What IS Dyslexia?

“Dyslexia is a specific learning disability that is neurological 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.”

International Dyslexia Association (2002)
### What ISN'T Dyslexia?

- reading or writing backwards
- caused by poor eyesight, visual processing problems or hearing problems
- an intellectual or developmental disability
- more prevalent in boys than girls
- a lack of educational opportunity or lack of books in the home
- a lack of motivation or laziness, in fact students with dyslexia are working harder than their peers
- responsive to standard reading instruction

### Dyslexia is Prevalent

- One in five students has a specific learning disability, and of those, 70-80% have deficits in reading.
- 66% of U.S. fourth graders are not reading at grade level.
- 5-12% of children are estimated to be affected by dyslexia.


### The Individuals with Disabilities Education Act (IDEA) and Dyslexia

- The IDEA lists 13 conditions that can make students eligible for special education. One of these is specific learning disability, or SLD.
- IDEA lists dyslexia as a type of specific learning disability.
- IDEA is a national law. States can implement it in different ways. They can’t give less protection, but they can provide more.
- It is a legal requirement for schools to identify all children who have disabilities and provide them with an "appropriate" education.

### Arizona Dyslexia Legislation

- July 2019: Senate Bill 1319 signed into law
- July 2020: All schools with K-3 students must offer at least one teacher who has completed the Arizona Department of Education training program.
- July 2021: All schools with K-3 students must offer at least one teacher who has completed the Arizona Department of Education training program.
Screening

Wait-to-fail-approach
Requires a child to demonstrate a significant struggle to learn to read over a prolonged period of time before more intensive interventional strategies are discussed and put into place.

Intensive interventions are most effective in kindergarten or first grade. Yet, a diagnosis of dyslexia usually is not given before the end of second grade or the beginning of third grade.

Early Assessment

- Schools can screen young children before they are even able to read.
- Educators can begin to help at-risk students in prekindergarten and kindergarten.
- Deficits in prereading skills have been shown to be precursors of dyslexia in children as young as age three.
- Studies involving MRIs have shown that the brain characteristics of individuals with dyslexia can be observed as early as infancy and preschool.
- Early assessment could be conducted prior to the start of kindergarten, at daycare centers, preschools, or even in collaboration with pediatricians’ offices at the four or five-year-old well-visits.

PRESCHOOL
- word retrieval
- mispronunciations
- left/right
- up/down
- before/after
- letters in name
- following directions
- recognizing rhymes

KINDERGARTEN/1ST GRADE
- difficulty remembering names/shapes
- difficulty remembering sounds of letters
- difficulty generating rhyming words
- difficulty reading common one-syllable sight words
- difficulty with phonemic awareness tasks

2ND-3RD GRADE
- difficulty reading multisyllabic words
- word retrieval difficulties in class discussions
- confusion of auditory similar letters (b/d, p/q)
- difficulty acquiring new vocabulary
- spelling skills which are not phonetically consistent
- difficulty decoding single words in isolation
- difficulty with mechanical reading: lacks inference and trade through relationships
4TH-12TH GRADE

Significant difficulty reading and spelling multisyllabic words

Difficulties with reading comprehension and learning new information from the text due to underlying word recognition difficulties

Avoids reading aloud; poor fluency skills

Reports unusually long hours spent doing homework

What needs to be tested to make a diagnosis of dyslexia?

Language
Phonological awareness
Reading fluency
Rapid naming/word fluency
Reading comprehension
Spelling
Writing

DIAGNOSIS

Who can diagnose dyslexia?

Clinicians trained in psychology, speech-language pathology, education or medicine.

- Knowledge in psychology, reading, language, and education.
- Knowledge of how individuals learn to read and why some people have trouble learning to read.
- Understanding of how to administer and interpret evaluation data and how to plan appropriate reading interventions.

Three Types of Dyslexia

- Difficulties with phonological awareness (PA), but not RAN (rapid automatic naming)
- Difficulties with RAN only
- Difficulties with both PA and RAN (the most severe)

There is no single test for dyslexia
ELIGIBILITY

What will your child’s school say about dyslexia?

SPECIFIC LEARNING DISABILITY
“...A disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia.”

20 U.S.C. § 1401(30) and 34 C.F.R. § 300.8(c)(10)

Dyslexia and your child’s IEP

Under the eligibility of Specific Learning Disability

Basic Reading Skills
Reading Decoding
Reading Fluency

There is no separate eligibility for dyslexia

Accommodations and Modifications

Accommodation should allow full access to the teaching curriculum and full expression of your child’s knowledge

Modifications should be carefully considered to ensure that learning expectations are not reduced

Accommodation Examples

Accommodations do not replace the need for research-based instruction

Audio books
Text-to-speech technology
Oral testing
Extended time on assignments
Extended time on assessments

Writing options: print or word processing
Avoid having child read or spell aloud

Oral, test

Extended time on assignments

Provide copies of teacher’s or peer’s notes
Audio recorder for orally presented information

Grading assignments for content without penalizing for spelling errors

Avoid having child read or spell aloud

Use spelling words that assess specific features

Provide copies of teacher’s or peer’s notes
Use of graphic organizers
Pre-teach new, essential vocabulary

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Modifications

Change the curriculum by offering different or less content than regular classroom experience

Change expectations for what the student will be learning

Build larger gaps between the student and peers

Reduce experience with grade-level content
Assistive Technology

Any device that gives a student the ability to increase, maintain, or improve capabilities in the classroom to access learning and demonstrate the student’s knowledge.

A bridge between students’ areas of weakness and their abilities and skills.

Must be considered for all students on an IEP or 504(a).

The Reading Brain

“We human beings were never born to read; we invented reading and then had to teach it to every new generation. Each new reader comes to reading with a 'fresh' brain - one that is programmed to speak, see, and think, but not to read.”

-Maryanne Wolf, Reader Come Home

Assistive Technology Examples

Assistive Technology does not replace the need for research-based instruction

- Audiobooks
- Bookshare
- Learning Ally
- Text-to-Speech
- Immersive Reader
- Siri/Alexa
- Spellchecker
- Grammarly

The Science of Reading

“...In the last 50 years alone, hundreds of scientists and thousands of studies have demonstrated an undisputed evidence base for the way that reading works.”

-Mark Seidenberg, Reading at the Speed of Sight
What is the “science of reading”?

The science of reading informs us of how the brain learns to read based on research from scientists. Science has identified critical components and principles of instruction for teaching reading.

Phonemic awareness is the awareness of the individual phonemes — the smallest units of sound — in spoken words, and the ability to manipulate those sounds.

Phonics is the idea that letters represent the sounds of spoken language — and that there is an organized, logical, and predictable relationship between written letters and spoken sounds.

Fluency is the ability to read a text accurately, quickly, and with expression. Fluency is a key skill to becoming a strong reader because it provides a bridge between word recognition and comprehension.

Vocabulary is comprehending the words the students hear orally to make sense of the words they see in print.

Spelling is knowing basic patterns, principles, and rules. Nearly 90 percent of English words can be spelled using rules.

Comprehension is understanding, what they’re reading.

Writing is knowing the basic skills of capitalization, punctuation, handwriting, and sentence structure.

INTERVENTION AND INSTRUCTION

Structured Literacy

Elements of Language

Principles of Instruction

Phonology: segmenting words into their component sounds

Sound-Symbol Association: mapping the phonemes to symbols or printed letters

Syllable Instruction: teaching the six basic syllable types in the English language: closed, vowel-consonant-e, open, consonant-vowel controlled, and vowel pair

Morphology: studying of base words, roots, prefixes, and suffixes

Syntax: conveying meaning with grammar, sentence variation, and the mechanics of language

Semantics: instruction in the comprehension of written language

Explicit: Deliberate teaching of all concepts with continuous student-teacher interaction

Systematic: Material follows the logical order of the language from easier to more difficult and each skill/step requires mastery before moving on

Cumulative: Each step is based on previously learned concepts

Diagnostic: Instruction is individualized based on formal and informal data including observation of reading behaviors

Prescriptive: Scaffolds used to manage the level of difficulty and corrective feedback are given so students know how to monitor their reading errors
What does effective “researched-based” intervention look like?

“Valid evidence through randomized controlled trials (RCTs) showing a standard score gain of 12 to 25 points in less than half a school year.”

-David A. Kilpatrick, Ph.D. Assistant Professor of Psychology, State University of New York, College at Cortland

Interventions We are Using Now

The following interventions have been studied in the reading literature and have been shown to yield a 2 to 4 standard score point improvement:

Repeated Readings, READ 180, Reading Recovery, Fast ForWord, Read Naturally, Failure Free Reading, Seeing Stars, and Great Leaps

- Students almost never “catch up” with these approaches
- Most of these have studies with “statistically significant” results, so they can call themselves “researched based”

Instruction for Older Students

- identify and break words into syllable types
- recognize irregular words that do not follow predictable patterns
- know the meanings of common prefixes, suffixes, and roots
- learn the alphabetic code
- learn spelling rules

“At a Loss for Words: How a Flawed Idea is Teaching Millions of Kids to be Poor Readers”

Emily Harford, American Public Media Education Reporter

Three-cueing System

- Teaches students to guess at words, rather than decoding.
- A child who primarily relies on guessing strategies will be challenged when faced with higher level texts, no pictures, and harder vocabulary.
“Every child deserves a well-prepared teacher.”

“Dyslexia is a different brain organization that needs different teaching methods. It is never the fault of the child, but rather the responsibility of us who teach to find methods that work for that child.”

– Maryanne Wolf, *Proust and the Squid*

“Teachers are not taught to teach reading
Learning occurs on the job
No access to the science of reading
Scientific findings get lost in translation
“Research-based” can be a teacher’s nightmare (ivy tower vs. classroom trenches)
Teachers can be fearful of teaching something of which they do not have knowledge or understanding
Teachers support evidence that supports their beliefs

Natalie Wexler
*The Knowledge Gap*

“Parents of children with reading problems should make their number one goal the preservation of their child’s self-esteem. This is the area of greatest vulnerability for children who are dyslexic.”

– Sally Shaywitz, *Overcoming Dyslexia*

The Many Strengths of Dyslexics

warning signs of dyslexia
identification assessments
assessments for monitoring students’ progress
structured literacy elements: phonology, sound-symbol association, syllables, morphology, syntax, and semantics
integrated lessons with structured literacy
principles of instruction: systematic, explicit, cumulative to mastery, diagnostic, and prescriptive
What are the social and emotional effects of dyslexia?

- low self-esteem
- high anxiety
- poor social relationships
- depression
- poor understanding of their own strengths

Statements made by educators after receiving effective reading instruction.

- “He is the hardest working student in my class” - Teacher
- “I wish every student gave the effort she does” - Teacher
- “Committed, loyal, hardworking” – Coach
- “Excellent ability to recall historical facts” - Teacher
- “Voracious learner, great perseverance” – Teacher
- “Outside the box thinker” - Teacher
- “He went further than any other student I have ever tested” - School Psychologist

Every child has the right to read!