ASSESSING AND INTERVENING FOR DYSLEXIA

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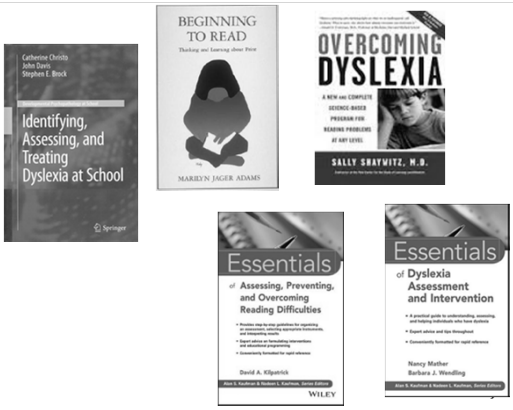
My Goal: To Provide You With Information About These Critical Questions

- What Is Dyslexia?
- How Does Dyslexia Affect Kids?
- How DO Kids Learn To Read?
- What Are the Causes of Dyslexia?
- How Do We Know Who Might Have Trouble Learning To Read?
- How Do We Identify Kids With Dyslexia?
- What Is The Best Way To Teach Kids with Dyslexia to Read?
- How Can Assessment Inform Intervention?



Parent groups

- www.decodingdyslexia.net
- www.understood.org
- www.ldonline.org
- www.schwablearning.org

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International Dyslexia Association (IDA) Standards

- Foundation concepts about oral and written language
- Knowledge of the structure of language
- *Structured language teaching*
- Interpretation and administration of assessments for planning instruction.
- Knowledge of dyslexia and other learning disorders.
- https://dyslexiaida.org/knowledge-and-practices/

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Ab 1369

56334.
The state board shall include "phonological processing" in the description of basic psychological processes in Section 3030 of Title 5 of the California Code of Regulations.

56335.
(a) The Superintendent shall develop program guidelines for dyslexia to be used to assist regular education teachers, special education teachers, and parents to identify and assess pupils with dyslexia, and to plan, provide, evaluate, and improve educational services to pupils with dyslexia. For purposes of this section, "educational services" means an evidence-based, multisensory, direct, explicit, structured, and sequential approach to instructing pupils who have dyslexia.

(b) The program guidelines shall include, but shall not be limited to, characteristics typical of pupils with dyslexia and strategies for their remediation, as well as information to assist educators in distinguishing between characteristics of dyslexia and characteristics of normal growth and development.

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Ab 1369

(c) In developing program guidelines pursuant to subdivision (a), the Superintendent shall consult with teachers, school administrators, other educational professionals, medical professionals, parents, and other professionals involved in the identification and education of pupils with dyslexia.

(d) The Superintendent shall complete the program guidelines in time for use no later than the beginning of the 2017–18 academic year.

(e) The Superintendent shall disseminate the program guidelines through the department's Internet Web site and provide technical assistance regarding their use and implementation to parents, teachers, school administrators, and faculty members in teacher training programs of institutions of higher education.

CASP position paper

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Cassidy-Mikulski Senate Resolution 275

Calling on Congress, schools, and State and local educational agencies to recognize the significant educational implications of dyslexia that must be addressed and designating October 2015 as ''National Dyslexia Awareness Month''.

Whereas dyslexia is— (1) defined as an unexpected difficulty in reading for an individual who has the intelligence to be a much better reader; and (2) due to a difficulty in getting to the individual sounds of spoken language, which affects the ability of an individual to speak, read, spell, and often, learn a language;

Whereas dyslexia is the most common learning disability and affects 80 percent to 90 percent of all individuals with a learning disability;

Whereas an individual with dyslexia may have weakness in decoding or reading fluency and strength in higher level cognitive functions, such as reasoning, critical thinking, concept formation, or problem solving;

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Cassidy-Mikulski Senate Resolution 275

Whereas great progress has been made in understanding dyslexia on a scientific level, including the epidemiology and cognitive and neurobiological bases of dyslexia; and

Whereas early diagnosis of dyslexia is critical for ensuring that individuals with dyslexia receive focused, evidence- based intervention that leads to the promotion of self- awareness and self-empowerment and the provision of necessary accommodations so as to ensure school and life success:

Now, therefore, be it Resolved, That the Senate— 1 (1) calls on Congress, schools, and State and 2 local educational agencies to recognize that dyslexia 3 has significant educational implications that must be 4 addressed; and 5 (2) designates October 2015 as "National Dyslexia Awareness Month".

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Department of Education Guidance Letter October 2015

State and local educational agencies (SEAs and LEAs) are reluctant to reference or use dyslexia, dyscalculia, and dysgraphia in evaluations, eligibility determinations, or in developing the individualized education program (IEP) under the IDEA. 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.

. . .Therefore, there could be situations where the child 's parents and the team of qualified professionals responsible for determining whether the child has a specific learning disability would find it helpful to include information about the specific condition (e.g., dyslexia, dyscalculia, or dysgraphia) in documenting how that condition relates to the child's eligibility determination. 34 CFR §§300.306(a)(l), (c)(l) and 300.308.

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Department of Education Guidance Letter October 2015

Stakeholders also requested that SEAs and LEAs have policies in place that allow for the use of the terms dyslexia, dyscalculia, and dysgraphia on a child's IEP, if a child 's comprehensive evaluation supports use of these terms. There is nothing in the IDEA or our implementing regulations that prohibits the inclusion of the condition that is the basis for the child's disability determination in the child's IEP. In addition, the IEP must address the child's needs resulting from the child's disability to enable the child to advance appropriately towards attaining his or her annual IEP goals and to enable the child to be involved in, and make progress in, the general education curriculum. 34 CFR §§300.320(a)(1), (2), and (4). Therefore, if a child 's dyslexia, dyscalculia, or dysgraphia is the condition that forms the basis for the determination that a child has a specific learning disability, OSERS believes that there could be situations where an IEP Team could determine that personnel responsible for IEP implementation would need to know about the condition underlying the child 's disability (e.g., that a child has a weakness in decoding skills as a result of the child's dyslexia).

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Department of Education Guidance Letter October 2015

In implementing the IDEA requirements discussed above, OSERS encourages SEAs and LEAs to consider situations where it would be appropriate to use the terms dyslexia, dyscalculia, or dysgraphia to describe and address the child's unique, identified needs through evaluation, eligibility, and IEP documents. OSERS further encourages States to review their policies, procedures, and practices to ensure that they do not prohibit the use of the terms dyslexia, dyscalculia, and dysgraphia in evaluations, eligibility, and IEP documents. Finally, in ensuring the provision of free appropriate public education, OSERS encourages SEAs to remind their LEAs of the importance of addressing the unique educational needs of children with specific learning disabilities resulting from dyslexia, dyscalculia, and dysgraphia during IEP Team

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WHAT IS DYSLEXIA?

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What is Dyslexia?

International Dyslexia Association, National Institute of Child Health and Human Development

One of most commonly accepted definitions:

"Dyslexia is a specific learning disability that ***is neurobiological in origin****. It is characterized by* ***difficulties with accurate and/or fluent word recognition*** *and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the* ***phonological component of language*** *that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction.* ***Secondary consequences*** *may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge."*

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What Is Dyslexia?

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

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

What Is Dyslexia?

Cassidy Mikulski Resolution

….1) defined as an unexpected difficulty in reading for an individual who has the intelligence to be a much better reader; and (2) due to a difficulty in getting to the individual sounds of spoken language, which affects the ability of an individual to speak, read, spell, and often, learn a language;

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What Is Dyslexia?

Commonalities across definitions

- Etiology is neurobiological
- Behavioral marker is difficulties with single word reading/decoding
- Can result in difficulty in constructing meaning from text and associated academic skills development
- Unexpected given other learning/cognitive skills and abilities, and the presences of quality instruction

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Christo, Davis, & Brock (2009)

Are There Subtypes of Dyslexia?

- Two types
  - Acquired
  - Developmental
- *Feifer*
  - *Dysphonetic Dyslexia*
  - *Surface Dyslexia*
  - *Mixed Dyslexia*
  - Reading Comprehension Deficits

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HOW DOES DYSLEXIA AFFECT KIDS?

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How does dyslexia affect kids?

- Learning to read 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 20% to 6%
  - Upside to dyslexia?

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

How does dyslexia affect kids?

- "Overall, national longitudinal studies show that more than 17.5 percent of the nation's children--about 10 million children--will encounter reading problems in the crucial first three years of their schooling" (National Reading Panel Progress Report, 2000;).
- Approximately 75% of students identified with reading problems in the third grade are still reading disabled in the 9th grade. (Shaywitz,2001)
- Students in the bottom 25% of the reading continuum have a trajectory of progress that diverges early from their peers who have learned to read successfully
- 1/3 of students with LD have been retained at least one year (ld.org)
- Around 40% of adjudicated youth are reading more than two years below grade level

HOW DO KIDS LEARN TO READ?

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Learning To Read

Understand the role of:

- Oral Language
- Phonological skill
- Word recognition
- Spelling
- Reading Fluency
- Reading Comprehension
- Written Expression

Language Processing Requirements

- Phonological Processing — **The sound**
- Orthographic Processing — **The look**
- Semantic Processing — **The meaning**
- Syntactic Processing — **The sentence**
- Discourse Processing — **The text**

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What is Reading?

- Reading – an extraordinary ability, peculiarly human and yet distinctly unnatural…acquired in childhood, forms an intrinsic part of our existence as human beings, and is taken for granted by most of us. (p.3)

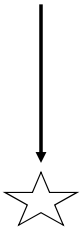
Shaywitz, S. (2003). Overcoming Dyslexia: A new and complete science-based program for reading problems at any level. New York: Knopf.

The most fundamental responsibility of schools is teaching students to read.

Teaching reading is rocket science (Moats, 1999)

Chall's Stages of Reading Development

- Pre-reading or emergent literacy
- Beginning of formal instruction
- Confirmation and fluency
- Reading to learn
- Multiple viewpoints
- Construction and reconstruction



Basic Assumptions

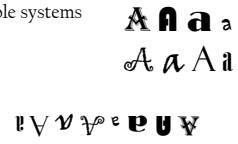
- Simple model of reading (Tumner and Gough)

Decoding × Language comprehension = Reading

- Competent reading rests on the development of basic skills
  - The "hands and feet of genius"
- Multiple components of reading must be taught in a systematic, explicit manner that also immerses children in language and text

Basic Assumptions

- Our brains are wired for speech – it is a biological specialization
  - Direct instruction is not needed
- Reading requires explicit instruction – no brain specialization
- Reading integrates multiple systems
  - Visual system
  - Phonology
  - Working memory
  - Language



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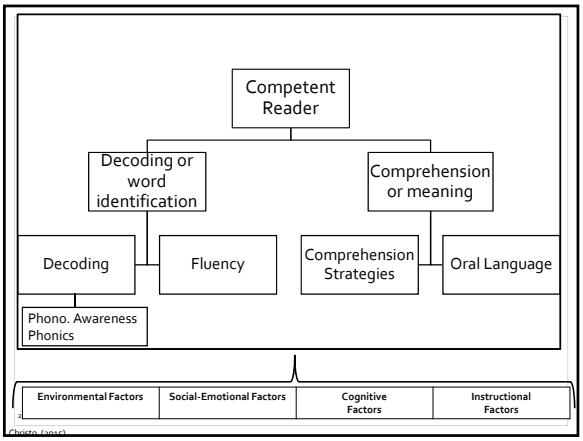

Christo (2015)

Acquiring The Alphabetic Principle

- *Alphabetic Principle*
- Children must learn how visual information is linked to speech – the words and sounds they know
- *"The first steps in becoming literate, therefore, require acquisition of the system for mapping between print and sound" – (Ziegler and Goswami, 2006)*
- Learn about word boundaries
- Develop understanding that words have parts (phonological awareness)
- Develop awareness about individual sounds (phonemic awareness)
- Link sounds to print

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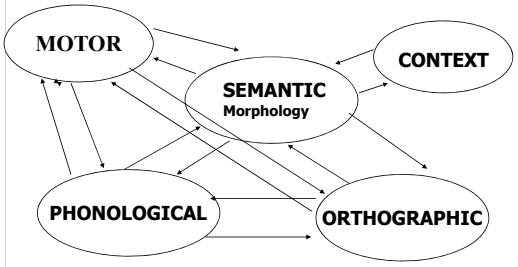
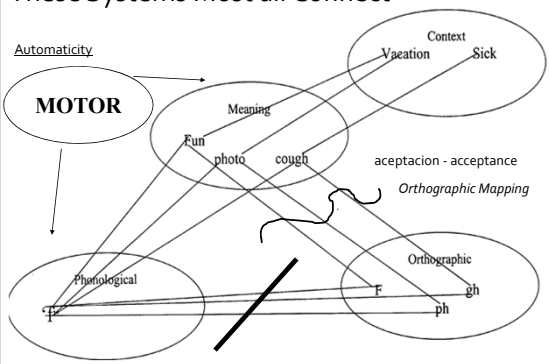
Information About Words Is Stored in Memory



These Systems Must all Connect



Development of "Sight" Words (automatic word recognition)

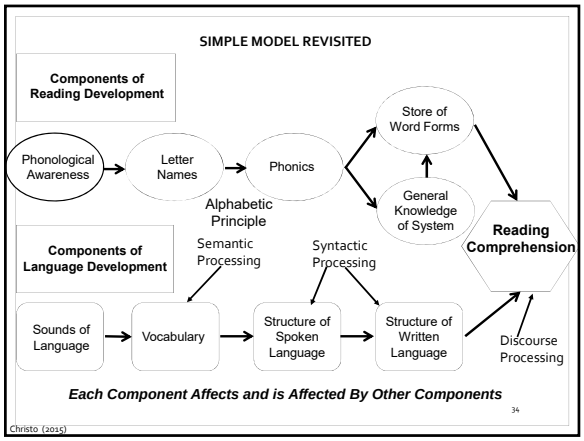
Ehri – orthographic mapping

- Pre-alphabetic
- Partial alphabetic
- Full alphabetic
- Consolidated
- Practice is essential

- **Share – self teaching**
- Through exposure to grapheme-phoneme connections

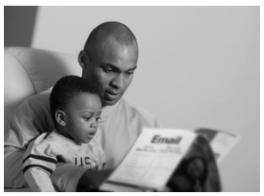
Automatic Readers:

- Develop generalized knowledge of the orthographic system
  - Develop word knowledge in tandem with spelling knowledge
  - Are aware of multi-letter units
  - Are aware of syllables and orthographic conventions
- Have reduced memory load while reading- **critical to comprehension**
- Requires
  - Development of internal, mental representations of words
  - Representations have meaning, sound and letter information (semantic, phonological, orthographic)
  - https://www.youtube.com/watch?v=oD1aMr8WzFk



Is It All About the Word? -----Well – Maybe Not All

- Story structure
- Language
- Background knowledge
- Comprehension
- From the Beginning
  - Hear the language
  - Understand the concept of symbol
  - Beginning phonological awareness
  - Print exposure – build orthographic knowledge
  - Story structure



Differences in Early Experiences

- In some homes children will have had about 25 hours of storybook experience by 1st grade (Teale, 2015) – in others thousands of hours
- From 0 to 200+ books in the home
- 32 million less words heard by age 5
- Producing half as many words at age 3
- Vocabulary deficits at school entry predict later reading

Bilingual Environments

- Concepts learned well in one language can be transferred to another
- Knowledge of phonemes may be absent for English Learners
  - Training helps
  - Children with no phonological problems catch up with their peers in 1 to 2 years
- National Literacy Panel on Language Minority Children
  - Profiles of both groups with reading problems are very similar

Good Readers:

- Have a wealth of information about how speech is represented in print.
  - They use this knowledge to generalize to new words
  - They use this knowledge for both decoding and encoding
- Have adequate language skills: vocabulary, syntax, phonology.
- Read relatively effortlessly so that they can devote their mental energies to content.
- Activate phonological code when reading.
- Recognize new printed words after 1-4 exposures
- Read up to five words + per second
- Read every word in order and visually process all letters in words.

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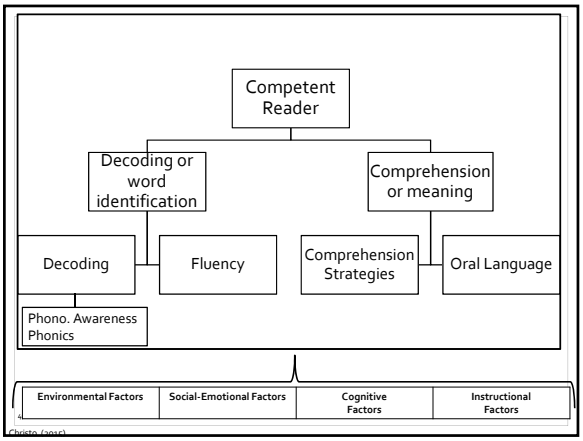
WHY DO SOME KIDS HAVE TROUBLE LEARNING TO READ?

Causes of dyslexia



Characteristics of Students With Reading Problems

- Most reading problems have to do with decoding and spelling
- Some readers may understand the system (phonics-decoding) but lack fluency
- Some readers don't know the system
- Some readers have trouble with comprehension
- Discrepancy within reading skills
  - Listening comprehension often better than
    - -Reading comprehension often better than
      - -Real word reading often better than
        - -Nonsense word reading

Phonological Processing

- **Phonological/phonemic awareness**
  - Perception, interpretation, recall and production of language at the level of the speech sound system
- **Phonological loop** or phonological scratch pad
  - Phonological information stored briefly
- **Rapid Naming** is considered by many a component of phonological processing and by others as different

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Phonological Awareness

Not all students with dyslexia have phonological awareness problems

- **Phonological Core Deficit**
  - Perception, interpretation, recall and production of language at the level of the speech sound system
  - Necessary but not sufficient for learning to read
  - Strongly linked to decoding problems
  - Linked to reading problems in multiple languages
- Phonological processing is an unnatural act.
  - Hard wired for understanding and production of speech
  - In some ways this makes reading more difficult

Phonological Awareness → Phonemic Awareness

- Go from phonological awareness to phoneme awareness
  - Rhyming
  - Blending
  - Segmenting
  - Deletion
  - Manipulation

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Rapid Naming

a n d o t u k l w c f p
b n x o w p e c k w d
s o g b h x e o g w u

- **Fast, Automatic Retrieval Processes**
- Differentiate dyslexic readers from average and other poor readers
- Are present in poor readers across languages
- Marker for quick access to phonological information
- Phonological process or different cognitive process
- May be more related to fluency

Double Deficit

- Deficits in phonological processing and rapid naming
- Most impaired population
- Most at risk
- Differential effects on remediation and intervention
- Difficulties in building a "reading brain" (Berninger)
- Highlights need to link intervention to assessment and to differentiate interventions

(Wolf and Bowers, 1999)

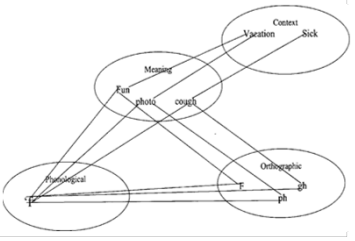
Orthographic Processing/Learning

- Creation of word forms requires the linking of print to sounds and of "chunking" letters into units
- Adds unique variance to some basic reading skills
- Question of delay or disability ?
- Result or cause ?

Retrieval of Visual – Phonological Links

- May also impact math – calculation
- Not just visual memory but the linking of visual-verbal
- Associative memory?

WRAML 2 Sound Symbol



Other Cognitive Processes

- Verbal working memory
  - Attend to differences in visual and verbal working memory
- Verbal ability
  - "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
- Processing Speed
- Attention and Executive Function

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Other Cognitive Processes

- No link to visual-spatial processing deficits
- Question of relation to auditory processing
  - Not generalized auditory processing
  - Link to language processing not clear
- Temporal Processing
  - Difficulty tracking acoustic frequency changes occurring over time.

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Other Processes

- Morphological awareness
  Awareness of structure of words and ability to use that knowledge
- Tests
  - Language assessments
  - PAL II

Are They Related		corner builder	corn build
Does It Fit	The boy ran _____		
	gluckable	gluckly	gluckness
Sentence Structure			
	Glamping is mox.		
	Mox glamping is		
	Moxly is glamping		
Find the True Fixes			
	painter	disease	
Morphological Decoding			
	word reading		
	hear, hears, hearing		

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Visual Processing: American Academy of Pediatrics (2009)

- Numerous studies have shown that **children with dyslexia or related learning disabilities have the same visual function and ocular health as children without such conditions**. Specifically, subtle eye or visual problems, including visual perceptual disorders, refractive error, abnormal focusing, jerky eye movements, binocular dysfunction, and misaligned or crossed eyes, do not cause dyslexia. In summary, research has shown that most reading disabilities are not caused by altered visual function. Many children with reading disabilities enjoy playing video games, including handheld games, for prolonged periods. Playing video games requires concentration, visual perception, visual processing, eye movements, and eye-hand coordination. Convergence and accommodation are also required for handheld games. Thus, if visual deficits were a major cause of reading disabilities, children with such disabilities would reject this vision-intensive activity.

www.pediatrics.org/cgi/doi/10.1542/peds.2009-1445

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American Association for Pediatric Ophthalmology and Strabismus

- **Do "training glasses" work?**
- The scientific literature shows no experimental evidence of any benefits from a low-plus "training glasses".
- **Does vision therapy improve learning disabilities and dyslexia?**
- Many scientific studies have demonstrated that ocular coordination, motility, and visual processing are normal in children with dyslexia. The scientific evidence does not support the use of eye exercises or behavioral/perceptual vision therapy in improving the long-term educational performance in children with learning disabilities.
- **Why might a teacher recommend vision therapy?**
- When a teacher notices that a student has problems with writing or fluent oral reading he/she may believe that the child has a vision problem. A common misconception is that dyslexia is a problem of letter or word reversals. Reversals of letters or words, and mirror writing occur in normal early readers and writers. Children with dyslexia are not unusually prone to reversals. So, although they do occur, reversals of letters or words, or mirror writing is not included in the definition of dyslexia. Letter and word reversals and skipping words have been demonstrated to be a symptom, not a cause, of reading disorders and have been shown to result from linguistic deficiencies rather than visual or perceptual disorders. Children with dyslexia often lose their place while reading because they struggle to decode a letter or word combination and/or because of lack of comprehension, not because of a "tracking abnormality."

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Heritability

- Genetics
  - Heritability
  - About 40% of children who have parent or older sibling with dyslexia will have difficulty in learning to read. (Scarborough, 1999)
- 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

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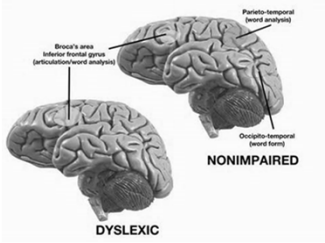
Pennington & Olson (2005); Christo et al. (2009); Willcutt et al. (2002)

Neurobiological Structures

- Good readers use different parts of the brain than do dyslexic readers
  - Under activation of the back of the brain is a neural signature of dyslexia



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

Causes - Conclusions

- Causes likely to be additive/interactive
- Use a hypothesis testing approach (Pearson, 2016)
- Consider compensatory factors
- Some risk factors greater than others but individuals compensate with strengths in other areas.

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ASSOCIATED CONDITIONS

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Dysgraphia

- Dysgraphia is the term associated with specific learning disabilities in writing. It is used to capture both the physical act of writing and the quality of written expression. Common characteristics include:
  - tight awkward pencil grip and body position
  - tiring quickly while writing, and avoiding writing or drawing tasks
  - trouble forming letter shapes as well as inconsistent spacing between letters or words
  - difficulty writing or drawing on a line or within margins
  - trouble organizing thoughts on paper
  - trouble keeping track of thoughts already written down
  - difficulty with syntax structure and grammar
  - large gap between written ideas and understanding demonstrated through speech

(NICHD)

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Fluency Problems

- More clearly linked to deficits in rapid naming than word reading problems
- Orthographic learning may be a factor
- Wolf and Katzir-Cohen (2001)
  - Reading fluency is both developmental in learning to read and an outcome of learning to read.
  - Developmental
    - Automaticity of sublexical processes, lexical processes and their integration perceptual, phonological, orthographic and morphological
  - Outcome
    - effortless decoding
    - smooth and accurate oral reading
    - Correct prosody
    - Attention allocated to comprehension

Reading Comprehension

- Problems generally linked to:
  - higher order processes
  - language
- Readers who are able to decode but not comprehend may have problems in
  - Working memory
  - Language (both oral and written)
  - Fluid reasoning

Comorbidity

- With math – about 30-40 % of children with reading disability will have math disorders
- With 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

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HOW DO WE KNOW WHO IS AT RISK FOR DYSLEXIA?

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Screening: Early Predictors

- Family history
  - Having a parent with dyslexia is a significant risk factor
  - 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
- Language skill development
  - Important to understanding the meaning of language (i.e., semantics and syntax)
    - Oral language
    - Vocabulary
- Speech skills development
  - Important to phonological processing and development of the alphabetic principle
  - Phonological processing

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Screening

- Letter knowledge
  - *Strong* preschool predictor of reading success.
  - May be facilitative of learning to read.
  - May also be a task that assesses:
    - cognitive processes (verbal memory)
    - predispositions (interest in books)
    - environmental factors (access to print)

    which are all important to reading.
- Otitis media (OM) (ear infections)
  - Conflicting results in studies examining the relationship between OM and later academic outcomes

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Screening

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

Shaywitz Dyslexia Screener
Ready to Learn (Fawcett, Nicolson, & Lee, 2004)
KTEA 3
WIAT 3
Test of Early Reading Ability (3rd ed.; Reid, Hresko, & Hammill, 2004)
Dynamic Indicators of Basic Early Literacy Skills (Good et al., 2003)
AIMSweb

- *"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."*

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Screening: Assessing Progress of Critical Skills (Good, Simmons, Kame'enui)

- Kindergarten
  - Phonological awareness (onset rhyme fluency, phonemic segmentation fluency)
  - Letter name fluency
  - Phonemic segmentation
- First Grade
  - Letter Name and Phonemic segment. continue
  - Alphabet principle (nonsense word fluency)
  - Accuracy and fluency with connected text (oral reading fluency)
- Second Grade
  - Accuracy and fluency with connected text (oral reading fluency)

HOW DO WE IDENTIFY STUDENTS WITH DYSLEXIA?

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Assessment

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

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Diagnosis

- DSM-5 – possible 504 plan if not special education
  - 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"

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American Psychiatric Association (2013, p. 66)

Diagnosis

- 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, medical, family, educational), school reports, and *psychoeducational assessment*.

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

Diagnosis

- 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 is important also to specify any additional difficulties that are present, such as difficulties with reading comprehension or math reasoning.

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American Psychiatric Association (2013, p. 67)

Assessment

- Berninger's 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

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CA Code of Regulations Eligibility Criteria : 3030 (b) 10)

(10) Specific learning disability means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may have manifested itself in the imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, **dyslexia**, and developmental aphasia. The basic psychological processes include attention, visual processing, auditory processing, sensorimotor skills, phonological processing, cognitive abilities including association, conceptualization and expression.
(A) Specific learning disabilities do not include learning problems that are primarily the result of visual, hearing, or motor disabilities, of intellectual disability, of emotional disturbance, or of environmental, cultural, or economic disadvantage.

CA Code 3030. (b) (10) (B) Severe Discrepancy Option

(B) In determining whether a pupil has a specific learning disability, the public agency **may consider** whether a pupil has a severe discrepancy between intellectual ability and achievement in oral expression, listening comprehension, written expression, **basic reading skill**, reading comprehension, mathematical calculation, or mathematical reasoning. The decision as to whether or not a severe discrepancy exists shall take into account all relevant material which is available on the pupil. **No single score or product of scores, test or procedure** shall be used as the sole criterion for the decisions of the IEP team as to the pupil's eligibility for special education. In determining the existence of a severe discrepancy, the IEP team shall use the following procedures:

CA Code 3030 (b) (10) (C) (1):

(C) Whether or not a pupil exhibits a severe discrepancy as described in subdivision (b)(10)(B) above, a pupil may be determined to have a specific learning disability if:

1. The pupil does not achieve adequately for the pupil'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 pupil'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, **and**

CA Code 3030 (b) (10) (C) (2): RTI or PSW

2. (i) The pupil does not make sufficient progress to meet age or State-approved grade-level standards in one or more of the areas identified in subdivision (b)(10)(C)(1) of this section when using a process based on the pupil's response to scientific, research-based intervention; **or**

(ii) The pupil 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, consistent with 34 C.F.R. sections 300.304 and 300.305; and

CA Ed Code – added 1993

56337.5. (a) A pupil who is assessed as being dyslexic and meets eligibility criteria specified in Section 56337 and subdivision (j) of Section 3030 of Title 5 of the California Code of Regulations for the federal Individuals with Disabilities Education Act (20 U.S.C. Sec. 1400 and following) category of specific learning disabilities is entitled to special education and related services.
(b) If a pupil who exhibits the characteristics of dyslexia or another related reading dysfunction is not found to be eligible for special education and related services pursuant to subdivision (a), the pupil s instructional program shall be provided in the regular education program.
(c) It is the intent of the Legislature that the program guidelines developed pursuant to Section 2 of Chapter 1501 of the Statutes of 1990, for specific learning disabilities, including dyslexia and other related disorders, be available for use by teachers and parents in order for them to have knowledge of the strategies that can be utilized with pupils for the remediation of the various types of specific learning disabilities

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Who Do You Turn To???

DSM 5
- Not achieving
- Below chronological age (7th %ile?) and significantly impact academics
- Occurrs/ed during school years
- Not accounted for by other disabilities

Berninger
- Reading/spelling below average (25th %ile)
- Rule out other disabilities
- Verbal comprehension 90 or above
- Reading/spelling 1 sd below verbal comprehension
- Relevant cognitive process below 25th %ile

SLD
- Not achieving
- Below ability or performance in other areas OR not responding
- Processing disorder
- Significantly impacts access to curriculum
- Not accounted for by other disabilities

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CASP POSITION PAPER AB1369

Critical to any assessment of dyslexia is a professional with specialized knowledge of brain functions, learning, and learning disorders, such as a school psychologist, as a member of the team. School psychologists have advanced training in individual administration of standardized tests of learning and cognitive functions. They understand test construction and measurement, validity, and reliability; knowledge that helps them to interpret an individual student's performance across various domains of functioning. In assessing for dyslexia, the school psychologist and other team members will use a variety of observations and tools to measure the abilities that underlie reading. The psychologist will also examine and identify or rule out other possible contributors to reading disorders such as problems with visual discrimination, memory, or attention. Further, school psychologists will consider such factors as language status and educational background in their assessments. School psychologists have the education and training to consider all aspects of the child's functioning and the multiple factors that can impact reading

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Assess Word Level Knowledge and Abilities

- Has student acquired alphabetic principle/sound-symbol correspondence?
- Is child developing automatic word recognition
- Components
  - Accuracy
  - Rate
  - Reading
  - Spelling
- Both decoding and encoding
- **Timed and untimed**

Word Level Skills to Be Assessed

	Real Words	Nonsense Words
Decoding - Reading		
Timed	Automaticity of Word Retrieval	Automaticity of Decoding
Untimed	Lexicon	Phonics Knowledge
Encoding- Spelling		
Timed		
Untimed	Orthographic Knowledge Lexicon	Phonics Knowledge

Word Level Assessments

- **Classroom**
  - Embedded in curriculum
  - Spelling tests
  - Invented spelling
  - Writing
- **Tests**
- Decoding tests
  - Measure knowledge of phonics
  - Use nonsense words
  - Achievement Tests
- Real word reading accuracy
  - Isolated word reading
  - Achievement tests
- Fluency
  - Test of Word Reading Efficiency (TOWRE 2)
  - Test of Silent Word Reading Efficiency
  - Achievement Tests
- Encoding
  - Going from sounds to letters that represent them
  - WJIII Spelling of sounds
  - Spelling subtests
    - Look at spellings for both knowledge of phonics and orthographic knowledge (legal letter combinations)

Word Level Assessments

	Real	Nonsense
Decoding – Reading		
Timed	TOWRE 2 PAL II Achievement Tests (e.g. WIAT III)	TOWRE 2 PAL II Achievement Tests (e.g. WIAT III)
Untimed	Most achievement batteries	Most achievement batteries
Encoding – Spelling		
Timed	CBM	
Untimed	Spelling	Spelling of Sounds

TEXT LEVEL ASSESSMENTS: Fluency

- Is child developing automaticity/fluency?
- Does she read with prosody?
- Components
  - Accuracy
  - Rate
- Classroom sources
  - Embedded in curriculum
  - Levels (lexile)
  - District fluency tests
  - Informal reading inventory
  - Running records
- Tests
  - Gray Oral Reading Test-5 (GORT-5)
  - Reading achievement tests
  - Oral reading fluency measures
    - DIBELS
    - AIMSweb
    - EASY CBM
    - Intervention Central

TEXT LEVEL ASSESSMENTS: Comprehension

- Classroom sources
  - Curriculum
  - Lexiles
  - IRI
  - Running records
- Tests:
  - Most achievement batteries
  - Gray Oral Reading Test
  - Gray Silent Reading Test
  - Maze reading tests (CBM)
- Problems in assessing comprehension
  - Students with good background knowledge and language skills may do well on comprehension tests but not in school related reading
    - (Fletcher et al, 2007)
  - Refer back to passages
    - Differences in performance
    - E.g. WIAT vs. GORT

Related Skills: Dysgraphia

- Dysgraphia is the term associated with specific learning disabilities in writing. It is used to capture both the physical act of writing and the quality of written expression. Features of learning disabilities in writing are often seen in individuals who struggle with dyslexia and dyscalculia, and will vary from person to person and at different ages and stages of development. Common characteristics include:
  - Tight awkward pencil grip and body position
  - tiring quickly while writing, and avoiding writing or drawing tasks
  - trouble forming letter shapes as well as inconsistent spacing between letters or words
  - difficulty writing or drawing on a line or within margins
  - trouble organizing thoughts on paper
  - trouble keeping track of thoughts already written down
  - difficulty with syntax structure and grammar
  - large gap between written ideas and understanding demonstrated through speech

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Measures for Dysgraphia

- PAL II
  - Alphabet Writing
  - Copying tasks
  - Finger Sense
- WIAT III
  - Alphabet Writing Fluency
- Tests of Handwriting Skills Revised

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Morphological Awarness

- Morphological awareness
  Awareness of structure of words and ability to use that knowledge
- Tests
  - Language assessments
  - PAL II

Are They Related — corner corn / builder build

Does It Fit — The boy ran _____ / gluckable gluckly gluckness

Sentence Structure

Glamping is mox.
Mox glamping is
Moxly is glamping

Find the True Fixes

painter disease

Morphological Decoding

word reading
hear, hears, hearing

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Related Abilities: Verbal Ability

- Verbal ability
  - "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
- TESTS
  - Most cognitive batteries
  - Listening comprehension
  - Oral language assessments

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Related Abilities: Oral Language

- Oral language clusters
  - WJIII
  - KABC II
- 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
- "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
- Listening Comprehension
  - Most achievement tests

Related Abilities: Phonological Processing

- Phonological processing tasks
  - Blending
  - Segmenting
  - Memory
  - Onset rhyme
- Classroom Information
  - Embedded in curriculum
  - BPST, APST
  - Invented Spelling
- Tests
  - TAPS 3
  - CTOPP 2
  - PAL II
  - PAT 2
  - FAR
  - DIBELS
  - NEPSY II
  - Other tests as part of larger batteries
- Informal measures
  - Yopp Phonemic Awareness tasks
  - PAST
  - Lindamood Auditory Conceptualization

PAL II

- PAL II
  - Syllables
    - Cupcake
    - Carelessly
  - Phonemes
    - Pill
    - Must
    - Between
    - Mothad
  - Rime
    - Been
    - Cahevator

PAST Kilpatrick

Name: _____ Date: _____ Grade _____ Age _____
Teacher: _____ D.O.B.: _____ Evaluator: _____

INSTRUCTIONS: See *Equipped for Reading Success* Chapter 11 "Assessment of Phonological Awareness" for instructions on the PAST.

RESULTS:

	Correct	Automatic	Highest Correct Level: (Levels not passed below the highest correct level)
Basic Syllable	___/10	___/10	_____
Onset-Rime	___/10	___/10	
Basic Phoneme	___/10	___/10	
Advanced Phoneme	___/20	___/20	Highest Automatic Level: (Non-automatic levels below highest automatic level) _____
Test Total	___/50	___/50	

Approximate Grade Level (Circle):	*PreK/K*	*K late/Early 1st*	*1st late 1st/early 2nd*	*2nd*	*late 2nd to adult*

Note: The grade levels listed throughout the *PAST* are estimates based on various research studies and clinical experience. There are no formalized norms.

DIBELS℠ Phoneme Segmentation Fluency

rich	/r/ /i/ /ch/		hawk	/h/ /o/ /k/	___/6
passed	/p/ /a/ /s/ /t/		roof	/r/ /oo/ /f/	___/7
sea	/s/ /ea/		shout	/sh/ /ow/ /t/	___/5
arms	/ar/ /m/ /z/		smile	/s/ /m/ /ie/ /l/	___/7

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Rapid Naming

- The ability to quickly access verbal labels for visually presented material
- Pictures, letters, numbers, simple words
- Can also include switching

- CTOPP 2
  - Digit. Letter. Color, Object Naming
- NEPSY II
  - Speeded Naming
  - PAL II
    - RAN Words, Digits, Words and Digits
  - FAR
    - RAN, Irregular words, PA
  - KTEA 3
    - Naming Facility
  - DAS II
    - Rapid Naming
  - WISC V
    - Naming Facility

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Orthographic Awareness

- A less studied area
- Letter name knowledge
- Letter production
- Expressive coding
- Receptive coding
- Berninger's work in developing Process Assessment of the Learner (PALS-II) and in developing interventions
  - Orthographic choice
  - Alphabet writing
  - Receptive and expressive coding

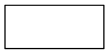
Orthographic Coding

- PAL-II: Alphabet Writing
  Receptive Coding
  Expressive Coding

FAR: Orthographical Knowledge

Tests of Orthographic Competence

Spelling Tests: Review for "illegal" letter combinations



oli

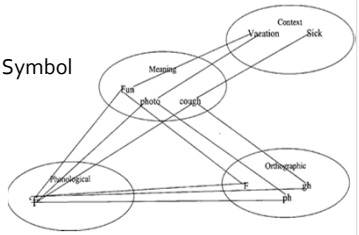
Write 5th, 6th, 7th

e i l p

Retrieval of Visual – Phonological Links

- May also impact math – calculation
- Not just visual memory but the linking of visual-verbal
- Associative memory?

WRAML 2 Sound Symbol



Verbal Memory

Rote

- WISC V
- DAS 2
- WJIV
- WRAML 2
- Consider contextual versus non-contextual

Working Memory

- WISC V
- DAS 2
- WJIV
- WRAML 2
- PAL II
  - Letters
  - Sentences

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Processing Speed

- Processing speed
  - May affect ability to develop store of sight words
  - May affect reading fluency
  - Likely to see in other academic areas as well
- Difference from naming speed
- Most cognitive batteries have a processing speed composite
  - Important to look at the subtests that make up the composite
    - E.g. WISC V

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Attention and Executive Function

- Self Monitoring
- Inhibiting
- Selective attention
- Revising and updating
- Assessments
- Rating Scales
- Situational ADHD

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Documenting Relevant Patterns

- WJIV – Assessment Bulletin #6
  - Use Discrepancy and Variation procedures to document differences
    - Compare Gf-Gc composite to reading and spelling
    - Compare learning in other areas to reading and spelling
    - Compare oral language to reading and spelling
  - WISC V – Pearson Dyslexia Tool Kit
    - Pairwise comparisons
    - Composite scores differences

Index Level Strengths and Weaknesses

Index	Score	Comparison Score	Difference	Critical Value	Strength or Weakness	Base Rate
VCI	118	103.6	14.4	10.82	S	<=10%
VSI	114	103.6	10.4	10.40	S	<=15%
FRI	97	103.6	-6.6	9.96		<=25%
WMI	100	103.6	-3.6	9.96		>25%
PSI	89	103.6	-14.6	11.62	W	<=15%

Differences Between Composite Standard Scores comparison score mean derived from the five index scores (MIS).

Comparison	Difference	Critical Value (Significance Level .01)	Significant Difference Y/N	Base Rate
Oral Language vs. Basic Reading	32	11.74	Y	<=5%
Oral Language vs. Written Expression	25	14.07	Y	<=10%
Basic Reading vs. Written Expression	-7	10.13	N	>15%

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WJIV Reading Skills Profile

- Basic Reading Skills
- Reading Fluency
- Reading Rate
- Spelling
- Phoneme Grapheme Knowledge

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WJ IV Dyslexia Profile of Scores

Area Tested		Battery	Test Date	Cluster/Test	Low/Below Average SS <40-89 PR <1-24	Average SS 90-110 PR 25-75	High/Above Average SS >110 PR >75	RPI	Comments
Primary Reading and Writing Difficulties	Letter-Sound	Informal		Letter Identification: Case: Lower___/26 Upper___/26 Letter sounds: C___/21 V___/5 (short)					
	Basic Reading Skill	WJ IV ACH		Test 1: Letter-Word Identification				___/90	
				Test 7: Word Attack				___/90	
	Reading Fluency (Rate & Accuracy)	WJ IV ACH		**Reading Fluency**				___/90	
				Test 8: Oral Reading				___/90	
				Test 9: Sentence Reading Fluency				___/90	
				Reading Rate				___/90	
				Test 9: Sentence Reading Fluency				___/90	
				Test 15: Word Reading Fluency				___/90	
	Spell.	WJ IV ACH		Test 3: Spelling				___/90	
				Test 16: Spelling of Sounds				___/90	
	Phoneme-Grapheme Knowledge	WJ IV ACH		**Phoneme-Grapheme Knowledge**				___/90	
				Test 7: Word Attack				___/90	
				Test 16: Spelling of Sounds				___/90	

Assessment Bulletin Page 5
Complete table page 28

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WJIV Cognitive Areas

- Phonological Awareness
  - Auditory processing
  - Phonetic Coding
- Orthographic Processing
  - Letter pattern
  - Number pattern
  - Spelling
  - Word Attack
  - Spelling of sounds
- Memory
  - Auditory Memory Span
  - Short term Working Memory
- Rapid Naming
  - Speed of Lexical Acess
- Processing Speed
  - Cognitive Processing Index
  - Perceptual Speed

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"Difficulties cannot be identified only on the basis of symptoms, for example, difficulty in learning to understand and construct oral or written language or learn math. Rather, they have to be identified in the context of an individual's profile of developmental and learning skills"
- Berninger & Wolf, 2015

"One of the hallmarks of dyslexia is that the primary and secondary characteristics and related cognitive processing weaknesses are unexpected in relation to other cognitive and achievement abilities: in other words the ability to learn independent of reading."
- Proctor, Mather, Stevens 2015

"..weakness in reading and spelling surrounded by a sea of strengths..."
- Shaywitz, 2002

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WJIV – Kayela

- Using the academic and cognitive areas listed in previous slides what are indicators of dyslexia?
- What are indicators that Kayela does not fit profile of dyslexia?

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WIAT – KTEA Academic Tests

- WIAT III
  - K-1
    - Early Reading Skills
    - Spelling
  - 2-12
    - Oral reading fluency
    - Psueodword Decoding
    - Spelling
    - *Word Reading*
    - *Reading Comprehension*
- Composites
  - Basic Reading
  - Reading Comprehension and Fluency
- KTEA 3
  - Phonological Processing
  - Reading Comprehension
  - Letter and Word Recognition
  - Nonsense Word Decoding
  - Spelling

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WISC V Cognitive Areas

- Auditory Working Memory
  - Digit Span
  - Letter Number Sequencing
- Naming Speed Index
  - Naming Speed Literacy
  - Naming Speed Qunatity
- Verbal Comprehension Index
  - Similarities
  - Vocabulary
- Processing Speed Index
  - Coding
  - Symbol Search
- Storage and Retrieval Index
  - Naming Speed Index
  - Symbol Translation Index
- Symbol Translation Index
  - Immediate Symbol Translation
  - Delayed Symbol Translation
  - Recognition Symbol Translation

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WISC V – Marcel

- Using the academic and cognitive areas listed in previous slides what are indicators of dyslexia?
- What are indicators that Marcel does not fit profile of dyslexia?

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CASES

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Maurie

Jonah

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INTERVENTION

English Spelling

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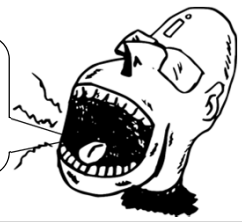
Now what???

- How do you know if what was tried was evidence based?
- How do you determine what needs to be addressed in intervention?
- How do you help teams determine an evidence based practice or program?

THE BUCK DOES NOT STOP (OR BEGIN) WITH ELIGIBILITY DECISION!!



Target Intervention by Assessing All Levels of Reading

- Underlying processes
- Word level processes
- Text processes
- Oral language
- Production
- Assess accuracy and fluency
- Assess multiple language systems

Continuum of Services

General Education → Accommodations → Specialized Instruction

Student's NEEDS determine level of service

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CASP Position Paper

First, IDEA stresses the importance of research-based interventions and highly qualified teachers.

Second, because children who qualify for special education need to have every educational minute count, it is critical that the intervention used be appropriate for the identified needs of the child

Third, when choosing an intervention, it is important to consider the student characteristics as well as the setting in which the intervention will be provided.

Fourth, there are certain agreed-upon characteristics that are important to interventions for students with dyslexia. The National Reading Panel (2000) listed five components of reading instruction that are relevant to both general education instruction and intervention: phonemic awareness, phonics, fluency, vocabulary and text comprehension. Interventions for students with dyslexia should be structured, systematic, explicit and involve diagnostic teaching. Students with dyslexia need to be taught using an intervention that has a clear sequence of skills, is explicit (i.e. students are directly taught the skills they need to know) assures mastery of basic skills such as phonemic awareness and monitors progress regularly.

Fifth, these students need to be taught by a teacher trained in the intervention who understands reading development, how to meet the needs of unique learners and can provide for diagnostic teaching

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Intervention Principles

- Working to change brain function
- Intensive
- Prolonged
- Skill development
  - Fluency
- Neural plasticity indicates that it is easier to create new connections than reconfigure old ones
- Learning requires accurate repetition
- Learning requires intensity
- Brain has affinity for novelty
- **Motivation is critical**

Two Types of Interventions

Comprehensive Programs

- Address all aspects of reading
- Generally provided in specialized setting
- Include elements identified by
  - National Reading Panel
  - International Dyslexia Association
- Have evidence of effectiveness

Targeted Interventions

- Address specific areas of need
  - Phonological awareness
  - Phonics
  - Fluency
  - Comprehension
- May be provided in specialized setting or general education
- Have evidence of effectiveness

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FROM:http://iris.peabody.vanderbilt.edu/module/ebp_01/cwrap/#content

Program checklist

Evidence-based practice	• Shown to have a positive effect on student outcomes • The research design allows one to infer that the practice led to child or student improvement • Multiple high-quality studies have been conducted • Reviewed by a reputable organization (e.g., What Works Clearinghouse)
Promising practice	• Shown to have positive effects on learner outcomes • The research design does not clearly demonstrate that the practice led to child or student improvement • Insufficient number of studies conducted to demonstrate its effectiveness
Research-based practice	• Some research studies have demonstrated positive effects on student outcomes while other studies have not • Based on research that may or may not clearly demonstrate that the practice led to improved child or student outcomes • Multiple studies have been conducted
Emerging practice	• Anecdotal evidence of effectiveness • Research has not been conducted

ESSA Levels of Evidence

- Strong
- Randomized study
  - Significant effect
- Moderate
  - Quasi- experimental study – no randomization
  - Significant effect
- Promising
  - Correlational study considering pre-test performance
- *Research based*

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Iris modules on eb interventions

- http://iris.peabody.vanderbilt.edu/module/ebp_01/challenge/#content
- How do you currently determine whether a student has had an evidence based practice or program?
- How do you decide if a program is appropriate for a student with a learning disability?
  - Parent wants optometric training, Lindamood-Bell, Barton
- Evidence based practice and program

Evidence Based Practices: ebp

- Benefits
- How to select EBP
  - Consider
    - Students and setting
    - Resources
    - Evidence level
- http://iris.peabody.vanderbilt.edu/module/ebp_01/cresource/q2/p03/#content
- Selecting an EBP
  - Comparison worksheet
- Research based

Useful Websites

- Best Evidence Encyclopedia (BEE) (Center for Data-Driven Reform in Education at Johns Hopkins University)
- National Center on Intensive Intervention (NCII)
- What Works Clearinghouse (WWC)
- International Dyslexia Association
- Evidence Based Network
- IDA Matrix https://app.box.com/s/ume7t8rrbgpb7h4z2jhq57y4xbyxt8jt
- Checklist

Berninger Checklist

National Reading Panel

- Phonological Awareness
- Phonics
- Fluency
- Vocabulary
- Comprehension

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Berninger & Wolf, 2016: Teaching Tips

- Link instruction to assessment
- Instruction should target multiple language systems
  - Language by ear
  - Language by eye
  - Language by mouth
  - Language by hand
- English is a morphophonemic orthography
- Teach the three kinds of linguistic awareness
  - Phonological
  - Orthographic
  - Morphological
- Include explicit spelling instruction

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International Dyslexia Association

- Phonology
- Sound-symbol instruction (both ways)
- Syllable instruction
- Morphology
- Syntax
- Semantics
- Intervention Checklist
- Systematic and cumulative
- Simultaneous and multi-sensory
- Direct and explicit instruction
- Diagnostic teaching
- Synthetic and analytic instruction
- Comprehensive and inclusive

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Phonology: Developing Phoneme Awareness (NRP and IDA)

- Word boundaries
- Beginning – ending sounds
  - Rhyme
  - Word play
- Syllable awareness
- Individual phonemes
  - Blend
  - Segment
  - Delete
  - Substitute
- Essential to learning to read
- Basic understanding prior to phonics
- Reciprocal relationship with reading development
- Synthetic (blending) and analytic (segmenting)

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Phonics: Sound-Symbol Instruction (NRP and IDA)

- Both symbol to sound (decoding) and sound to symbol (encoding)
- Use multiple coding systems
  - Language by ear
  - Language by eye
  - Language by mouth
  - Language by hand
- Start with easiest elements and build upon those
  - Graphemes in visual presentation linking sight, sound, feel
    - Using key words
  - Decoding c-v-c words
  - Encoding
- Graphemes can be multi-letter units

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Syllable Instruction (IDA)

- Teach students six types of syllables
  - Open – to-tal
  - Closed – pen – cil
  - Vowel-consonant-e - take
  - Vowel-l – e - table
  - R- controlled - warm
  - Vowel team- boat
- Important for spelling
- Link to ear, mouth , hand, eye

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Morphology and Word Origin (NRP and IDA)

- Suffixes
- Prefixes
- Inflected endings
- Roots and base words
- Helpful in decoding and encoding
- Provide semantic (meaning) link for orthography

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Syntax, Semantics, Discourse, Uses (NRP and IDA)

- Literacy programs should include instruction in the rules for putting words together into sentences
- Vocabulary development is critical to the development of reading
- Teach comprehension strategies
- Embed instruction in meaningful uses of language

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Group Size and Composition

- Same ability grouping
- Small groups within classrooms
- Small groups equal to or better than one on one
- Up to three to four students

Intensive Interventions

- Problems in reading rate remain for most children who require this level of intervention
- Brain activity becomes more like normal pattern but also increases in other areas (compensation?)
  - Some say compensation is primary factor in improvement

Sample Interventions

- Focus on Phonological Awareness and Phonics
  - Phono-Graphix
  - Barton Reading and Spelling
  - Road to the Code
- Focus on Phonological Awareness, Phonics and Fluency
  - Great Leaps
  - System 44
- Focus on Phonological Awareness, Phonics, Writing
  - Lindamood Phoneme Sequencing Program
  - Spell, Read P.A.T.
  - Read Write Type
  - Berninger PAL aligned
  - REWARDS – also vocabulary
- Focus on most aspects of reading
  - Wilson Reading System (& other Wilson programs)
  - Sonday Systems
  - RAVE-O
  - Language!
  - Corrective Reading
  - S.P.I.R.E.
  - Reading Mastery

Interventions

- Controversial Treatments
  - Tomatis (1978)
  - Irlen lenses (Irlen, 1983)
  - Optometric visual training (Rayner, 1983; Taylor, 1965)
  - Davis Method (Davis & Braun, 1997; 2003)
  - Dore Program (Dore & Rutherford, 2001)

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Christo, Davis, & Brock (2009)

Age At Intervention

- Some evidence that brain changes that occur for younger children happen with older
- Also increase in compensatory areas
- General cognitive ability affects comprehension
- Typical special education during 4th and 5th grade increases reading by only .04 SD over what would occur in classroom

Difficulties For Older Children

- Low entering word reading scores reflect underlying deficits
- Deficit makes it impossible to close the gap
- Those with better word reading at entry may have more words "on the verge"
- May have additional deficit in ability to form orthographic representations

GORT 5 Reading Fluency = 4
TOWRE 2 Phonemic Decoding Efficiency = 74
TOWRE 2 Word Reading Efficiency = 78
WIAT III Word Reading = 92
WIAT III Decoding = 90

Upper Grade Interventions

- Often lack intensity
- Little direct instruction or guided practice in phonics
- Lack of comprehension strategy instruction
- Persistent fluency deficits

- Teach phonemic decoding explicitly
- Provide opportunities for supervised practice
- Intensive
- Small group
- Related to entry level skills
- Provide all NRP elements of reading instruction
- Brain studies show intervention effect on brain function
- Teach morphology as need more than phonics at upper grades to read words

Conclusions for Upper Grades

- Older children around 30th percentile can bring phonemic decoding, text reading accuracy and fluency into average range (60 hours)
- Those around 10th percentile can bring phonemic decoding, accuracy and comprehension into average range. Fluency increases but still low (100 hours)
- Those at 2nd percentile can bring phonemic decoding into average and increase accuracy and comprehension but little **relative** change in fluency

What About Commonly Used Practices?

- Repeated Reading
- Pre-teaching vocabulary
- Peer Assisted Learning Strategies
- Partner Reading
  - Alternate readers
  - With expert lead (neurological impress method)
- ?

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Examples of Accommodations

- Extra time
- Oral reading of directions
- Books on tape
- Alternate location for testing
- Note taking support
- Accommodations to assignments that don't impact concepts addressed
- Technology supports for writing

What might be appropriate accommodations for Jonah?
How would you implement those at your school?

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Nine Types of Curriculum Adaptations

Quantity * ●

Adapt the number of items that the learner is expected to learn or number of activities student will complete prior to assessment for mastery.

For example:
Reduce the number of social studies terms a learner must learn at any one time. Add more practice activities or worksheets.

Time +

Adapt the time allotted and allowed for learning, task completion, or testing.

For example:
Individualize a timeline for completing a task; pace learning differently (increase or decrease) for some learners.

Level of Support +

Increase the amount of personal assistance to keep the student on task or to reinforce or prompt use of specific skills. Enhance adult-student relationship; use physical space and environmental structure.

For example:
Assign peer buddies, teaching assistants, peer tutors, or cross-age tutors. Specify how to interact with the student or how to structure the environment.

Input +

Adapt the way instruction is delivered to the learner.

For example:
Use different visual aids, enlarge text, plan more concrete examples, provide hands-on activities, place students in cooperative groups, pre-teach key concepts or terms before the lesson.

Difficulty * ●

Adapt the skill level, problem type, or the rules on how the learner may approach the work.

For example:
Allow the use of a calculator to figure math problems; simplify task directions; change rules to accommodate learner needs.

Output +

Adapt how the student can respond to instruction.

For example:
Instead of answering questions in writing, allow a verbal response, use a communication book for some students, allow students to show knowledge with hands on materials.

Participation +

Adapt the extent to which a learner is actively involved in the task.

For example:
In geography, have a student hold the globe, while others point out locations. Ask the student to lead a group. Have the student turn the pages while sitting on your lap (kindergarten).

Alternate Goals ●

Adapt the goals or outcome expectations while using the same materials. When routinely utilized, this is only for students with moderate to severe disabilities.

For example:
In a social studies lesson, expect a student to be able to locate the colors of the states on a map, while other students learn to locate each state and name the capital.

Substitute Curriculum ●
Sometimes called "functional curriculum"

Provide different instruction and materials to meet a learner's individual goals. When routinely utilized, this is only for students with moderate to severe disabilities.

For example:
During a language lesson a student is learning toileting skills with an aide.

* *This adaptation is an accommodation if the student can demonstrate mastery of the standard on a test/assessment.* The key concept is: Will the student ultimately master the same material but demonstrate that mastery in alternate ways or with alternate supports? If standards are not fundamentally or substantially altered, then this adaptation is an accommodation to a learning or performance difference.
● *This adaptation is a modification if the student will not demonstrate mastery of the standard on an assessment.* If routinely utilized, these adaptations are modifications and require individualized goals and assessment.

BLANK GRID