Unraveling the Mystery of Dyslexia: Utilizing the Pearson Dyslexia Toolkit
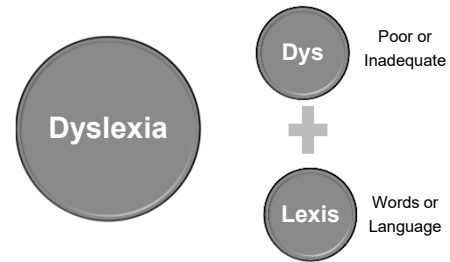
TEDA Conference
December
2019

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P Pearson

Definition of Dyslexia

Dyslexia

Dys — Poor or Inadequate

Lexis — Words or Language

P Pearson — Dyslexia Identification

Symptoms

1 Lack of response to treatment	2 Pre-reader difficulties	3 Reader difficulties
	• Alphabet Writing • Phonics/Letter Knowledge	• Word Reading/Decoding • Reading Fluency • Spelling • Written Expression • Reading Comprehension < Listening Comprehension

P Pearson — Dyslexia Identification

Causes/Correlates

Phonological Processing

Processing Speed

Rapid Automatic Naming

Associative Memory

Auditory Working Memory

Long-term Storage and Retrieval

Orthographic Processing

P Pearson — Dyslexia Identification

Risk Factors

• Family History

• Language Impairment/ Poor Receptive Vocabulary

P Pearson — Dyslexia Identification

Dyslexia Guidelines in Texas - 2018

THE DYSLEXIA HANDBOOK

2018 Update

Procedures Concerning Dyslexia and Related Disorders

P Pearson

**TX Handbook: Dyslexia Difficulties**

- Students identified as having dyslexia typically experience primary difficulties in phonological awareness, including phonemic awareness and manipulation, single-word reading, reading fluency, and spelling.
- Consequences may include difficulties in reading comprehension and/or written expression.
- These difficulties in phonological awareness are unexpected for the student's age and educational level and are not primarily the result of language difference factors.
- Additionally, there is often a **family history** of similar difficulties.

℗ Pearson   17

**Dyslexia or LD in Reading?
Depends upon**

- Where you live
- How the terms *are defined*
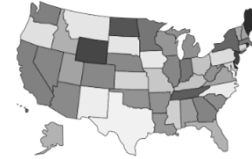
℗ Pearson   8

Despite claims to the contrary, it is incontrovertible that there are many people who struggle to learn to read (decode) for reasons other than poor teaching. While this condition is widely known as dyslexia, achieving a clear, scientific, and consensual understanding of this term has proven elusive.

The Dyslexia Debate
Elliot & Grigorenko, 2014

℗ Pearson   9

History of Dyslexia

- Dates back to 19th century as "word blindness"
- "Dyslexia" first used in 1887 by an ophthalmologist
- Professionals now see dyslexia as Language-based
  - But public still defines as a Visual problem

℗ Pearson   10

UNEXPECTED?

- Definitions often include "unexpected poor performance"
  - Difficult to define <u>unexpected</u>
  - Based on intelligence testing? Or failure to respond to intervention?
- Shaywitz says within a "*sea of strengths*"
  - But some poor readers have flat cognitive profiles
  - Certainly not everyone with dyslexia is gifted…
- IQ does not appear to predict which poor readers will be successfully remediated

℗ Pearson   11

The belief that those with dyslexia are high-functioning poor readers, rather than those who represent the full continuum of intellectual ability, has continued to persist despite all evidence to the contrary.

The Dyslexia Debate
Elliot & Grigorenko, 2014

℗ Pearson   12

General Agreement on

- Importance of phonological awareness, especially in the early years
- Importance of early intervention for reading difficulties
- Instruction should be structured, comprehensive, and individualized
  – Highest effect sizes for early intervention (1st grade) and smaller group sizes
  – Lack of evidence for visual/auditory training, visual-motor activities, vision therapy, tinted lenses, biofeedback, fatty acids

Pearson   13

Cognitive Deficits in Dyslexia

- **Primary: Phonological deficit**
- Also have been researched:
  – Rapid Naming
  – Working Memory
  – Auditory processing
  – Visual processing

Pearson   14

General Agreement on

- Importance of phonological awareness, especially in the early years
- Importance of early intervention for reading difficulties
- Instruction should be structured, comprehensive, and individualized
  – Highest effect sizes for early intervention (1st grade) and smaller group sizes
  – Lack of evidence for visual/auditory training, visual-motor activities, vision therapy, tinted lenses, biofeedback, fatty acids

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Dyslexia is often synonymous with

Reading Disability
Reading Disorder
Learning Disability in Reading
Specific Reading Disability
Specific Reading Difficulty

*Sometimes used to refer to a more specific group of **poor decoders***
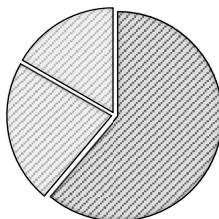
Pearson   1

Facebook Survey of School Psychologists: Tell me your thoughts on "Dyslexia" vs "SLD in Reading."

DYSLEXIA VS SLD
■Same thing ■Medical term ■Different

40 Respondents

Pearson   17

Facebook Survey of School Psychologists: Tell me your thoughts on "Dyslexia" vs "SLD in Reading."

❏ I get so tired of the discussion of dyslexia vs. SLD vs. learning disability vs. Reading disability. #samething

❏ To me it's like saying hypertension vs. high blood pressure. Or broken bone vs fractured bone

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US DOE Oct 2015

- https://www2.ed.gov/policy/speced/guid/idea/memosdcltrs/guidance-on-dyslexia-10-2015.pdf

- The purpose of this letter is to clarify that there is ***nothing in the IDEA that would prohibit the use of the terms dyslexia***, dyscalculia, and dysgraphia in IDEA evaluation, eligibility determinations, or IEP documents.

US DOE Oct 2015

- Under the IDEA and its implementing regulations "specific learning disability" is defined, in part, as "a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations, ***including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia***." See 20 U.S.C. §1401(30) and 34 CFR §300.8(c)(10) (emphasis added).

Why is it more desirable to have dyslexia than a reading disability?

- Dyslexia is a meme
  - Unit of cultural transmission
  - Meme survives because it's easy to understand, communicate & remember
    - Not because it is true, useful, or potentially harmful

      » *The Dyslexia Debate*

Qualifying for Special Education

1. Student has an IDEA disability condition
2. Student has a need for special education and related services

Specially Designed Instruction (SDI) = adapting the content, methodology, or delivery of instruction to address the unique needs of the student that result from the disability

Types of Reading Difficulties

R = D X LC

	Strong Language Comprehension	Weak Language Comprehension
Strong Word Reading	**Typical Reader**	**Hyperlexic**
Weak Word Reading	**Dyslexic or Compensator**	**Mixed Reading Difficulty**

Phonological vs Orthographic Processing

- *Phonological processing* disorder and *orthographic processing* disorders refer to the particular brain processes at work in people who experience difficulty when they read.
- **An individual who has a phonological processing disorder will have difficulty perceiving and manipulating the phonemes that would enable them to "hear" the sounds of the words they read.***

- * Shaywitz, S. (2003) Overcoming Dyslexia: A new and complete science-based program for reading problems at any level. New York: Knopf
- http://www.cullinaneducation.com/learningdifferences_Dyslexia.html

Phonological vs Orthographic Processing

- *Orthographic processing* involves recognizing and remembering the **spatial orientation and sequence of language symbols.** When individuals with orthographic processing disorders attempt to read, their brains have trouble perceiving and/or processing the direction and sequence of written language.

  - * Shaywitz, S. (2003) Overcoming Dyslexia: A new and complete science-based program for reading problems at any level. New York: Knopf
  - http://www.cullinaneducation.com/learningdifferences_Dyslexia.html

Learning Disorders Reading: Subtypes

1. Phonological
2. Orthographic   ◁ Dyslexia
3. Mixed Phonological-Orthographic

4. Language
5. Comprehension deficit
6. Fluency subtype

Dysgraphia (often a co-occurring condition with one of the other listed subtypes)

1. LD Reading Subtype: Phonological

- Phonological is the core deficit
- Have difficulty mentally representing the sound patterns of the words in their language
  - Causes great difficulty in using the phonological route to reading and spelling
- Over-rely on visual and orthographic cues while reading
- May memorize whole words as a strategy for word recognition
- Sometimes referred to as dysphonetic or phonological dyslexia.

2. LD Reading Subtype: Orthographic

- Have difficulty in using the visual-lexical route to reading and writing words.
- Instead, the phonological route to lexicon is used
- Tend to sound words out letter by letter, over relying on sound-symbol relationships.
- Pseudoword reading is typically better than real word or exception word reading because non-words are usually phonetically decodable
- Sometimes referred to as surface dyslexia, visual form dyslexia or dyseidetic dyslexia

3. LD Reading Subtype: Mixed Phonological and Orthographic

- More frequently occurring than either Phonological or Orthographic
- 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
- Causes severe impairment in learning to read
  - They have no usable key to the reading and spelling code, and seemingly arbitrary error patterns are often observed.
- Difficulty mentally representing sound patterns of words in language

3. LD Reading Subtype: Mixed Phonological and Orthographic

- Strong in Listening Comprehension
  - Learn better with direct instruction and experiential learning
- Mixed LD reading is manifested in weaknesses in:
  - Phonological Processing
  - Decoding
  - Word Reading
  - Reading Fluency, and
  - Spelling

4. LD Reading Subtype: Language

- Have problems with both Oral and Written language
- Referred to as Oral and Written Language Learning Disability (OWL-LD), (Grammatical) Specific Language Impairment (SLI or G-SLI), or Language Learning Disability (LLD)
- Students with OWL-LD show particular difficulty processing <u>grammar and syntax</u>.

5. LD Reading Subtype: Comprehension

- A specific comprehension deficit is sometimes referred to as hyperlexia.
- Hyperlexia can refer to
  - Students who exhibit poor language comprehension skills and exceptional word recognition and decoding skills OR
  - Students with poor language comprehension and relatively good basic reading skills
- Have difficulty with listening comprehension and reading comprehension
  - Read accurately and fluently, but fail to grasp the meaning of what they have read

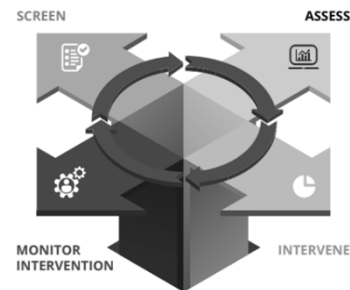## 6. LD Reading Subtype: Reading Fluency

- Students with poor reading fluency due to a *naming speed deficit* typically have *adequate phonological processing* skills
- Able to read and decode words accurately, but they read connected text very slowly
- Reading fluency deficits cannot be identified until word-reading skills are acquired; however, naming speed deficits may be identified earlier.
- Specific deficits in naming speed have been shown to impede reading fluency.

Dyslexia Assessment Workflow

SCREEN   ASSESS
MONITOR INTERVENTION   INTERVENE

Pearson Dyslexia Toolkit

SCREEN	ASSESS	INTERVENE	MONITOR
Shaywitz DyslexiaScreen™	Kaufman Test of Educational Achievement™, Third Edition (KTEA™-3) Comprehensive Form	Intervention Guide for LD (Learning Disability) Subtypes	Review360® for SLPs
aimswebPlus®	Process Assessment of the Learner, Second Edition™: Diagnostics for Reading and Writing (PAL™-II Reading and Writing)	Process Assessment of the Learner (PAL™) reading and writing lessons	aimswebPlus
Kaufman Test of Educational Achievement™, Third Edition (KTEA™-3) Brief Form	Wechsler Individual Achievement Test®, Third Edition (WIAT®-III)	KTEA-3 teaching objectives and intervention statements WIAT-III intervention goal statements	Growth Scale Value (GSV) Scores
Dyslexia index scores from the KTEA-3 and WIAT-III	Woodcock Reading Mastery Tests™, Third Edition (WRMT™-III)	SPELL-Links™ to Reading & Writing SPELL-Links Class links for Classrooms™	

Pearson

TX Dyslexia Handbook 2018

Suspicion of Dyslexia or a Related Disorder
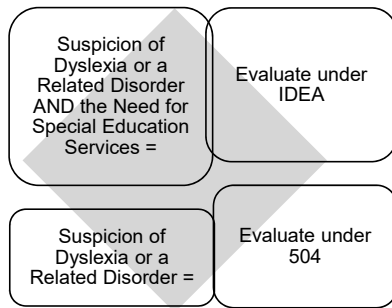What type of instruction is needed?

✓ Standard protocol dyslexia instruction
OR
✓ Specially designed instruction under IDEA
✓ defined under IDEA as "adapting . . . the content, methodology, or delivery of instruction"
✓ Must address the unique needs of the child that result from the child's disability and must ensure access to the general curriculum so that the child can meet the state's educational standards (34 C.F.R §300.39(b)(3)).

Pearson

Referrals

- Suspicion of Dyslexia or a Related Disorder AND the Need for Special Education Services = Evaluate under IDEA
- Suspicion of Dyslexia or a Related Disorder = Evaluate under 504

Two Types of Assessment
from Sattler

❖ Focused = "detailed evaluation of a specific area of functioning
  ❖ **504 Evaluation (Dyslexia)**

❖ Diagnostic = "detailed evaluation of a child's strengths and weaknesses in several areas such as cognitive, academic, language, behavioral, emotional and social functioning"
  ❖ **Full Individual and Initial Evaluation (FIIE)**

TX Dyslexia Handbook (unchanged)

Areas for Assessment
Academic Skills
- ✓ Letter knowledge (name and associated sound)
- ✓ Reading words in isolation
- ✓ Decoding unfamiliar words accurately
- ✓ Reading fluency (both rate and accuracy are assessed)
- ✓ Reading comprehension
- ✓ Spelling

Cognitive Processes
- ✓ Phonological/phonemic awareness
- ✓ Rapid naming of symbols or objects

TX Dyslexia Handbook (unchanged)

Areas for Assessment
Possible Additional Areas
- ✓ Vocabulary
- ✓ Listening comprehension
- ✓ Verbal expression
- ✓ Written expression
- ✓ Handwriting
- ✓ Memory for letter or symbol sequences (orthographic processing)
- ✓ Mathematical calculation/reasoning
- ✓ Phonological memory
- ✓ Verbal working memory
- ✓ Processing speed

Dyslexia Assessment

	WRMT-III	KTEA-3	WIAT-III
Phonological Awareness	Y	Y	Y (within Early Reading Skills)
Rapid Naming	Y	Y	NO
Letter Knowledge	Yes	Y (within Letter & Word ID and qualitatively)	Y (within Early Reading Skills)
Decoding	Y	Y	Y
Word Recognition	Y	Y	Y
Fluency	Y (passages)	Y (sight words, nonsense words, silent)	Y (passages)
Spelling	NO	Y	Y
Reading Comprehension	Y (sentences)	Y	Y

Dyslexia Assessment

	PAL-II	Other
Phonological Awareness	Y	CTOPP2
Rapid Naming	Y	CTOPP2
Letter Knowledge	Y	
Decoding	Y	
Word Recognition	NO	
Fluency	Y	GORT-5 TOWRE-2
Spelling	Y	
Reading Comprehension	Y	GORT-5

504
Person with a disability

LD
under
IDEA
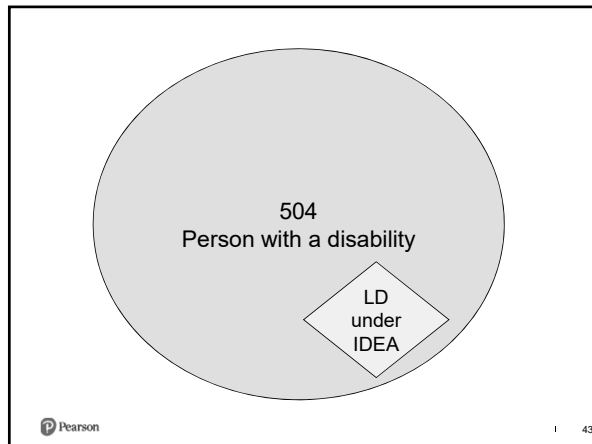
Pearson   43

Do you screen cognitive ability for 504 evaluations?
What tests do you use?

Pearson Level B assessments:

KBIT-2

Ravens-2

Pearson

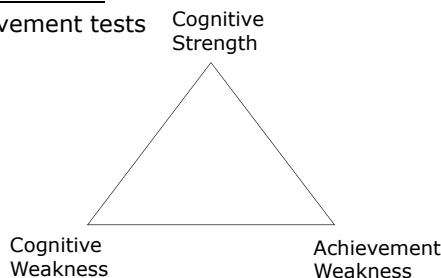### 8 Areas of Specific Learning Disability (SLD) in IDEIA:

- Basic Reading Skills (BRS)
- Reading Comprehension (RC)
- Reading Fluency (RF)
- Math Calculation (MC)
- Math Problem Solving (MPS)
- Written Expression (WE)
- Oral Expression (OE)
- Listening Comprehension (LC)

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Approaches to Pattern of Strengths and Weaknesses Analysis

- The "3 Major Models"
  Most prominent research-based
    - Concordance-discordance method (C-DM; Hale & Fiorello)
    - Discrepancy/consistency method (Naglieri)
    - Flanagan DD-C Model for SLD
- Also
    - Dehn's PSW model
    - C-SEP

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PSW Assessment

- Cognitive tests
- Achievement tests

Cognitive Strength

Cognitive Weakness

Achievement Weakness

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KTEA3 OR WIATIII
Dyslexia Index Scores -Purposes

- Screening
  - Results differentiate between individuals with and without dyslexia.

  - Brief administration time & clinical sensitivity

  - Identify which students require more frequent progress monitoring, more intensive instruction or intervention, or a comprehensive psychoeducational evaluation.

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KTEA3 Dyslexia Index scores

- Identify risk for dyslexia in Kdg – 12th grade or ages 5 through 25

- Obtain Dyslexia Index score in 20 minutes or less

- *A single score such as the Dyslexia Index is not sufficient to diagnose dyslexia. Rather, a diagnosis of dyslexia is based on a convergence of evidence gathered from multiple sources.*

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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

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KTEA3 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

P Pearson   51

Predictors of Dyslexia: Early GradeS
Breaux, K. C., & Lichtenberger, E. O. (2016). Essentials of KTEA–3 and WIAT–III assessment. Hoboken, NJ: Wiley.

- **Best Diagnostic Predictors**:
  - Letter knowledge (name/sound)
  - Rapid automatic naming
  - Phonological awareness

    (Kirby, Parrila, & Pfeiffer, 2003; Schatschneider & Torgesen, 2004)

P Pearson

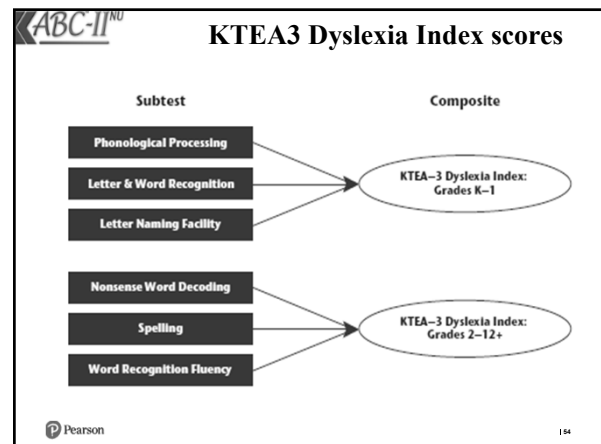### Predictors: Later Grades
Breaux & Lichtenberger (2016)

- **Best Diagnostic Predictors**:
  - Decoding fluency
  - Text reading fluency

  Not measures of phonological awareness and rapid automatic naming

                    (Schatschneider & Torgesen, 2004).

P Pearson   53

KTEA3 Dyslexia Index scores

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Slide 1

KTEA-3 Dyslexia Index Score Computation Form

Slide 2

Dyslexia Index Score Interpretation

Dyslexia Index Standard Score	Risk for Dyslexia
≥98	Very Low
90–97	Low
85–89	Elevated
77–84	Moderate
70–76	High
<70	Very High

Suggested Interpretive statement:

The examinee's Dyslexia Index score indicates his/her risk for dyslexia is in the _____ range.

These results on their own are not sufficient to identify or diagnose dyslexia. A comprehensive evaluation (☐ is ☐ is not) recommended.
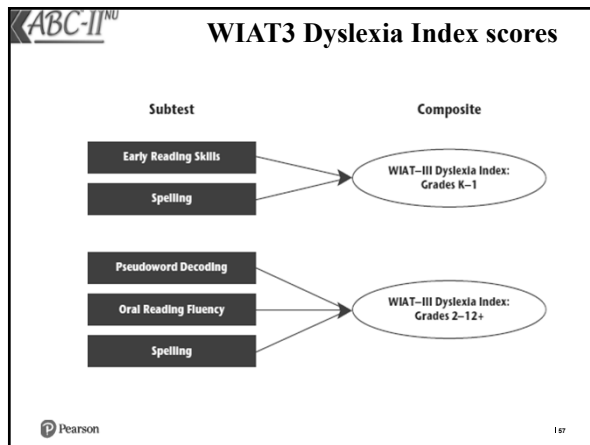
Slide 3

WIAT3 Dyslexia Index scores

Subtest → Composite

Early Reading Skills
Spelling
→ WIAT–III Dyslexia Index: Grades K–1

Pseudoword Decoding
Oral Reading Fluency
Spelling
→ WIAT–III Dyslexia Index: Grades 2–12+

Slide 4

KTEA3 Dyslexia Index scores Classification Accuracy

At-Risk

Table 3.6   Classification Accuracy and ROC Area

Score	Sensitivity	Specificity	ROC Area
KTEA–3 Dyslexia Index: Grades K–1	.95	.85	.90
KTEA–3 Dyslexia Index: Grades 2–12+	.94	.74	.89

WIATIII Dyslexia Index scores Classification Accuracy

Table 3.10   Classification Accuracy and ROC Area

Score	Sensitivity	Specificity	ROC Area
WIAT–III Dyslexia Index: Grades K–1	.83	.81	.88
WIAT–III Dyslexia Index: Grades 2–12+	.90	.78	.90

Note. Results for the Dyslexia Index: Grades K–1 are reported using a 90% confidence interval around the score before applying the cut score of below 90. Results for the Dyslexia Index: Grades 2–12+ are reported using a simple cut score of below 90.

Slide 5

Dyslexia Index Scores: Features and Benefits

- Excellent reliabilities (.90s) at every age/grade
- Strong clinical sensitivity
- Administration times range from 12-20 minutes for each score
- 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 (ranging from very low to very high)
- Manual provides recommendations for next steps
- Response Booklet pages for Spelling subtest (applies to Grades 2-12+ scores) are included as reproducible forms

Slide 6

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)
- 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
- *Manual can be found in Q-interactive or Digital Assessment Library*

KTEA3 and Measuring Orthographic Processing

- The KTEA-3 Orthographic Processing Composite (SP + LNF + WRF) subtests involve processing orthographic representations by retrieving them from LTM (Spelling) or recognizing/naming them with automaticity (WRF+ LNF).

- In this way, it involves both the receptive (reading) and expressive (spelling) components of orthographic processing.

- The Orthographic Processing Composite score produced large effect sizes for the SLD and language disorder clinical groups.

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Subtests/Composites Recommended for Dyslexia Testing

KTEA-3:

Orthographic Processing Composite – Spelling, Word Recognition Fluency, and Letter Naming Facility

Associational Fluency subtest

Sound-Symbol Composite - Phonological Processing and Nonsense Word Decoding

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Letter Checklist Directions

KTEA-3

The Letter Checklist includes uppercase and lowercase letters of the English alphabet. The purpose of this checklist is to evaluate an examinee's ability to name all the letters of the alphabet and/or give their sounds. Certain letters, such as *J* and *a*, are shown more than once in different font styles (an asterisk appears next to each of these letters in the Checklist). There are no normative scores associated with this Checklist, so following standard administration procedures is not required.

The Letter Checklist materials are reproducible. If you choose to print the lowercase and uppercase letters as a double-sided letter card, use paper with sufficient thickness to prevent letters on the other side from showing through (which could make letter recognition more difficult for the child).

Directions: Tell the examinee that you will show him or her some letters that are all lowercase or all uppercase, as appropriate. You may ask the examinee to provide the letter names, letter sounds, or both. Consider recording one dot in the response box for each second while waiting for the response, which would give a rough indication of the speed of response.

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KTEA-3 Letter Checklist—Lowercase

Name: _____ Grade: _____ Date: _____

Item	Letter	Letter Name	Letter Sound	Score
1.	k			0 1
2.	o*			0 1
3.	z			0 1
4.	g*			0 1
5.	w*			0 1
6.	h			0 1
7.	q*			0 1
8.	i			0 1
9.	d			0 1
10.	a			0 1
11.	t			0 1
12.	g*			0 1
	u*			0 1

Letter Checklist

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		Letter Name	Letter Sound	
21.	V			0 1
22.	B			0 1
23.	I*			0 1
24.	F			0 1
25.	O			0 1
26.	Z			0 1
27.	D			0 1
28.	N			0 1

Total Correct ☐

Behavioral Observations

|	Check if observed		Check if observed
hesitated on names		confused letters by rotation (e.g., M/W)	
hesitated on sounds		confused letters by similar names (e.g., B/E)	
added "uh" to sounds (e.g., "buh" for clipped /b/ sound)			
guessed more than once on some letters			

Letter Checklist

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KTEA-3 Letter Checklist

G	M	Q	E
I	U	J	R
Y	L	C	K

Letter Checklist

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WIAT4 & Dyslexia

WIAT®4
Wechsler Individual Achievement Test
Fourth Edition
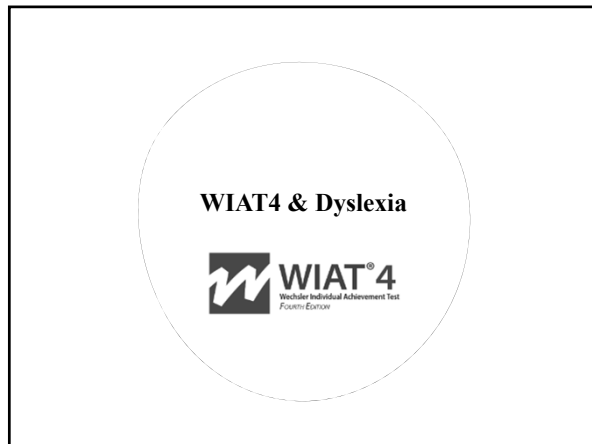
WIAT®4
Wechsler Individual Achievement Test
Fourth Edition

Features

5 New Subtests
- Phonological awareness
- Orthographic fluency
- Decoding fluency
- Sentence writing fluency
- Orthographic choice (Q-i only)

- Automated Scoring of Essay Composition
- Dyslexia Index Scores in every kit!

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PAL-II

Process Assessment of the Learner

Virginia Beringer, Ph.D.

An integrated assessment and intervention package

69

Reading Subtests	
Domain	*Subtest*
Phonological Decoding	Pseudoword Decoding
Morphological Decoding	Find the True Fixes
	Morphological Decoding Fluency
Silent Reading Fluency	Sentence Sense

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Writing Subtests	
Domain	*Subtest*
Handwriting	Alphabet Writing
Dysgraphia!	Copying Task A
	Copying Task B
Orthographic Spelling	Word Choice
Narrative Compositional Fluency	Compositional Fluency
Expository Note Taking and Report Writing	Expository Note Taking and Report Writing
	Cross-Genre Compositional and Expository Writing

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Reading-Related Subtests	
Domain	*Subtest*
Orthographic Coding	Receptive Coding Expressive Coding
Phonological Coding	Rhyming
	Syllables
	Phonemes
	Rimes
Morphological/Syntactic Coding	Are They Related?
	Does It Fit?
	Sentence Structure
Verbal Working Memory	Letters
	Words
	Sentences: Listening

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Reading-Related Subtests (cont.)

Domain	Subtest
RAN/RAS	RAN–Letters
	RAN–Letter Groups
	RAN–Words
	RAS–Words and Digits
	Oral Motor Planning
	Finger Sense
	Finger Localization
	Finger Recognition

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Intervention Guide for LD Subtypes

- *Available in Q-Global with a KTEA3 or WIATIII subscription; or a DALS license*
- Evaluates patterns of performance that are consistent with research-supported learning disability (LD) subtypes
- Summarizes how a child fits each subtype and provides recommendations for additional testing
- Includes a description of intervention characteristics & recommendations of research-supported instructional programs

---

Krz#grhv#lw#zrunB

- Rujdql}hv#gdwd#e|#k|srwkhvl}hg#OG#vxew|shv#
- Ghwhup lqhv#li#gdwd#lv#vxiilflhqw#dqg#frqvlwhqw#zlwk#rqh#ri#wkh#k|srwkhvl}hg#vxew|shv

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Intervention Guide for LD Subtypes

Purpose: What it *is* and *isn't*

- **Provides targeted intervention suggestions based on research-supported LD subtypes.**
- **Does <u>not</u> identify or diagnose SLD**
- **Does <u>not</u> address difficulties attributed to SLD exclusionary criteria (e.g., sensory impairment, intellect. disability, ELL, emotional/behavioral issues**

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7 reading-related subtypes
- **Phonological**
- **Orthographic**
- **Mixed Phonological-Orthographic**
- **Language (OWL-LD, SLI, LLD)**
- **Comprehension**
- **Fluency/Naming speed**
- **Global**

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10 hallmark indicators: skills/abilities that define or differentiate between subtypes

Cognitive ability	**Phonological processing**
RAN	**Non-word reading**
Orthographic coding	**Word recognition**
Spelling	**Reading comprehension**
Listening comprehension	**Reading fluency**

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5 ancillary indicators: skills/abilities that are used to tailor recommendations.

Handwriting legibility & speed {dysgraphia}

Verbal comprehension & reasoning

Auditory verbal WM Processing speed

Perceptual reasoning

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Step 1

Select the area(s) of intervention for the student:

- ☑ **Reading**
- ☑ **Spelling**

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Step 2

Determine the relative skills & abilities for each of the hallmark and ancillary indicators
- **Indicate if the skill is a weakness or a strength**
- **Consider 2 or more sources of information when rating each skill/ability**
- **Enter additional data in the open fields**

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Step 3: Generate Report

Report components:
Description of subtype
Pattern of Strengths and Weaknesses
Suggestions for Intervention
General Approach
Naming Speed {if RAN is a weakness, discuss as double-deficit}
Language Processing: Phonological Processing, Vocabulary
Basic Reading
Reading Comprehension
Reading Fluency
Spelling
Handwriting {if handwriting legibility/speed is a weakness}
Examples of Evidence-Based Programs

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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**

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Intervention Guide: MEGHAN

Intervention report for Meghan Green.

What are the areas of Intervention?

Select Areas of Intervention   Next: Review Skills & Abilities   Generate Report

Select the areas for which you want to evaluate Meghan's assessment data for a specific learning disability subtype. This Intervention Guide will provide a report that describes a subtype that is a likely fit and provides guidance for tailoring interventions, as well as research-supported programs to consider.

Area(s) of Intervention

☑ Reading
☑ Spelling

The first release of this Intervention Guide for LD Subtypes includes select subtypes of reading-related learning disabilities. Additional subtypes may be added in the future based on customer feedback regarding the usefulness of this tool.

Example Report: Meghan

DESCRIPTION OF SUBTYPE: PHONOLOGICAL

Meghan's pattern of performance across language and academic domains is similar to that of students with a **phonological core deficit**, sometimes referred to as *dysphonetic* or *phonological dyslexia*. Students with a phonological core 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.[104] In place of the phonological route, the visual route to word identification is used. These students over-rely on visual and orthographic cues while reading and may memorize whole words as a strategy for word recognition.[39]

Students with phonological dyslexia rarely use letter-to-sound conversion and they have marked difficulty reading nonsense words, but typically show a relative strength in reading exception words.[105] A phonological core deficit may be accompanied by deficits in cognitive processing[39] and may impact functioning in other academic skills such as writing.[54]

This report lists intervention suggestions for Meghan that may be appropriate for this subtype of learning disability. The Intervention Guide is not intended to identify or diagnose a specific learning disability.

PATTERN OF STRENGTHS AND WEAKNESSES
Meghan's performance suggests the following pattern of strengths and weaknesses.

Relative Strengths
   Listening Comprehension
   Naming speed
   Reading comprehension
   Orthographic coding (storing and processing letters and written words in working memory)

Weaknesses
   Phonological processing
   Decoding/Nonsense word reading

   Spelling
   Reading fluency
   Word recognition accuracy

SUGGESTIONS FOR INTERVENTION
General Approach
Consider the following recommendations for planning the scope and overall approach to intervention for Meghan.

Determine the specific subskills that need to be taught
Gather data from error analysis results, curriculum-based measures, and other sources to help evaluate the specific skills within each content area that need to be taught.

Use explicit, systematic instruction, and allow discovery
Explicit teaching does not necessarily mean direct instruction or knowledge telling; rather, it means bringing knowledge into conscious awareness.[19]

   Use materials that explicitly highlight the rule or pattern that Meghan needs to learn (e.g., vary words by one feature and hold other things constant, such as changing the initial phoneme or the morpheme being taught). Provide repeated opportunities for Meghan to apply the rule or pattern.

   Allow Meghan to discover patterns and rules through word sorting and carefully controlled materials.

Examples of Evidence-based Programs

ALPHABETIC PHONICS[51,44]
Author: Cox, A. R.
Publisher: Educators Publishing Service
Category: Phonological Processing, Oral Expression, Decoding, Comprehension, Spelling, Handwriting
Age Range: 4-14
Grade Range: PK-8

ANIMATED LITERACY[TM58,106]
Author: Stone, J.
Publisher: J. Stone Creations
Category: Phonological Processing, Decoding, Vocabulary, Comprehension, Fluency
Age Range: 4-8
Grade Range: PK-3

LINDAMOOD PHONEME SEQUENCING (LiPS®) PROGRAM FOR READING, SPELLING, AND SPEECH[25,112]
Author: Lindamood, P. C., & Lindamood, P. D.
Publisher: Pro-Ed
Category: Phonological Processing, Decoding, Spelling
Age Range: 5-9
Grade Range: K-3

Case Study – John
Background Information

- Currently: 12 years, 5 months, 6th grade
- Preschool history of expressive & receptive language delays
- In 4th grade, diagnosed with ADHD, Inattentive type and dysthymic disorder
- Sixth grade teacher has concerns about academic performance in reading and writing

Developed in collaboration with Gail Cheramie, Ph.D.

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Academic History

- John was identified as at-risk in both reading and writing at the end of 4th grade and placed in the Fountas & Pinnell Leveled Literacy Intervention (LLI) program. Continued in the program through 5th grade, but made poor progress.
- Currently his reading in DRA3 is at Level 30 and should be at Level 60.
- John did not pass the STAAR in 4th and 5th grades.
- John's teacher indicates very poor reading comprehension and he failed reading in 5th grade (report card grade=64).

Ⓟ Pearson   KABC-II NU

FCI
Fluid Crystallized Index

SS 93

Overall, John demonstrates well-developed cognitive/intellectual ability, reasoning, and problem-solving skills as indicated by the Fluid Crystallized Index standard score of **93** in the **average** range.

Ⓟ Pearson

KABC-II NU Scores

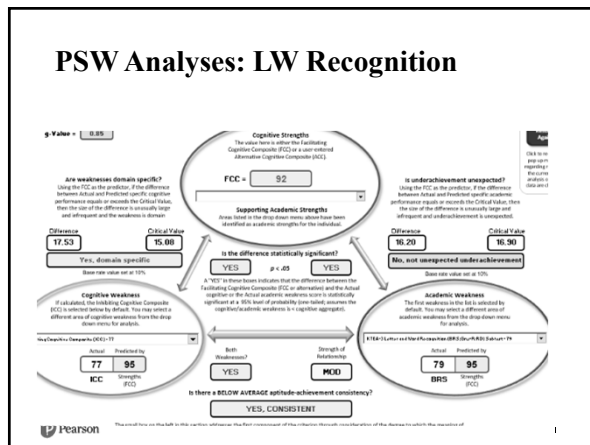| Scale	Scaled Score	Index	Standard Score
Number Recall	9		
Word Recall	8	**Sequential/Gsm**	91
Rover	12		
Block Counting	7		
Triangles	*6*	**Simultaneous/Gv**	97
Atlantis	9		
Rebus	9	**Learning/Glr**	94
Story Completion	8		
Pattern Reasoning	10	**Planning/Gf**	93
Verbal Knowledge	10		
Riddles	9	**Knowledge/Gc**	97

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Additional Tests

- Gs: WISCV PSI = 86
  - Coding = 7
  - Symbol Search = 8

- Ga: CTOPP-2 = 82
  - Elision = 6
  - Blending words = 8
  - Phoneme Isolation = 6

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KTEA-3: Achievement

Cluster/Test	Standard Score*	Composite	Range
Letter &Word Recognition	79		Below average
Reading Comprehension	80		Low average
Reading Composite		79	Below Average
Written Expression	76		Below average
Spelling	74		Below average
Written Language Composite		75	Below average
Math Concepts and Applications	84		Low average
Math Computation	94		Average
Math Composite		86	Low average

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PSW-A Data Summary

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PSW Analyses: LW Recognition

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CONCLUSIONS

- All data converge to indicate that John displays a significant academic deficit in Basic Reading Skills.
- John has several cognitive strengths including short-term memory (Gsm), long-term storage and retrieval (Glr), fluid reasoning (Gf), and crystallized knowledge (Gc).
- He has specific weaknesses in visuospatial processing (Gv:Vz), phonetic coding (Ga:PC), and processing speed (Gs)

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CONCLUSIONS

- John's weakness in phonetic coding is directly related to his deficit in Basic Reading Skills.
- The deficit in phonological processing reflects difficulty with the phonological skills of segmentation and manipulation of phonemes (phonemic awareness).
- These deficits affect the acquisition of basic reading skills and lead to difficulties in decoding unfamiliar words and recalling sound-symbol associations for letter patterns.
- John's spelling skills are also affected by this deficit.

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CONCLUSIONS

- John's overall level of intellectual ability falls within the average range (KABC-II Composite=93; FCC=94), and his academic achievement in reading is unexpected.
- The cognitive weakness is domain specific.
- John does meet the criteria for a learning disability (LD) in Basic Reading Skills based on this pattern of strengths of weaknesses.

- ***BUT WHAT IF WE WANT TO ADDRESS DYSLEXIA?***

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KTEA-3: Achievement

Cluster/Test	Standard Score*	Composite	Range
Phonological Processing	81		Low average
Nonsense Word Decoding	68		Average
Listening Comprehension	83		Low average
Letter Naming Facility	86		Below average
Sound Symbol		71	Below average
Decoding		72	Below average
Dyslexia Index Score		71	High Risk for Dyslexia

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Dyslexia Assessment Areas

- ✓ Letter knowledge
  - ✓ Direct measurement of this skill was not performed. John knows all letters and associated sounds. Such items are included at the onset of subtests, and John's basal was above this level.
- ✓ Reading words in isolation
- ✓ Decoding unfamiliar words accurately
  - ✓ KTEA-3 Letter & Word Recognition=79, Nonsense Word Decoding=68. Low to low average standard scores indicate significant difficulties in word decoding (Decoding Composite=72).
- ✓ Reading fluency (both rate and accuracy are assessed)
  - ✓ WIATIII Oral Reading Fluency = 79

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Dyslexia Assessment Areas

- ✓ Reading comprehension
  - ✓ KTEA-3 Reading Comprehension=80. John's comprehension was directly affected by his inability to read words.
- ✓ Spelling
  - ✓ KTEA-3 Spelling=76.
- ✓ Phonological/phonemic awareness
  - ✓ KTEA3 Phonological Processing 81, CTOPP Phonological Awareness cluster=82. Lower scores were obtained in segmenting and manipulating sounds in words. A deficit in phonological awareness is viewed as the hallmark of reading disability or dyslexia.
- ✓ Rapid naming of symbols or objects
  - ✓ KTEA3 Letter Naming Facility= 86

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John & Dyslexia

John demonstrates the primary academic skill characteristics of dyslexia: Difficulty reading words in isolation; Difficulty accurately decoding unfamiliar words; Difficulty with oral reading (slow, inaccurate, or labored); and Difficulty spelling. He displays a weakness in phonological awareness which is presumed to be the causative or underlying factor in the reading deficit. This pattern does exist within adequate ability to learn and is unexpected. Therefore, John meets the TEA criteria for the condition of dyslexia.

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