Demystifying Dyslexia

Elaine Cheesman, Ph.D.

Summary

• What is skilled reading / writing?
• What is dyslexia?
WHAT IS SKILLED READING / WRITING?

Simple View of Reading
Gough & Tunmer, 1988

Decoding \times Language Comprehension = Reading Comprehension
Increased Scientific Research

The Many Strands that are Woven into Skilled Reading
(Scarborough, 2001)

- LANGUAGE COMPREHENSION
  - BACKGROUND KNOWLEDGE
  - VOCABULARY KNOWLEDGE
  - LANGUAGE STRUCTURES
  - VERBAL REASONING
  - LITERACY KNOWLEDGE

- WORD RECOGNITION
  - PHON. AWARENESS
  - DECODING (and SPELLING)
  - SIGHT RECOGNITION

Skilled Reading- fluent coordination of word reading and comprehension processes

Reading is a multifaceted skill, gradually acquired over years of instruction and practice.
It matters little what else they learn in elementary school if they do not learn to read at grade level.

Difficulties learning to read are not only an educational problem, they constitute a serious public health concern. Literacy impacts all areas of the human condition: welfare, justice, employment, and education.

Reid Lyon, Former Chief of the National Institutes of Child Health and Human Development

WHAT IS DYSLEXIA?
Dyslexia

c. 1887, from German dyslexie (1883)

from Greek dys- "abnormal, difficult“ + lexis "word," from legein "speak."

Dyslexic (n.) is first recorded 1961.

Definition

_International Dyslexia Association and NICHD (2002)_

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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**Neurobiological Basis**

*Eden et al., Neuron, 2004*
Which Grandniece/nephew has reading / writing difficulties?

Born addicted to cocaine.  
Father Ph.D. in Engineering

Eden, Age 5

Rhyming video:  http://youtu.be/5HitGckrx7w
Parents’ names are Kuen and Andrea.
Nathan, Age 8

I learned to ride a bike. And I am dyslexic and I hate it. I got to learned one and I got it (dyslexia) from one of my parents but my parents both do not have dyslexia.

Nathan, after 6 months’ instruction

I wish you could be here now 3 weeks. Please be fast. Love, Nathan
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Primary Impact

Reading

Along the Eastern Shore of Maryland, in Dorchester County, in Caroline County, the masters kept hearing whispers about the man named Moses, who was st they did not believe in his out him were fantastically attched for him. They offered

Spelling

algan
“I was one of the ‘puzzle children’ myself — a dyslexic . . . And I still have a hard time reading today. ”
- Nelson Rockefeller

“I, myself, was always recognized . . . as the “slow one” in the family. It was quite true, and I knew it and accepted it. Writing and spelling were always terribly difficult for me. My letters were without originality. I was . . . an extraordinarily bad speller and have remained so until this day. ”
- Agatha Christie

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Phonological Processing

- speech
- perception
- production

Speech

- How was your date?
- Disaster. The way she spoke drove me nuts.
- We were still on the way to the restaurant and I just wanted to shout! There's no B in supposedly?
- Supposedly? Oh dear. Then she got illustrated because there were so many choices on the meal.
- I kept waiting for her to order spaghetti.
Phonological Awareness

Benchmark 3
DIBELS™ Phoneme Segmentation Fluency

but /b/ /u/ /t/
yet /y/ /e/ /t/
hat /h/ /a/ /t/
eyes /ie/ /z/
smart /s/ /m/ /ar/ /t/
wheels /w/ /ea/ /l/ /z/
right /r/ /ie/ /t/
try /t/ /a/ /ie/
lock /l/ /o/ /k/
brings /b/ /i/ /ng/ /z/
can /k/ /a/ /n/

eat /ea/ /t/

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Phonological Processing

- Speech
  - Perception
    - Production
  - Phonological Awareness
    - Syllable
    - Onset-rime
    - Phoneme
  - Phonological Memory
    - Working Memory
      - Retrieval
      - Naming

Phonological Memory

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Not Linked to Intelligence

IQ is linked to the level of ability to read in the neurotypical individual, but is not linked to the level of ability to read in the individual with dyslexia.

Shaywitz, et. al. (2010)
“A teacher sent the following note home with a six-year-old boy: “He is too stupid to learn.” That boy was Thomas A. Edison”.
- Thomas Edison

I was called lazy. I was called stupid. I was told I was not living up to my potential. And all the time inside I’m thinking, I don’t think I’m stupid. I don’t want to be stupid. I’m trying as hard as I can. I really am.
- Henry Winkler (actor)

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“If you read to me I could tell you everything that was read. They didn’t know what it was. They knew I wasn’t lazy, but what was it?”
- Whoopi Goldberg

“I never read in school. I got really bad grades–D’s and F’s and C’s in some classes, and A’s and B’s in other classes. In the second week of the 11th grade, I just quit. When I was in school, it was really difficult. Almost everything I learned, I had to learn by listening. My report cards always said that I was not living up to my potential.”
- Cher

Vision problems

• Are NOT the primary cause of learning disabilities or dyslexia
• Scientific research does NOT support vision therapy or tinted lenses for the treatment of reading-related learning disabilities.

- American Academy of Pediatrics, Section on Ophthalmology
- Council on Children with Disabilities
- American Academy of Ophthalmology
- American Association for Pediatric Ophthalmology and Strabismus
- American Association of Certified Orthoptists
“Differences do exist in the visual system of children with dyslexia, but these differences are the end-product of less reading, when compared with typical readers, and are not the cause of their struggles with reading.”
-Dr. Guinevere Eden, 2013

“Early identification and treatment of dyslexia should not revolve around these deficits in visual processing.”
-Dr. Olumide Olulade, 2013

Other Facts about Dyslexia

- Dyslexia occurs on a continuum from mild to severe.
- Dyslexia reflects a persistent deficit rather than a developmental lag.
- Dyslexia persists throughout childhood, adolescence and adulthood.
- **Most students with dyslexia can learn to read and write with proper instruction.**
Specific Learning Disabilities

• 80-85% of students with an identified specific learning disability (SLD) have a primary problem with reading and/or language
• Researchers use the term “dyslexia.”
• The disability category is SLD
  – “dyslexia” is not a special education disability category in CO.

Tertiary Impact

“...I felt like an alien. I always felt like I never belonged to any group that I wanted to belong to.”
- Steven Spielberg

“The looks, the stares, the giggles...I wanted to show everybody that I could do better and also that I could read.”
- Magic Johnson

“I grew up in a school system...where nobody understood the meaning of learning disorder. In the West Indies, I was constantly being physically abused because the whipping of students was permitted.”
- Harry Belafonte
Exercise

- Get into small groups.
- Sort “signs of dyslexia” into four categories
  1. Primary Impact
  2. Secondary consequences
  3. Tertiary Impact
  4. Myths

Answers on next slides.

Primary Impact

- Difficulty breaking spoken words into individual sounds or blending sounds to form whole words.
- Learned to speak later
- Trouble learning names / sounds of letters.
- Difficulties pronouncing words
- Omits / changes word endings
- Difficulty finding right word
- Trouble sequencing alphabet
- Struggles with rhyming, first sound matching
- Slow to learn days of week, months of year
- Confuses left and right
- Trouble sequencing events.
Primary Impact

- Has trouble reading unfamiliar words in isolation.
- Reads “like” for milk
- Reading is slow, choppy
- Misreads / omits “little” words (e.g., of, the)
- Memorizes words; can’t spell words that can read.
- Spells word differently on the same document.
- Has inconsistent performance.
- Memorizes words for reading and spelling. Can’t spell the words he/she can read.

Secondary Consequences

- Uses simpler words rather than mature vocabulary in speech and writing.
- Background knowledge is unexpectedly limited for age and social context.
- Has difficulty connecting words or ideas between sentences
- Has difficulty understanding or writing long, complex sentences.
Tertiary Impact

- Seek the company of younger people; become social isolates.
- Doesn’t pay attention to reading or writing tasks.
- Easily distracted when reading or writing.
- Overwhelmed by school demands or homework
- Doesn’t understand jokes.
- Misses or misunderstands innuendo.
- Has feelings of powerlessness, incompetence, anger, frustration. Becomes very active or misbehaves to cover up feelings of inadequacy. Is the class clown.
- Has a negative self-image; tend to view the world negatively; less likely to enjoy the positive experiences in life; has great trouble imagining anything positive about the future.

Myths

- Has trouble copying letters correctly.
- Sees letters and words backwards.
- Has low intelligence.
- Will outgrow reading and writing difficulties with increased compensation abilities.
- Is lazy and unmotivated.
Acknowledgements

• Emerson Dickman, past President, International Dyslexia Association
• Louisa Moats
• http://dyslexia.yale.edu
• www.dyslexiclikeme.org
• www.brainyquote.com

For More Information

The International Dyslexia Association (IDA)  www.interdys.org

Knowledge and Practice Standards for Teachers of Reading (IDA, 2010)