources


Questions
Anne-Marie.Kimbell@Pearson.com
Diana.Zinsmeister@pearson.com