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IDENTIFYING, ASSESSING, AND TREATING DYSLEXIA AT SCHOOL

2

Acknowledgements

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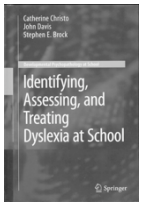

Presentation Objectives

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From this session it is hoped that participants will increase their …

1. Understanding of the defining features of dyslexia.
2. Ability to articulate the causes, prevalence, and associated features of dyslexia.
3. Ability to conduct screenings for and identify the presence of dyslexia.
4. Recognize empirically supported treatments for dyslexia

NOTE: The presenter, Stephen E. Brock, has a financial interest related to this presentation from sales of the book *Identifying, Assessing, and Treating Dyslexia at School*.

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Workshop Outline

1. Preface
2. Causes
3. Prevalence and Associated Conditions
4. Case Finding and Screening
5. Diagnosis
6. Assessment
7. Treatment

Preface

5

- The core symptoms of dyslexia are
  - "… frequently overlooked and put down to mere stupidity, or some error of refraction, very much to the disadvantage of the individual, because the individual was often blamed, bullied, laughed at, for a defect which was not his fault but his misfortune."

    E. Treacher Collins

Shaywitz (2003)

Preface

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- Learning to reading is
  - Associated with positive adult outcomes
- Reading disabilities are
  - Associated with juvenile delinquency
  - The most common SLD referral
- Early identification and treatment of reading disabilities is essential.
  - "Matthew effect"
  - Reduces at-risk readers from approximately 25 to 6%

Foorman (2003); Frieden (2004); Mellard & Woods (2007); O'Brien et al. (2007)

Preface

7

- Functional Consequences
  - Dyslexia "… can have functional consequences across the life span, including lower academic attainment, higher rates of high school dropout, lower rates of postsecondary education, high levels of psychological distress and poorer overall mental health, higher rates of unemployment and under-employment, and lower incomes. School dropout and co-occuring depressive symptoms increase the risk for poor mental health outcomes including suicidality, whereas high levels of social or emotional support predict better mental health outcomes ."

DSM-5

American Psychiatric Association (2013, p. 73)

Preface

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- Defining dyslexia
  - Discussion
    - What are the essential features of dyslexia?

Beaton (2004)

Preface

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- Defining dyslexia
  - Types of dyslexia
    - Acquired
    - Developmental

Beaton (2004)

Preface

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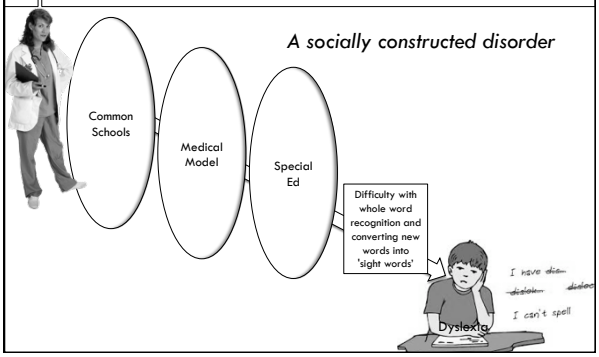
- Defining dyslexia
  - Historical origins
    1. 1676, Johann Schmidt, *acquired alexia*
    2. 1877, Adolf Kassmaul, *wortblindheit* (word blindness),
    3. 1887, Rudolf Berlin, *dyslexia*
    4. 1896, W. Pringle Morgan, developmental word blindness
  - Why was it around the turn of the last century that dyslexia was recognized as a developmental concern?
    - It was also about this same time that ADHD was recognized as a developmental concern.

Shaywitz (2003)

Preface



Preface

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- Defining dyslexia
  - Current conceptualizations
    - DSM-5: Specific learning disorder is a neurodevelopmental disorder with a biological origin that is the basis for abnormalities at a cognitive level that are associated with the behavioral signs of the disorder. The biological origin includes an interaction of genetic, epigenetic, and environmental factors, which affect the brain's ability to perceive or process verbal or nonverbal information efficiently and accurately.
    - With impairment in reading 315.00 (F81.0):
      - Word reading accuracy
      - Reading rate or fluency
    - With impairment in written expression 315.2 (F81.81):
      - Spelling accuracy

American Psychiatric Association (2013, pp. 67-68)

Preface

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- Defining dyslexia
  - Current conceptualizations
    - DSM-5
    - NOTE: *Dyslexia* is an alternative term used to refer to a pattern of learning difficulties characterized by problems with accurate or fluent word recognition, poor decoding, and poor spelling abilities. If dyslexia is used to specify this particular pattern of difficulties, it is important also to specify any additional difficulties that are present, such as difficulties with reading comprehension or math reasoning.
    - Difficulties learning to map letters with the sounds of one's language – to read printed words (often called dyslexia) – is one of the most common manifestations of specific learning disorder.

American Psychiatric Association (2013, pp. 67-68)

Preface

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- Defining dyslexia
  - Current conceptualizations
    - *Reading disability is a reading and language-based learning disability, also commonly called dyslexia. For most children with learning disabilities receiving special education services, the primary area of difficulty is reading. People with reading disabilities often have problems recognizing words that they already know. They may also be poor spellers and may have problems with decoding skills. Other symptoms may include trouble with handwriting and problems understanding what they read. About 15 percent to 20 percent of people in the United States have a language-based disability, and of those, most have dyslexia.*

National Institutes of Health and Development (2007, ¶8)

Preface

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- Defining dyslexia
  - Current conceptualizations
    - *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 relations 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 impact growth of vocabulary and background knowledge.* [emphasis added]

Lyon et al. (2003, p. 2)

Preface

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- Defining dyslexia
  - Current conceptualizations
    1. Etiology is a neurobiological phonological processing deficit
    2. Behavioral marker is difficulties with single word decoding
    3. Unexpected given other learning/cognitive skills and abilities, and the presences of quality instruction
    4. Can result in difficulty in constructing meaning from text and associated academic skill development

Christo, Davis, & Brock (2009)

Preface

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- Defining dyslexia
  - More than just a lack of skill development
    1. Early differences in phonological processing
    2. Phonological processing predicts reading skill development
    3. Interventions that target phonological processing improve reading skill
    4. Neuroimaging suggests functional brain differences
    5. A heritable disorder connected to specific genetic differences
  - Affected by language skills (other than sound processing) and instruction, but such is not the primary cause of the disability
    - The environment affects the expression of EVERYTHING

Christo, Davis, & Brock (2009)

Preface

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- Defining dyslexia
  - Phonological Processing
    - Manipulating the sounds of language
  - Rapid Naming
    - Fast, automatic retrieval processes
  - Orthographic Processing
    - Memory for the letters in words
  - Working Memory
    - 2012 by Melby-Lervag and Hulme found that there are no memory strategies that impact reading and writing (ES = -.05 for comprehension with children, .03 for comprehension with young children, and .13 for word decoding).

Preface

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- Special education involves categorical decisions

Eligible | **Not eligible**

- Reading skill is not categorical

Severe Dyslexia — **Fluent Automatic Reading**

- Thus, not all students with "dyslexia" will be eligible for/ require special education assistance
- Special education is not THE answer to the challenge of dyslexia
  - It is AN answer for a select group of students with more severe manifestations of dyslexia

Shaywitz (2003)

Preface

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- Reading integrates multiple systems
  - Visual system
  - Phonology
  - Working memory
  - Language
- Dyslexia is but one of several "internal" reasons for why a student might not be learning how to read.
  - In other words, not all students with reading difficulties and identified as SLD will be considered dyslexic

Preface

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- Basic assumptions
  - Reading process has two major components
    - **Decoding (word reading)** + comprehension (constructing meaning from text)
  - Dyslexia
    - Interferes with decoding

Christo (2015)

Preface

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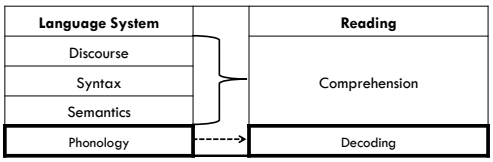
- Basic assumptions
  - Does not reflect an overall defect in language
    - Although it can co-exist with such
  - It is a localized weakness with a specific part of the language system: the phonological module



Shaywitz (2003)

Preface

23

- Basic assumptions
  - What is a phoneme?
    - "The root of that word is Greek"
    - The smallest unit of speech that distinguishes one word from another
    - The fundamental element of the language system
    - The essential building block of all spoken and written words
  - Dyslexic children have difficulty developing awareness that words are comprised of phonemes
    - "children who are dyslexic perceive a word as an amorphous blur, without an appreciation of its underlying segmental nature." (p. 44)

Shaywitz (2003)

Preface

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- Basic assumptions
  - Development of the *Alphabetic Principle*
    1. General awareness that words have parts
    2. Specific awareness that these parts are sounds
    3. Linkage of these sound parts to the printed word
    4. "Finally, he comes to understand that the printed word and the spoken word are related. He knows that the printed word has an underlying structure an that it is the same structure he hears in the spoken work. He understands that both spoken and written words can be pulled apart based on the same sounds, but in print the letters represent these sounds." (p. 44)

Shaywitz (2003)

Preface

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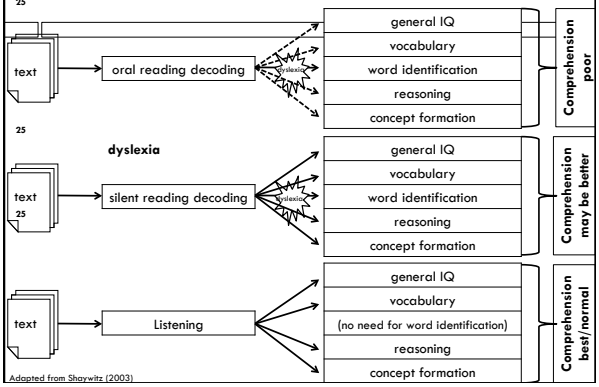

Adapted from Shaywitz (2003)

Preface

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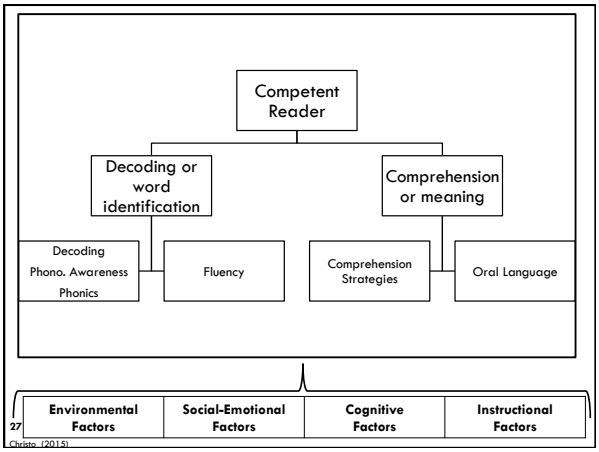
- Basic assumptions
  - Multiple components of reading must be taught in a systematic, explicit manner that also immerses children in language and text

Christo (2015)



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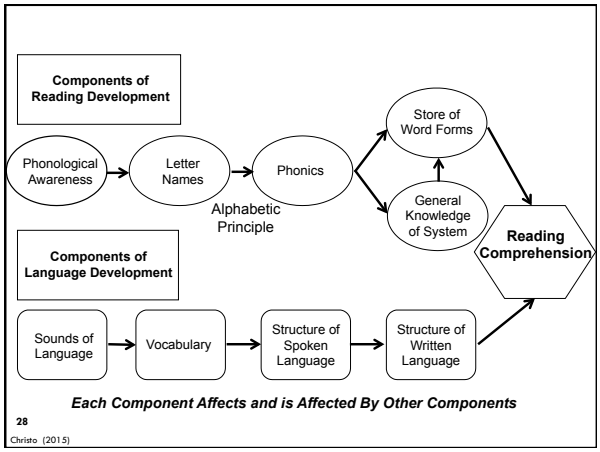
Christo (2015)



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Christo (2015)

Preface

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- Becoming automatic readers
  - Word based skills must be automatic
  - All words become sight words
  - Can't "not read"
  - Critical for higher order reading skill

Christo (2015)

Preface

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- To summarize
  - TED Ed: What is Dyslexia

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Workshop Outline

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Causes

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- Genetics
  - Heritability
    - .55 ± .22
  - Chromosomes 6 and 15 strongest links to reading
    - 1, 2, and 18 also implicated
  - Chromosome 6
    - Increased risk for both dyslexia and ADHD

Pennington & Olson (2005); Christo et al. (2009); Willcutt et al. (2002)

Causes

33

- Environment
  - Not completely heritable
  - Supports the notion of gene x environment interactions
  - A genetic predisposition to dyslexia can be exacerbated or mitigated by the environment
  - While up to 20% of children are "at risk" for dyslexia, the "environment" (i.e., appropriate early intervention) reduces prevalence of dyslexia to 2-6%

Christo, Davis, & Brock (2009)

Causes

34

- Neurobiological Structures
  - Good readers use different parts of the brain than do dyslexic readers
    - The reading system relies on 3 inter-related brain structures
      1. Parieto-temporal (slow word analysis)
      2. Occipito-temporal (automatic recognition of word form)
      3. Broca's area/Interior frontal gyrus (articulation/word analysis)
    - Good readers activate the back of the brain
      - Highly skilled readers make use of the occipito-temporal region
    - Dyslexic readers overutilize the left frontal (Broca's area) and right frontal regions

Christo, Davis, & Brock (2009); Shaywitz (2003)

Causes

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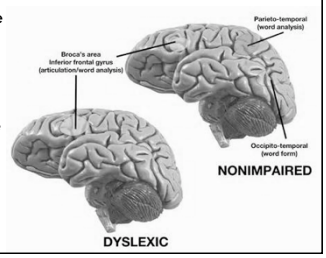
- Neurobiological Structures
  - Good readers use different parts of the brain than do dyslexic readers
    - Under activation of the back for the brain is a neural signature of dyslexia
    - Brain activation profile can normalize after intervention



Christo, Davis, & Brock (2009); Shaywitz (2003)

Causes

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- Psychological processes
  - Visual processing ?
  - Temporal processing
  - **Phonological core deficits**
  - Rapid naming deficit
  - Double deficit

Christo, Davis, & Brock (2009)

Causes

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- Visual Processing?
  - Visual discrimination
  - Fixation Stability
  - Magnocellular System Efficiency
  - Visual Integration
  - Spatial Relations

Christo, Davis, & Brock (2009)

Causes

38

- Visual Processing?
  - American Academy of Pediatrics, American Academy of Ophthalmology, and American Association for Pediatric Ophthalmology and Strabismus (1998) stated that eye defects, subtle or severe, do not cause reversal of letters, words, or numbers. Claims of improved reading and learning after visual training, neurologic organization training, or use of colored lenses are almost always based on poorly controlled studies that typically rely on anecdotal information.
  - An AAP technical report reinforces a 2009 policy statement that said there is no scientific evidence to indicate dyslexia or other learning disabilities are caused by vision problems. In addition, there is no benefit to using vision training or other related techniques to help children with these disabilities.

Christo, Davis, & Brock (2009)

Causes

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- Temporal Processing
  - That means a difficulty tracking acoustic frequency changes occurring over time.
  - Can be identified early in life
    - Infants 4-6 months of age who were unable to hear sound differences when tones were too close together turned out to be language impaired, those infants who could hear the differences at high speeds developed language quicker and had normal language development
  - Suggests a casual link between the ability to process auditory input effectively and the ability to perceive phonemes

Christo, Davis, & Brock (2009)

Causes

40

- Phonological Core Deficit
  - Most researchers and practitioners consider a phonological deficit the core deficit of dyslexia
  - Perception, interpretation, recall and production of language at the level of the speech sound system
  - Includes:
    - pronouncing words
    - remembering names and lists
    - identifying words and syllables
    - giving rhymes
    - detecting syllable stress
    - segmenting and blending phonemes

Christo, Davis, & Brock (2009)

Causes

41

- Rapid Naming Deficit
  - Children who fail to name things they saw at the same speed as other children (letters or objects)
  - Because readers do not generally *name* the letters of a word in the process of reading, it is unlikely that the correlation of reading skill and naming speed reflects a simple association
    - Rather, naming speed is thought to provide a marker for underlying processes sensitive to precise and rapid timing requirements
    - The speed with which you name and the speed that you read is really important not just for the speed, but for the brain's ability to do these processes fast enough to allocate time to construct meaning from text (i.e., reading comprehension)

Christo, Davis, & Brock (2009)

Causes

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- Double Deficit
  - Both reading fluency and comprehension deficits
  - These children have different reasons for reading failure than the kids who have only phoneme awareness issues (deficits in phonological processing AND rapid naming)
    - Most impaired population
    - Most at risk
    - Differential effects on remediation and intervention
    - Highlights need to link intervention to assessment and to differentiate interventions

Christo, Davis, & Brock (2009)

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Workshop Outline

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Prevalence & Associated Conditions

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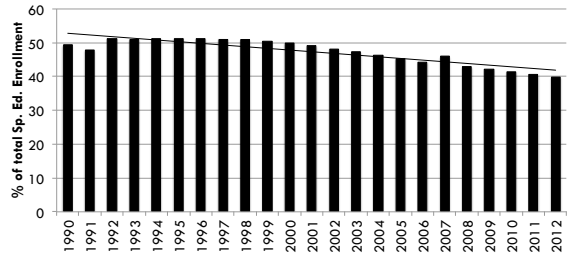
- Reading difficulties vs true dyslexia
  - Early reading interventions from kindergarten through second grade reduced the prevalence of reading disabilities to an extrapolated figure of about **2%** of the population.
  - Current percentage of children with reading disabilities in special education estimated to be about **2.7%** of the school population.
    - 1.8 of the 66.8 million school children ages 6 to 21 years.

Torgesen et al. (2001); Torgesen et al. (1997); U.S. Department of Education (2015)

Prevalence & Associated Conditions

45

- SLD as a % of all students eligible for special education (80-90% of students with SLD have a reading disability)



U.S. Department of Education (2015)

Prevalence & Associated Conditions

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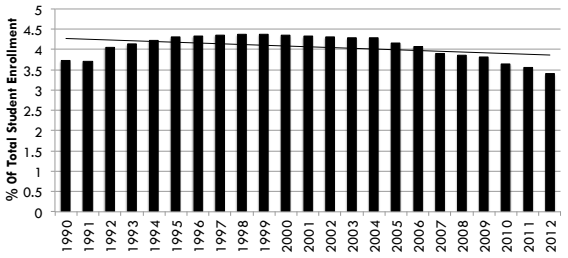
- SLD as a % of total student population (80-90% of students with SLD have a reading disability)



U.S. Department of Education (2015)

Prevalence & Associated Conditions

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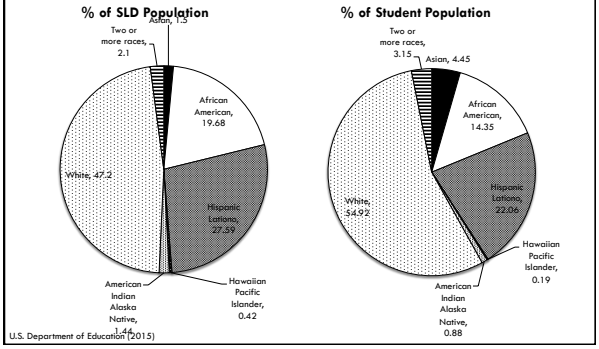

U.S. Department of Education (2015)

Prevalence & Associated Conditions

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- Gender differences
  - Using school identification procedures
    - 1:4 (one girl for every four boys)
  - Using clinical identification procedures
    - More boys than girls, but the differences are not significant
  - Discussion
    - Why, when schools identify reading disabilities, are more boys identified than girls?
    - Is there a problem with special education eligibility criteria, general education practices, or both?

Shaywitz (2003)

Prevalence & Associated Conditions

49

- ADHD
  - 36% of children with ADHD also have dyslexia
  - 18% of children with Dyslexia also have ADHD
    - Even in the absence of a reading skill deficit, children with AD/HD (predominantly inattentive type) have difficulty with rapid number naming and reading comprehension
- Communication Disorders
- Developmental Coordination disorders
- Autism
- Other mental disorders

American Psychiatric Association (2013); Brock & Krener (1996); Brock & Christo (2003); Christo, Davis, & Brock (2009)

Workshop Outline

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Case Finding and Screening

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- Family history
  - Family history of dyslexia is a strong risk factor that should be considered in any screening of children for dyslexia risk
    - Having a parent with dyslexia is a significant risk factor
    - Over 50% of achievement test score variance due to heritable factors
    - 66% of 4 year olds identified as at risk for reading failure due to having a parent with dyslexia were significantly delayed in reading at 8 years of age

Christo, Davis, & Brock (2009). See *Early Childhood Dyslexia Risk Factors* Handout

Case Finding and Screening

52

- Language skill development
  - Important to understanding the meaning of language (i.e., semantics and syntax)
- Speech skills development
  - Important to phonological processing and development of the alphabetic principle

Christo, Davis, & Brock (2009). See *Early Childhood Dyslexia Risk Factors* Handout

Case Finding and Screening

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- Language and speech skill development
  - Oral language
    - May have some relationship to later reading problems if the speech difficulties are not resolved during early reading instruction
    - Greater risk conveyed when speech difficulties are comorbid with more global language delays

Christo, Davis, & Brock (2009). See *Early Childhood Dyslexia Risk Factors* Handout

Case Finding and Screening

54

- Language and speech skill development
  - Vocabulary
    - Spoken vocabulary facilitates reading word recognition
    - May also create richer phonological representations
    - May be simply related to underlying (more fundamental) language facility important to development of reading skills (e.g., phonological processing)

Christo, Davis, & Brock (2009). See *Early Childhood Dyslexia Risk Factors* Handout

Case Finding and Screening

55

- Language and speech skill development
  - Phonological processing (rhyming detection/production, segmenting, phoneme recognition sound categorization)
    - Good early development of these skills positively predicts reading achievement
    - Poor early development of these skills, by themselves, is not as powerfully predictive of later reading achievement
      - Preschoolers who went on to later be identified as dyslexia also had family histories of dyslexia and tended to have more global language delays.
      - Preschoolers who went on to become average readers had a more mixed language profile (while low in phonological processing, had average or above performance on measures of syntax and semantics.

Christo, Davis, & Brock (2009). See *Early Childhood Dyslexia Risk Factors Handout*

Case Finding and Screening

56

- Language and speech skill development
  - Letter knowledge
    - One of the best preschool predictors of reading success.
    - May be facilitative of learning to read.
    - May also be a task that serves to represent the outward manifestation of
      - cognitive processes (verbal memory)
      - predispositions (interest in books)
      - environmental factors (access to print)

    important to reading.

Christo, Davis, & Brock (2009). See *Early Childhood Dyslexia Risk Factors Handout*

Case Finding and Screening

57

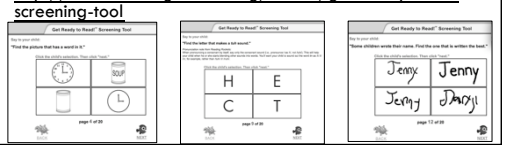
- Otitis media (OM)
  - Conflicting results in studies examining the relationship between OM and later academic outcomes
    - Roberts et al. (2002) did not find any long term detrimental effects of a Hx of OM on word recognition.
    - Winskel (2006) reports that children in grades 1 and 2 with a Hx of OM were deficient on phonological, semantic, and reading abilities.
      - The impact of OM most pronounced when occurring between 6- and 18-months.
      - The fluctuating hearing loss associated OM (and not OM per se) interferes with development of speech sound representations, making mapping of print to speech more challenging.

Christo, Davis, & Brock (2009); Roberts et al. (2002); Winskel (2006); See *Early Childhood Dyslexia Risk Factors Handout*

Case Finding and Screening

58

- Preschool screening
  - Family history
  - Letter naming
  - Sentence memory
- Specific measures
  - *Phonological Abilities Test* (Muter, Hulme, & Snowling, 1997)
  - *Get Ready to Read* (Reading Rockets)
    - http://www.readingrockets.org/article/get-ready-read-screening-tool



Christo et al. (2009)

Case Finding and Screening

59

- Kindergarten screening
  - ~~Visual processing~~
  - Phonological awareness
  - Vocabulary
  - Naming speed tasks

Christo, Davis, & Brock (2009)

Case Finding and Screening

60

- Kindergarten screening
  - ~~Visual processing~~
  - Phonological awareness
  - Vocabulary
  - Naming speed tasks

Christo, Davis, & Brock (2009)

Case Finding and Screening

61

- Kindergarten screening
  - Screening measures
    - *Ready to Learn* (Fawcett, Nicolson, & Lee, 2004)
    - *Test of Phonological Awareness* (2nd ed.; PLUS; Torgesen & Bryant, 2004)
    - *Test of Auditory Analysis Skills* (Rosner, 1979)
    - *Yoppp-Singer Test of Phoneme Segmentation* (Yopp-Singer; Yopp, 1995)
    - *Test of Early Reading Ability (3rd ed.; Rieid, Hresko, & Hammill, 2004)*
    - *Dynamic Indicators of Basic Early Literacy Skills (Good et al., 2003)*

Christa, Davis, & Brock (2009)

Case Finding and Screening

62

- Kindergarten screening
  - Screening measures

Test	Age Range	Phonological Processing	Naming Speed	Knowledge of letters/ print	Vocabulary	Other
Ready to Learn	4.5-6.5	YES	YES	YES	YES	Memory, Motor skills
TOPA	5.0-8.0	YES				
TAAS	K to 3rd	YES				
Yopp-Singer	K to 2nd	YES				Comprehension
TERA-3	3.5-8.5	YES		YES		
DIBELS	K-3rd	YES	YES	YES		

Christa, Davis, & Brock (2009)

Case Finding and Screening

63

- Kindergarten screening
  - Screening measures
    - Letter knowledge measured at the beginning of K the best predictor of mastering basic reading skills.
      - However… such screening will yield false positives at the beginning of K.
      - Screening in the middle of K will reduce false positives
    - "Children who enter school with good language skills (i.e., phonologic, semantic, and syntactic skills), knowledge about the alphabet, and no family history of dyslexia are likely going to be successful readers."
    - "…the child with global language deficits, lack of alphabetic knowledge, and a family history of dyslexia is at high risk for reading disabilities."

Christa, Davis, & Brock (2009, p. 57)

64 Workshop Outline

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Diagnosis

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- DSM-5
  - Specific Learning Disorder
    - A. Difficulties learning and using academic skills, as indicted by the presence of at least one of the following [6] symptoms that have persisted for at least 6 months, despite the provision of interventions that target those difficulties:
      1. Inaccurate or slow and effortful word reading (e.g., reads single words aloud incorrectly or slowly and hesitantly, frequently guesses words, has difficulty sounding out word.
      2. "understanding
      3. "spelling"
      4. "written expression"
      5. "number sense
      6. "mathematical reasoning"

American Psychiatric Association (2013, p. 66)

Diagnosis

66

- DSM-5
  - Specific Learning Disorder
    - B. The affected academic skills are substantially and quantifiably below … chronological age, … cause significant interference with academic … performance … as confirmed by individually administered standardized achievement measures and comprehensive clinical assessment.
    - C. The learning difficulties begin during school-age years …
    - D. … not better accounted for by intellectual disabilities, uncorrected vision or auditory acuity, other mental or neurological disorders, psychosocial adversity, lack of proficiency in the language of academic instruction, or in adequate educational instruction.

    NOTE: The four diagnostic criteria are to be met based on a clinical synthesis of the individual's history(developmental, medial, family, educational), school reports, and *psychoeducational assessment*.

American Psychiatric Association (2013, p. 67; emphasis added)

Diagnosis

67

- DSM-5
  - Specific Learning Disorder
    - 315.00 (F81.0) With impairment in reading
      - Word reading accuracy
      - Reading rate or fluency
      - Reading comprehension
    - Note: Dyslexia is an alternative term used to refer to a pattern of learning difficulties characterized by problems with accurate or fluent word recognition, poor decoding, and poor spelling abilities. If dyslexia is used to specify this particular patter of difficulties, it si important also to specify any additional difficulties that are present, such as difficulties with reading comprehension or math reasoning.

American Psychiatric Association (2013, p. 67)

Diagnosis

68

- DSM-5
  - Specific Learning Disorder
    - Severity specifier

      Mild: … the individual may be able to compensate or function well when provided with appropriate accommodations or support services …

      Moderate: … unlikely to become proficient without some intervals of intensive and specialized teaching…

      Severe: … unlikely to learn those skills without ongoing intensive individualized and specialized teaching for most of the school years. Even with an array of appropriate accommodations or services … the individual may not be able to complete all activities efficiently.

Severe **Moderate** **Mild** **Fluent Automatic Reading**

Sp.Ed. **Tier 2** **Tier 1**

American Psychiatric Association (2013, pp. 67-68)

Diagnosis

69

- DSM-5
  - Specific Learning Disorder
    - Comprehensive assessment is required. … No single data source is sufficient for diagnosis. … is a clinical diagnosis based on a synthesis of the individual's medical, developmental, educational, and family history; the history of the learning difficulty, including its previous and current manifestation; the impact of the difficulty on academic … functioning; previous or current school reports; portfolios of work requiring academic skills; curriculum-based assessments; and previous or current scores from individual standardized tests of academic achievement. If an intellectual, sensory, neurological, or motor disorder is suspected, then the clinical assessment … should also include methods appropriate for these disorders. Thus, comprehensive assessment will involve professionals with expertise in specific learning disorder and psychological/cognitive assessment.

American Psychiatric Association (2013, p. 70)

Diagnosis

70

- DSM-5
  - Specific Learning Disorder
    - Associated features supporting diagnosis
      - …frequently but not invariably preceded, in preschool years, by delays in attention, language, or motor skills.
      - An uneven profile of abilities is common.
      - … cognitive deficits associated with difficulties learning to read words are well documented …
        - But cognitive testing, neuroimagining, or genetic testing are not useful for diagnosis at this time
      - … increased risk for suicidal ideation and suicide attempts.

American Psychiatric Association (2013, p. 70)

Diagnosis

71

- DSM-5
  - Specific Learning Disorder
    - Risk and prognostic factors
      - **Environmental.** Prematurity or very low birthweight … prenatal exposure to nicotine.
      - **Genetic.** Family history dyslexia and parental literacy skills predict literacy problems in offspring
      - **Course modifiers.** Comorbidity with ADHD is predictive of worse mental health outcome. Systematic, intensive, individualized instruction, using evidenced based interventions, may improve or ameliorate the learning difficulties in some individuals or promote the use of compensatory strategies in others, thereby mitigating the otherwise poor outcomes.

American Psychiatric Association (2013, p. 72)

72 Workshop Outline

1. Preface
2. Causes
3. Prevalence and Associated Conditions
4. Case Finding and Screening
5. Diagnosis
6. Assessment
7. Treatment

Assessment

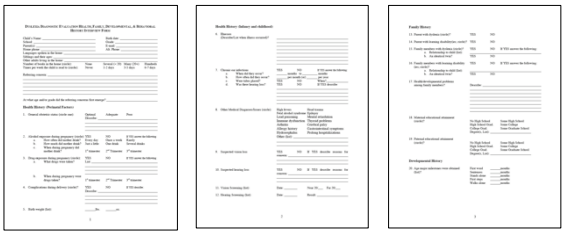
73

- Purposes of Assessment
  1. Non-categorical identification of dyslexia
  2. Categorical special education eligibility decision
  3. Inform interventions

Assessment

74

- Non-categorical identification of dyslexia
  - Developmental, family, and health history form



Christo, Davis, & Brock (2009)

Assessment

75

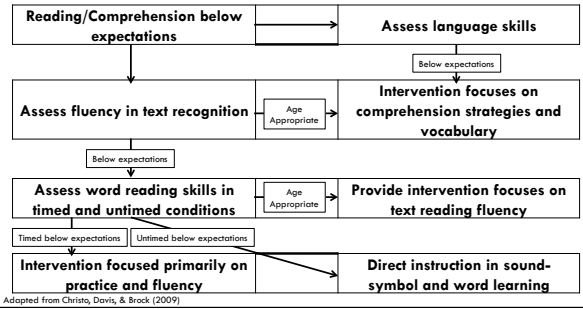
- Non-categorical identification of dyslexia
  - Weakness in reading skills
    - Reading fluency
      - GORT, GSRT
    - Oral language
      - KTEA, WJ
    - Word reading
      - TOWRE, KTEA, WJ
    - Spelling
      - KTEA, WJ

Christo, Davis, & Brock (2009)

Assessment

76

Non-categorical identification of dyslexia



Adapted from Christo, Davis, & Brock (2009)

Assessment

77

- Non-categorical identification of dyslexia
  - Weakness in reading related cognitive processes
    - Most commonly phonological processing
    - May also be
      - Naming speed,
      - Orthographic processing
      - Working memory

Christo (2015)

Assessment

78

- Non-categorical identification of dyslexia
  - Measures of Phonological Processing
  - CTOPP
    - Elision (7-24)
    - Blending Words (5-24)
    - Sound Matching (5-6)
    - Phoneme Isolation (7-24)
    - Blending Non-words (7-24)
    - Segmenting Non-words (7-24)
    - Segmenting Words (7-24
  - NEPSY
    - Phonological Awareness
    - Nonword Repetition
  - W-J
    - Sound Blending (cog.)
    - Incomplete Words (cog.)
    - Sound Awareness (ach.)
  - PAL
    - Rhyming
    - Syllables
    - Phonemes
    - Rimes
  - KTEA
    - Phonological awareness: Rhyming, Sound Matching, Blending, Segmenting, Deleting Sounds

Christo (2015)

Assessment

79

- Non-categorical identification of dyslexia
  - Measures of Orthographic Awareness
    - PAL
      - Alphabet Writing
      - Receptive Coding
      - Expressive Coding

Also may consider Jordan Right-Left Reversal Test

Not many instruments available to look at this.

Christo (2015)

Assessment

80

- Non-categorical identification of dyslexia
- Measures of Rapid Naming
  - CTOPP2
    - Rapid Digit Naming
    - Rapid Letter Naming
    - Rapid Color Naming
    - Rapid Object Naming
  - NEPSY-II
    - Speeded Naming
  - W-J-III
    - Rapid Picture Naming
  - PAL-II
    - RAN Words
    - RAN Digits
    - RAN Words and Digits
  - KTEA-II
    - Naming Facility: Objects, Colors, Letters

Christo (2015)

Assessment

81

- Non-categorical identification of dyslexia
  - Measures of Working Memory
    - WJ Working Memory Composite
    - PAL – Verbal Working Memory
    - WRAML – Working Memory Cluster

Christo (2015)

Assessment

82

Non-categorical identification of dyslexia

- Measures of Long Term Storage and Retrieval
  - Association
    - WRAML – Sound Symbol
    - WJ – Visual Auditory Learning
    - KABC – Atlantis
  - Rapid Retrieval
    - WJ
      - Retrieval Fluency
      - Rapid Naming
    - PAL
      - Naming Speed tests
    - CTOPP
      - Rapid Naming tests

Christo (2015)

Assessment

83

- Non-categorical identification of dyslexia
  - Oral Language Skills
    - "The ultimate goal of reading instruction is to help children acquire the knowledge and skills necessary to comprehend printed material *at a level that is consistent with their general verbal ability or language comprehension skills*"

      (Torgesen, 2002)
    - Conversely lack of reading may impact development of verbal ability

Christo (2015)

Assessment

84

- Non-categorical identification of dyslexia
- Oral Language Skills
  - Oral language clusters
    - WJ
    - KABC
  - Language specific tests
    - CELF
    - Test of Early Language Development
    - Oral and Written Language Scales
  - Vocabulary tests
    - PPVT
    - WISC: Vocabulary
    - DAS: Word Definition
    - KABC: Verbal Knowledge
    - WJ: Comprehension Knowledge

Christo (2015)

Assessment

85

- Non-categorical identification of dyslexia
  - Listening comprehension significantly higher than reading comprehension
    - Important criteria for dyslexia

Christo (2015)

Assessment

86

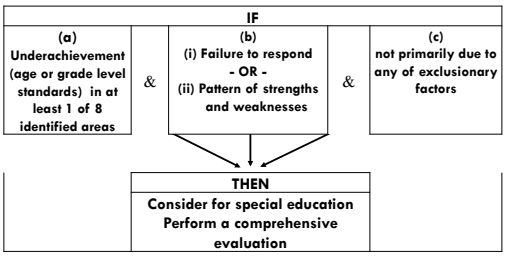
- Berninger's Non-categorical Differential Diagnosis
  1. Rule out exclusionary factors such as language, other developmental disorders
  2. Administer test of verbal comprehension, reading , spelling, decoding and fluency
     - Is verbal comprehension at least 90?
     - Is reading/spelling measure below average and 1 SD below verbal comprehension?
  3. Is student impaired (below 25th percentile) on phonological coding, orthographic coding, rapid naming? Having reading related difficulties in classroom
  - If exclusionary factors are ruled out and the answer to questions asked in 2 & 3 is "yes," consider diagnosis of dyslexia

Christo (2015)

Assessment

87

- Categorical special education eligibility decision



Christo, Davis, & Brock (2009); U.S. Department of Education [2006, CFR § 300.309(a)(b)(c)]

Assessment

88

- Categorical special education eligibility decision
  - Three SLD Criteria
    1. Documented Low Achievement
       - The child does not achieve adequately for the child's age or to meet State-approved grade-level standards in one or more of the following areas, when provided with learning experiences and instruction appropriate for the child's age or State-approved grade-level standards:
         (i) Oral expression
         (ii) Listening comprehension
         (iii) Written expression
         (iv) **Basic reading skill**
         (v) Reading fluency skills
         (vi) Reading comprehension
         (vii) Mathematics calculation
         (viii) Mathematics problem solving

U.S. Department of Education [2006, CFR § 300.309(a)(1), p. 46786]

Assessment

89

- Categorical special education eligibility decision
  - Three SLD Criteria
    1. Documented Low Reading Achievement
       - In relation to peers
         - Set criteria
         - Determine which measures to use
       - In relation to self
         - Set criteria
         - May be part of otherwise normal pattern of achievement

Christo (2015)

Assessment

90

- Categorical special education eligibility decision
  - Three SLD Criteria
    2. Documented Lack of Progress – **OR** – Pattern of Strengths and Weaknesses
       - The child does not make sufficient progress to meet age or State approved grade-level standards in one or more of the areas identified in paragraph (a)(1) of this section when using a process based on the child's response to scientific, research-based intervention.
       - The child exhibits a pattern of strengths and weaknesses in performance, achievement, or both, relative to age, State-approved grade level standards, or intellectual development, that is determined by the group to be relevant to the identification of a specific learning disability, using appropriate assessments …

U.S. Department of Education [2006, § 300.309(a)(2), p. 46786]

Assessment

91

- Categorical special education eligibility decision
  - Three SLD Criteria
    3. Consideration of Exclusionary Factors
       - The group determines that its findings under paragraphs (a)(1) and (2) of this section are not primarily the result of—
         (i) A visual, hearing, or motor disability;
         (ii) Mental retardation;
         (iii) Emotional disturbance;
         (iv) Cultural factors;
         (v) Environmental or economic disadvantage; or
         (vi) Limited English proficiency.

U.S. Department of Education [2006, CFR § 300.309(a)(3), pp. 46786-46787]

Assessment

92

- Categorical special education eligibility decision
  - Not due to exclusionary or other developmental factors
    - Review academic records to determine if reading problem is primarily due to:
      - Cultural-linguistic issues
      - Mental retardation
      - Sensory impairment or health
      - Insufficient instruction
    - What does the progress monitoring information tell us about the student?
    - When considering dyslexia it is important to rule out other developmental issues
      - Language delays
      - Mental retardation

Christo (2015)

Assessment

93

- Categorical special education eligibility decision
  - Appropriate Instruction
    - 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, as part of the evaluation described in §§ 300.304 through 300.306—
      (1) Data that demonstrate that prior to, or as a part of, the referral process, the child was provided appropriate instruction in regular education settings, delivered by qualified personnel; and
      (2) Data-based documentation of repeated assessments of achievement at reasonable intervals, reflecting formal assessment of student progress during instruction, which was provided to the child's parents. (U.S. Department of Education, 2006, p. 46787)

U.S. Department of Education [2006, CFR §300.309(b), p. 46787]

Assessment

94

- Categorical special education eligibility decision
  - Reading deficit not due to lack of instruction
    - Has child had adequate reading instruction.
      - IDEA 2004 explicit on this
      - *As defined in NCLB*
        - Contain the 5 areas noted in National Reading Panel
        - Be systematic, explicit
    - Has child had high quality, research based interventions?
      - School history
      - Data from an RtI model
        - Types of interventions
        - Progress made
    - Sources of information
      - History
      - Direct observations
      - Interviews with teachers/parents to further clarify problem

Christo (2015)

Assessment

95

- Categorical special education eligibility decision
  - Comprehensive Assessment
    - RTI does *not* replace a comprehensive evaluation and all other requirements required under 34 CFR §§ 300.301-300.306 (Evaluation and Reevaluations) are applicable. (slide 8)
    - A comprehensive evaluation requires the use of a variety of data-gathering tools and strategies even if RTI is used. (slide 9)
    - Results of RTI may be one component of the information reviewed. (slide 9)
    - The evaluation and reevaluation sections referenced in the above (34 CFR §§ 300.301-300.306) address the need to use a variety of assessment tools, assess a child in all areas of suspected disability, use technically sound, non-discriminatory assessment procedures in an appropriate manner, and assure that the assessment is both sufficiently comprehensive to identify all of a child's special education needs and provides information directly related to the student's educational needs.

U.S. Department of Education (2007)

Assessment

96

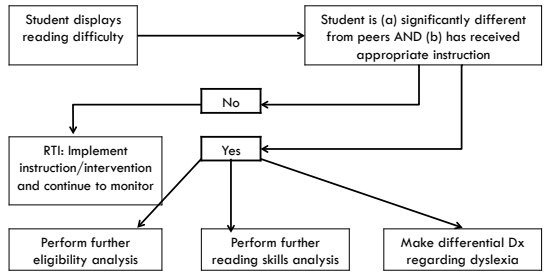
- Categorical special education eligibility decision
  - Criteria 300.309 (b)
    - For a child suspected of having a specific learning disability, the group must consider, as part of the evaluation described in §§300.304 through 300.306, data that demonstrates that—
      - 1) Prior to, or as a part of the referral process, the child was provided appropriate **high-quality, research-based instruction in regular education settings**, consistent with section 1111(b)(8)(D) and (E) of the ESEA, including that the instruction was delivered by qualified personnel; and

Christo (2015)

Assessment

97

Categorical special education eligibility decision



Christo, Davis, & Brock (2009)

Assessment

98

Framework for Eligibility as a Student with a Reading Disability

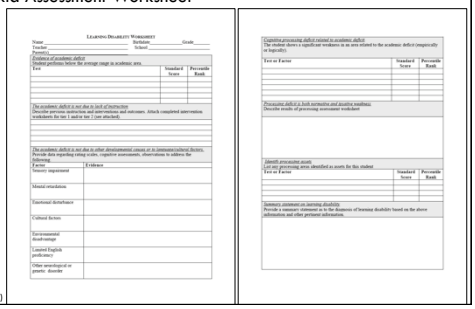
Step 1	Student is referred for consideration of eligibility because of reading difficulty.
Step 2	Formal assessment of reading skills to determine that student is not achieving adequately for his age or grade level standards.
Step 3	Determine if the reading deficit is due primarily to one of the exclusionary factors.
Step 4	Cognitive assessment to evaluate appropriate areas of development and rule out other disabling conditions.
Step 5	Analysis of cognitive and academic profile.
Step 6	Determination that the reading disability is affecting the student's performance to a significant degree and the student's needs cannot be met without special education.

Christo, Davis, & Brock (2009)

Assessment

99

- Categorical special education eligibility decision
  - Dyslexia Assessment Worksheet



Christo, Davis, & Brock (2009)

Assessment

100

- Categorical special education eligibility decision
  - Summary
    - Low achievement
    - Lack of progress
    - Role of exclusionary factors
    - Determination of appropriate instruction
    - Need for special education
    - Observation
    - **Specific documentation of disability**
    - Other considerations
      - Variety of assessment tools
      - Refrain from use of one measure as sole criterion
      - Use technically sound instruments assessing relative contribution of behavioral, cognitive, physical and development factors

Christo (2015)

101 Workshop Outline

1. Preface
2. Causes
3. Prevalence and Associated Conditions
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Treatment

102

- Most reading problems have to do with decoding and spelling
- Some readers may understand the system but lack fluency
- Some readers have trouble with comprehension

These reading problems require different interventions

Christo (2015)

Treatment

103

- National Reading Panel's Report and Recommendations
  1. Alphabetics
  2. Fluency
  3. Comprehension
  4. Teacher education and reading instruction
  5. Computer technology and reading instruction

Christo (2015)

Treatment

104

- International Dyslexia Association (IDA) Recommendations

Christo (2015)

Treatment

105

- Programs
  1. *Success for All*
  2. *Direct Instructional System of Teaching Arithmetic and Reading*
  3. *Reading Roots* and *Reading Wings*

Christo, Davis, & Brock (2009)

Treatment

106

- Curricula
  1. *Open Court Reading*
  2. *A Legacy of Literacy*
  3. *Wilson Program*
  4. *Language!*
  5. *Lindamood Phoneme Sequencing*
  6. *Great Leaps for Reading*
  7. *Visualizing/Verbalizing*

Christo, Davis, & Brock (2009)

Treatment

107

- *Controversial Treatments*
  - *Fast ForWord- Language* (Miller & Tallal, 1996)
  - *Earobics* (Cognitive Concepts, 2000)
  - *Tomatis* (1978)
  - *Irlen lenses* (Irlen, 1983)
  - optometric visual training (Rayner, 1983; Taylor, 1965)
  - *Davis Method* (Davis & Braun, 1997; 2003)
  - *Dore Program* (Dore & Rutherford, 2001)

Christo, Davis, & Brock (2009)

Treatment

108

- *Literacy Apps*
  - Print Awareness

Reading Rockets (2015)

Treatment

109

- *Literacy Apps*
  - Phonics

ABC Expedition | BoB Books #1 | FirstWords Deluxe
ABC Song Piano | BoB Books #2 | Interactive Alphabet
Alphabytes | Dr Seuss's ABC | iSpy Phonics

Reading Rockets (2015)

Treatment

110

- *Literacy Apps*
  - Phonics

Learn with Homer | Word Wagon
Simplex Spelling | Word Wizard
Wordball

Reading Rockets (2015)

Treatment

111

- *Literacy Apps*
  - Phonics

ABC Expedition | BoB Books #1 | FirstWords Deluxe
ABC Song Piano | BoB Books #2 | Interactive Alphabet
Alphabytes | Dr Seuss's ABC | iSpy Phonics

Reading Rockets (2015)

Treatment

112

- *Literacy Apps*
  - Comprehension

Aesop's Quest | Reading for Details | Popplet
Learn with Homer | Opposite Ocean | Same Meaning Magic
Fact or Opinion | Professor Garfield | Same Sound Spellbound

Reading Rockets (2015)

113 Case Example

Sam Smith
CA: 9-1
Grade: 3
Primary Language: English

Sam's Cognitive Scores

114

- WISC Full Scale IQ, 129 (90% CI = 124-132)
  - Working Memory Index, 97 (DS, 7; L-NS, 12)

Sam's Achievement Scores

115

- WIAT
  - Math Composite, 150
  - Language Composite, 99 (Spelling, 92)
  - Reading Composite, 96 (Pseudoword Decoding, 95)
- GORT
  - Rate, 8
  - Accuracy, 10
  - Comprehension, 10
- GSRT
  - A.E., 8-6; G.E., 2.8, %ile, 39 Silent Reading Quotient of 96
- TOWRE
  - Silent Word Efficiency, A.E., 7-9; G.E., 2.4; %ile, 17; S.S., 84
  - Phonemic Decoding Efficiency, A.E., 6-9; G.E., 1.6; %ile, 9; S.S., 80

Sam's Processing Scores

116

CTOPP

Subtest	%ile	S.S.	Composite	%ile	S.S
Elision	9	6	Phonological Awareness	8	79
Blending Words	16	7	Phonological Memory	12	82
Memory for Digits	9	6	Rapid Naming	5	76
Rapid Digit Naming	16	7			
Nonword Repetition	25	8			
Rapid Letter naming	9	6			

Sam's Processing Scores

117

PAL-RW

Content Subtest	Raw Score	Decile Score	Classification
Phonological Processing			
Syllables	9	80	Proficient
Phonemes	19	40	At-Risk
Rimes	4	30	At-Risk
Orthographic Processing			
Receptive Coding (short term memory)	33	20	Deficient
Word Choice (long term memory)	13	40	At-Risk
Rapid Automatic Naming			
Letters	73	30	At-Risk
Words	42	30	At-Risk
Digits	101	10	Deficient
Words & Digits	81	10	Deficient
Phonological Decoding			
Pseudoword Decoding	20	40	At-Risk

Is Sam Dyslexic?

118

- Demonstrates significant relative academic deficit in reading
- Math performance is superior
- Cognitive weakness (both normative and relative) in phonological processing
- Relative strength in oral language (and within average range)
- Has received appropriate instruction
- Impacts his educational performance

Is Sam Eligible for Special Education?

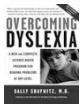
119

- Demonstrates significant relative academic deficit in reading
- Math performance is superior
- Cognitive weakness (both normative and relative) in phonological processing
- Relative strength in oral language (and within average range)
- Has received appropriate instruction
- Impacts his educational performance

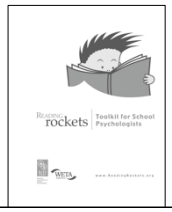
Resources

120

- Sally Shaywitz (2003)
  - Overcoming Dyslexia



- Reading Rockets
  - www.nasponline.org/resources/reading/NASPtoolkit.pdf



DYSLEXIA DIAGNOSTIC EVALUATION HEALTH, FAMILY, DEVELOPMENTAL, & BEHAVIORAL HISTORY INTERVIEW FORM

Child's Name: _____ Birth date: _____
School: _____ Grade: _____
Parent(s): _____ E-mail: _____
Home phone: _____ Alt. Phone: _____
Languages spoken in the home: _____
Siblings and their ages: _____
Other adults living in the home: _____

Number of books in the home (circle):	None	Several (< 20)	Many (20+)	Hundreds
Times per week the child is read to (circle):	Never	1-2 days	3-5 days	6-7 days

Referring concern: _____
_____
_____
_____
_____
_____

At what age and/or grade did the referring concerns first emerge? _____

Health History (Perinatal Factors)

1. General obstetric status (circle one): Optimal Adequate Poor
   Describe: _____
   _____
   _____
   _____

2. Alcohol exposure during pregnancy (circle): YES NO If YES answer the following:
   a. How often did mother drink? Every day Once a week Rarely
   b. How much did mother drink? Just a little One drink Several drinks
   c. When during pregnancy did mother drink? 1st trimester 2nd Trimester 3rd trimester

3. Drug exposure during pregnancy (circle): YES NO If YES answer the following:
   a. What drugs were taken? List: _____
   _____
   _____
   _____
   b. When during pregnancy were drugs taken? 1st trimester 2nd Trimester 3rd trimester

4. Complications during delivery (circle)? YES NO If YES describe:
   Describe: _____
   _____
   _____
   _____

5. Birth weight (list): _____lbs. _____oz.

Health History (Infancy and childhood)

6. Illnesses
(Describe/List when illness occurred)? _____

7. Chronic ear infections — YES NO — If YES answer the following:
   a. When did they occur? _____ months to _____ months
   b. How often did they occur? _____ per month (or) _____ per year
   c. Were tubes placed? YES NO When?_____
   d. Was there hearing loss? YES NO If YES describe

8. Other Medical Diagnoses/Issues (circle):

High fevers	Head trauma
Fetal alcohol syndrome	Epilepsy
Lead poisoning	Mental retardation
Immune dysfunction	Thyroid problems
Arthritis	Cerebral palsy
Allergy history	Gastrointestinal symptoms
Hydrocephalus	Prolong hospitalizations

Other (list): _____

9. Suspected vision loss — YES NO If YES describe reasons for concern: _____

10. Suspected hearing loss — YES NO If YES describe reasons for concern: _____

11. Vision Screening (list): Date: _____ Near 20/___ Far 20/___

12. Hearing Screening (list): Date: _____ Result: _____

Family History

13. Parent with dyslexia (circle)? YES NO

14. Parent with learning disability(ies; circle)? YES NO

15. Family members with dyslexia (circle)? YES NO If YES answer the following:
    a. Relationship to child (list): _____
    b. An identical twin? YES NO

16. Family members with learning disability (ies; circle)? YES NO If YES answer the following:
    a. Relationship to child (list): _____
    b. An identical twin? YES NO

17. Health/developmental problems among family members?

    Describe: _____
    _____
    _____
    _____
    _____
    _____
    _____
    _____

18. Maternal educational attainment (circle)?

    No High School Some High School
    High School Grad. Some College
    College Grad. Some Graduate School
    Degree(s, List): _____

19. Paternal educational attainment (circle)?

    No High School Some High School
    High School Grad. Some College
    College Grad. Some Graduate School
    Degree(s, List): _____

Developmental History

20. Age major milestones were obtained (list)?

    First word _____months
    Sentences _____months
    Stands alone _____months
    First steps _____months
    Walks alone _____months

Diagnostic History

21. Speech/Articulation disorders YES NO
    a. Type(s) of disorder (list): _____
    b. Type(s) of treatment (list): _____
    c. Duration of treatment (list): _____

22. Language disorders YES NO
    a. Type(s) of disorder (list): _____
    b. Type(s) of treatment (list): _____
    c. Duration of treatment (list): _____

23. Central Auditory Processing difficulties YES NO
    a. Type(s) of treatment (list): _____
    b. Duration of treatment (list): _____

24. AD/HD YES NO
    a. Type(s) of disorder (list): _____
    b. Type(s) of treatment (list): _____
    c. Duration of treatment (list): _____

25. Other diagnoses (list) _____

School History

26. Number of schools attended (list) _____

27. School attendance history (describe) _____

28. Prior special education services? YES NO

29. Educational interventions (describe) _____

Reading Related Behavioral History[1]

30. Infant (birth to 18 months)		
Focused eyes on an object	YES	NO
Reached for and held books	YES	NO
Held head steady and sat without support	YES	NO
Pointed with one finger at an object	YES	NO
Turned board pages, several at a time	YES	NO
Looked at pictures	YES	NO
Vocalized at, patted, and pointed to pages/pictures	YES	NO
Turned books right side up	YES	NO
Gave books to an adult to read	YES	NO
31. Toddler (18 months to 3 years)		
Turned board pages, one at a time	YES	NO
Carried books	YES	NO
Named familiar pictures	YES	NO
Filled in words in familiar stories	YES	NO
Pretended to read to others	YES	NO
Recited parts of well-known stories	YES	NO
Learned to handle paper pages	YES	NO
Found favorite pictures in books	YES	NO
Related text to pictures	YES	NO
Protested when words in a familiar story were read wrong	YES	NO
Read familiar books to self	YES	NO
Named family member pictures	YES	NO
Recognized familiar signs (e.g., fast food restaurants)	YES	NO
32. Preschool (3 to 5 years)		
Was able to handle/manipulate books	YES	NO
Turned paper pages, one at a time	YES	NO
Listened to longer stories	YES	NO
Was able to retell a familiar story	YES	NO
Understood what text is	YES	NO
Moved finger along text	YES	NO
"Wrote" name	YES	NO
Was able to pronounce words without problem (i.e., no baby talk)	YES	NO
Had no difficulty finding the right word in speech	YES	NO
Was able to rhyme words	YES	NO
Learned common nursery rhymes (e.g., "Jack and Jill")	YES	NO
Learned letters in own name	YES	NO
Was learning numbers/letters	YES	NO
Noticed if parents skipped a word while reading	YES	NO
Was able to name shapes and colors	YES	NO
Was able to recognize own name in print	YES	NO
Was able to repeat the alphabet without the "ABC" song	YES	NO
33. Kindergarten and First Grade (6 to 7 years)		
Learned letter sound associations	YES	NO
Did not confuse basic words (e.g., run and eat)	YES	NO
Learned that words come apart (e.g., "batboy" = "bat" and "boy")	YES	NO
Learned that words come apart (e.g., "bat" = "b" "aaa" "t")	YES	NO

Reading errors were phonetic (e.g., "bat"="bait," not "bat"="goat")	YES	NO
Read common one-syllable words (e.g., mat, cat, sat)	YES	NO
Enjoyed reading (i.e., no complaints about it being hard)	YES	NO

34. Second Grade and Beyond (8 years and older)

Was able to pronounce long, unfamiliar, complicated words	YES	NO
Speech was fluent (e.g., no pauses, hesitations, or a lot of "um's")	YES	NO
Language was precise (e.g., avoids "stuff" instead of object names)	YES	NO
Was able to "find" words easily when speaking	YES	NO
Needed little time to summon an oral response	YES	NO
Was able to quickly remember dates, names, phone numbers, etc.	YES	NO
Was able to read/sound out new and unfamiliar words	YES	NO
Could describe how to read new and unfamiliar words	YES	NO
Was able to read "function" words (e.g., "that" "an" "in")	YES	NO
Was able to read/sound out multi-syllable words	YES	NO
Enjoyed reading and has no fear of reading out loud	YES	NO
Oral reading became fluent (not slow and tiring)	YES	NO
Oral reading included inflections and sounds	YES	NO
Did well on multiple choice tests	YES	NO
Ability to read single words was as strong as passage comprehension	YES	NO
Finished tests on time	YES	NO
Spelling errors were close to true spelling	YES	NO
Was able to read math word problems	YES	NO
Was able to finish homework in a timely fashion	YES	NO
Read for pleasure	YES	NO
Was able to learn a foreign language	YES	NO
Did not substitute words unable to pronounce with words that had the same meaning (e.g., "car" for "automobile")	YES	NO

[1]Adapted from Coordinated Campaign for Learning Disabilities (1997), Reach Out and Read (n.d.), Shaywitz (2004a, 2004b), and The Help Group (n.d.)

LEARNING DISABILITY WORKSHEET

Name _____ Birthdate_____Grade_____

Teacher _____ School _____

Parent(s)_____

Evidence of academic deficit

Student performs below the average range in academic area.

Test	**Standard Score**	**Percentile Rank**

The academic deficit is not due to lack of instruction

Describe previous instruction and interventions and outcomes. Attach completed intervention worksheets for tier 1 and/or tier 2 (see attached).

The academic deficit is not due to other developmental causes or to language/cultural factors.

Provide data regarding rating scales, cognitive assessments, observations to address the following.

Factor	**Evidence**
Sensory impairment	
Mental retardation	
Emotional disturbance	
Cultural factors	
Environmental disadvantage	
Limited English proficiency	
Other neurological or genetic disorder	

Cognitive processing deficit related to academic deficit.
The student shows a significant weakness in an area related to the academic deficit (empirically or logically).

Test or Factor	**Standard Score**	**Percentile Rank**

Processing deficit is both normative and ipsative weakness
Describe results of processing assessment worksheet

Identify processing assets
List any processing areas identified as assets for this student

Test or Factor	**Standard Score**	**Percentile Rank**

Summary statement on learning disability
Provide a summary statement as to the diagnosis of learning disability based on the above information and other pertinent information.