Identification of Dyslexia and Reading Difficulties: Components of an Assessment

> Ray Boyd, M.S.E. Licensed Psychologist 11/05/2014

Dyslexia

- Characterized by weaknesses in phonological awareness or phonological processing
- Weaknesses in the explicit knowledge of the sound segments (or phonemes) which comprise words
- Phonemes are the building blocks we use to construct words and sentences when speaking, spelling and reading

Dyslexia

- So the current model of dyslexia focuses on "the distinctive sounds of language" (Shaywitz)
- Dyslexia is a weakness within the language system at the lowest level, compared to semantics, grammar, and discourse or connected sentences

Dyslexia

Dyslexic children or adults have difficulty

- converting letters into sounds
- recognizing the internal sound structure of words
- converting alphabetic characters into a linguistic code

Phonological awareness and processing:

 Important areas to measure when evaluating for possibility of dyslexia
Phonological awareness refers to a person's awareness of and understanding of the sound structure of his or her language (CTOPP-2)

Phonological awareness:

- Refers to an individual's explicit knowledge of the sound segments, or phonemes, which comprise words (Phonological Awareness Test – 2)
- When encountering a word, you have to decode a series of letters, store their associated sounds in short-term memory, and then blend these sounds to form words

Phonological awareness:

- For spelling, opposite process takes place
- First, retrieve the blended form of the word
- Break it down into sounds
- Represent them with corresponding letters

Phonological awareness:

 In order to read and spell, you have to be aware of the sound segments that are blended in to syllables and words (Robertson, Salter, 2007)

Phonological processing:

The ability to see or hear a word, break it down into discrete sounds, and then associate each sound with letters that make up a word (2012, Ghotit Itd.)

Assessment for dyslexia: Tests used

- Comprehensive Test of Phonological Processing – 2
- Phonological Awareness Test 2
- Test of Auditory Processing Skills 3
- Portions of Woodcock Johnson Tests of Cognitive Abilities – 4
- Oral and Written Language Scales 2

Assessment for dyslexia, cont.

- Phonological awareness and processing are measured by:
 - Asking the student to provide rhyming words
 - ii. Divide sentences into their words
 - . Divide words into syllables
 - iv. Segment words by phonemes

Assessment for dyslexia, cont.

- Identify initial, medial and final sounds in words
- Repeat words after deleting syllables or phonemes
- Isolate a sound in a word, and then change it to another phoneme to form a new word
- Blend syllables or phonemes to form words

Assessment for dyslexia, cont.

- Match pictures that have objects beginning with the same sound
- Recall numbers in order measures auditory sequencing and auditory memory abilities
- Repeat nonwords again, measures auditory memory and sequencing

Assessment for dyslexia, cont.

- Rapid naming The efficient retrieval of phonological information from long-term memory
- Related to word retrieval and reading fluency
- rapid naming is one of the most robust early indicators of potential reading difficulties (Norton, Wolf, 2011)

Assessment for dyslexia, cont.

- Rapid naming tasks do have a visual component
- Measures how fast an examinee can scan an array of visual symbols and encode a phonological response
- This is the same type of ability that underlies decoding when reading aloud (CTOPP-2, 2013)

Assessment for dyslexia, cont.

 Rapid naming tasks: Require an individual to recognize objects, colors, letters, and numbers against a time constraint

Assessment of dyslexia, cont.

- Rapid naming evaluates how easily and rapidly you can retrieve phonetic informaiton from long-term memory
- The ability to see a visual symbol and name it accurately and rapidly

Assessment for dyslexia, cont.

- Rapid naming tasks are one of the best predictors of later reading disability
- Children with naming speed deficits may become laborious, dysfluent readers

Assessment for dyslexia:

- Word retrieval a symptom of dyslexia
- Again, requires individual to name pictured objects as quickly as possible
- Provide names of objects in specific categories while being timed

Assessment for dyslexia, cont.

- Phoneme-grapheme tasks
- Presenting them with letters or phonemes, and then asking them to provide the corresponding sound (e.g., sm, er, ou, str, ai, oa)
- Decoding asking the student to blend sounds into nonsense words, which requires them to demonstrate sound-symbol correspondence (neep, reeg, burm, mupe, hoy)

Assessment for dyslexia, cont.

- According to Sally Shaywitz (Overcoming Dyslexia, 2004), "the ability to read nonsense words is the best measure of phonologic decoding skills in children."
- A.K.A: "Word attack" skills

Assessment for dyslexia, cont.

- Direct measurement of reading and written language skills
- Reading lists of words that become progressively challenging
- Reading nonsense words
- Oral reading
- Reading comprehension

Dyslexia, cont.

- Word reading efficiency by having a student read lists of actual words and nonsense words while being timed
- Reading vocabulary knowledge of word meanings

Dyslexia, cont.

- Spelling measure
- Written expression
- Writing a story
- Combining two sentences or more into one complete and grammatically correct sentence
- Capitalization and punctuation

Most commonly used instruments

- Woodcock Johnson Tests of Achievement – 4
- Wechsler Individual
- Test of Word Reading
- Gray Oral Reading Tests -
- Woodcock Reading
- Mastery Tests 3 Gray Silent Reading Tests
- reading comprehension) Phonological Awareness
- Test of Written Language

WISC-V

New subtests have been added, not as Measures of intelligence, but to help Identify difficulties in cognitive processing Associated with academic learning

Measures from WISC-V:

- Automaticity of visual-verbal associations
- Rapid naming task
- Is sensitive to specific learning disorders
- Reading, written expressions

WISC-V measure

- Naming speed quantity
- Rapid naming task
- Shows greater sensitivity to math skills and learning disorders in math

WISC-V measure

- Immediate Symbol Translation
- Visual-verbal pairs, then translates symbols into phrases or sentences
- Associated with reading decoding, word reading accuracy and fluency, text reading and reading comprehension

WISC-V measures

- Delayed Symbol Translation
- A measure of storage and retrieval, and delayed recall

WISC-V measure

- Recognition Symbol Translation
- Measures delayed recognition
- May help determine the effects of retrieval deficits on memory performance

Woodcock-Johnson Tests of Cognitive Abilities-IV Edition

- Measures evaluating the speed at which an individual can make visual symbol discriminations and identify common orthographic patterns
- Speed of lexical access name as many words as possible having a specific sound, substitute parts of a word to create a new word

Diagnosis of dyslexia

- Shaywitz, 2003, Overcoming Dyslexia:Pattern to look for when diagnosing
- dyslexia:
 - Difficulty reading individual words
 - Difficulty decoding nonsense or unfamiliar words
 - Reading comprehension stronger than decoding of words

Shaywitz, cont.

- Labored or inaccurate reading of passages
- Difficulty reading small function words, such as "the", "is", "for"
- Slow reading
- Weaknesses in spelling

Testing young adults

- Gather good historical information
- Administering tests to evaluate reading fluency is highly important
- Oral reading (Gray Oral, Woodcock Reading Mastery Tests)
- Nelson-Denny
- Nonsense words
- Speed in recognizing individual words and decoding nonsense words

Evaluating young adults:

- Determine if the reading problem is unexpected or does not fit with the individual's level of education or professional status (Shaywitz, 2004)
- Determine evidence of a specific phonologic weakness in contrast to strong functioning in other language areas, such as comprehension, vocabulary, verbal reasoning

References

Straight Talk About Psychological Testing for Kids by Ellen Braaten, PhD and Gretchen Felopulos, PhD, 2004, Guilford Press Woodcock-Johnson III: Reports, Recommendations and Strategies by Nancy Mather and Lynne E. Jaffe, 2002, John Wiley & Sons, Inc.

WISC-4 Advanced Clinical Interpretation by Weiss, Saklofske, Prifitera, and Holdnack. 2006. Academic Press

Resources and Organizations

- Association on Higher Education and Disability (AHEAD) www.AFIEAD.org Children and Adults with Attention Deficit Disorders (CHADD) www.chadd.org
- Council for Exceptional Children
- International Dyslexia Association (IDA)
- Learning Disabilities Association of America (LDA) www.Idanatl.org
- Recording for the Blind & Dyslexic (RFB&D)

How to Read, Understand, and Use Psychoeducational Reports by Dr. Sherry Mee Bell from Keys to Effective LD **Teaching Practice**

Accommodations for Cognitive and Academic Deficits by John Seaman, Ph.D., School Psychologist

Other resources

- Overcoming Dyslexia, by Sally Shaywitz, 2003
- Parenting a Struggling Reader, by Susan Hall, Louisa Moats, 2002
- Essentials of School Neuropsychological Assessment, Daniel Miller, 2007