

DYSLEXIA: Understanding and Supporting our Learners

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Learning Goals

- To develop an understanding of and common language about dyslexia
- To clear up the myths about dyslexia
- To identify common deficits shown by students with dyslexia

Assessing Our Prior Knowledge

- Please fill out the anticipation guide.
- Read each statement and answer true or false in the column marked “Before”.

KWL

What do we **KNOW** about dyslexia?

What do we **WANT** to know about dyslexia?

Reasons for Reading Difficulty

- Weak verbal abilities
- Lack of literacy experiences
- Insufficient instruction
- English as a second language
- Dyslexia

Dyslexia is a specific learning disability that is neurological in origin.

Dyslexia 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 of dyslexia may include problems in reading comprehension and reduced reading experience that can impede the growth of vocabulary and background knowledge.

What Is Dyslexia?

- ✓ neurological in origin
- ✓ deficit in phonological component of language
- ✓ often unexpected in relation to other abilities
- ✓ occurs despite effective instruction

MYTHS

Student sees things backwards

Jerky eye movement

TRUTHS

All students have reversals in the early stages of reading and dyslexic students may have difficulty retrieving an accurate visual representation

All readers move their eyes back and forth as they read; excessive movements could be a symptom of reading difficulty but is not a cause

MYTHS

Dyslexia is more common in boys

Dyslexia is associated with left-handedness

Gifted students are more commonly dyslexic

TRUTHS

Boys are identified more often by teachers because their behaviors are more distracting

Affects both right and left handed students

Occurs in people of all levels of intelligence; often unexpected in terms of other abilities

Controversial Therapies

Scientific evidence has not verified the claim of these therapies

Colored lenses

Vitamin doses

Spinning and balance treatments

Sensory integration therapy

Creeping and crawling

Memory pills

Water ingestion

Rewiring the Brain

[Video: Rewiring the Brain from Reading Rockets](#)

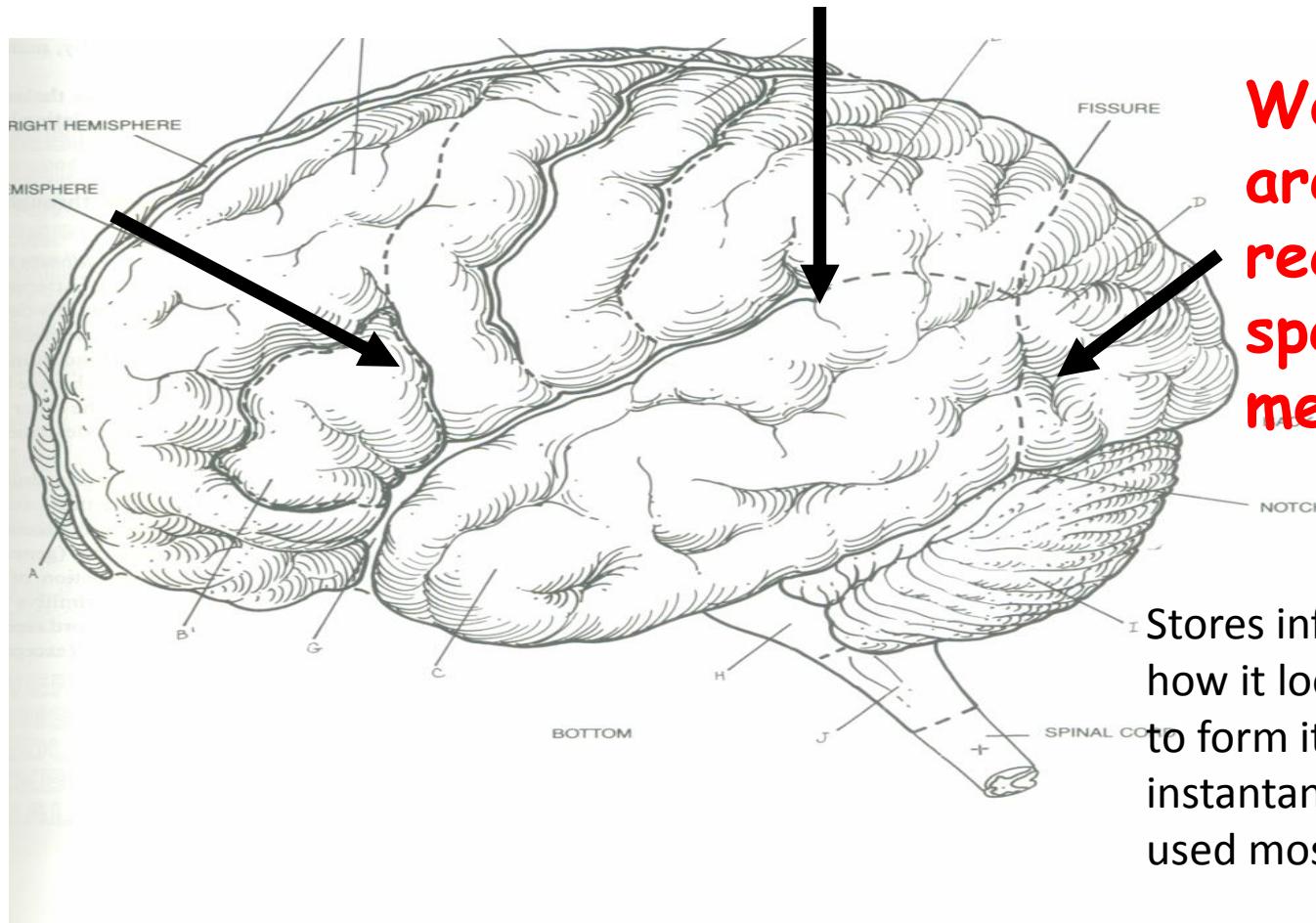
Left Hemisphere

Phonological processing

Pronouncing and retrieving words, hearing sounds in words

Sound-symbol connection

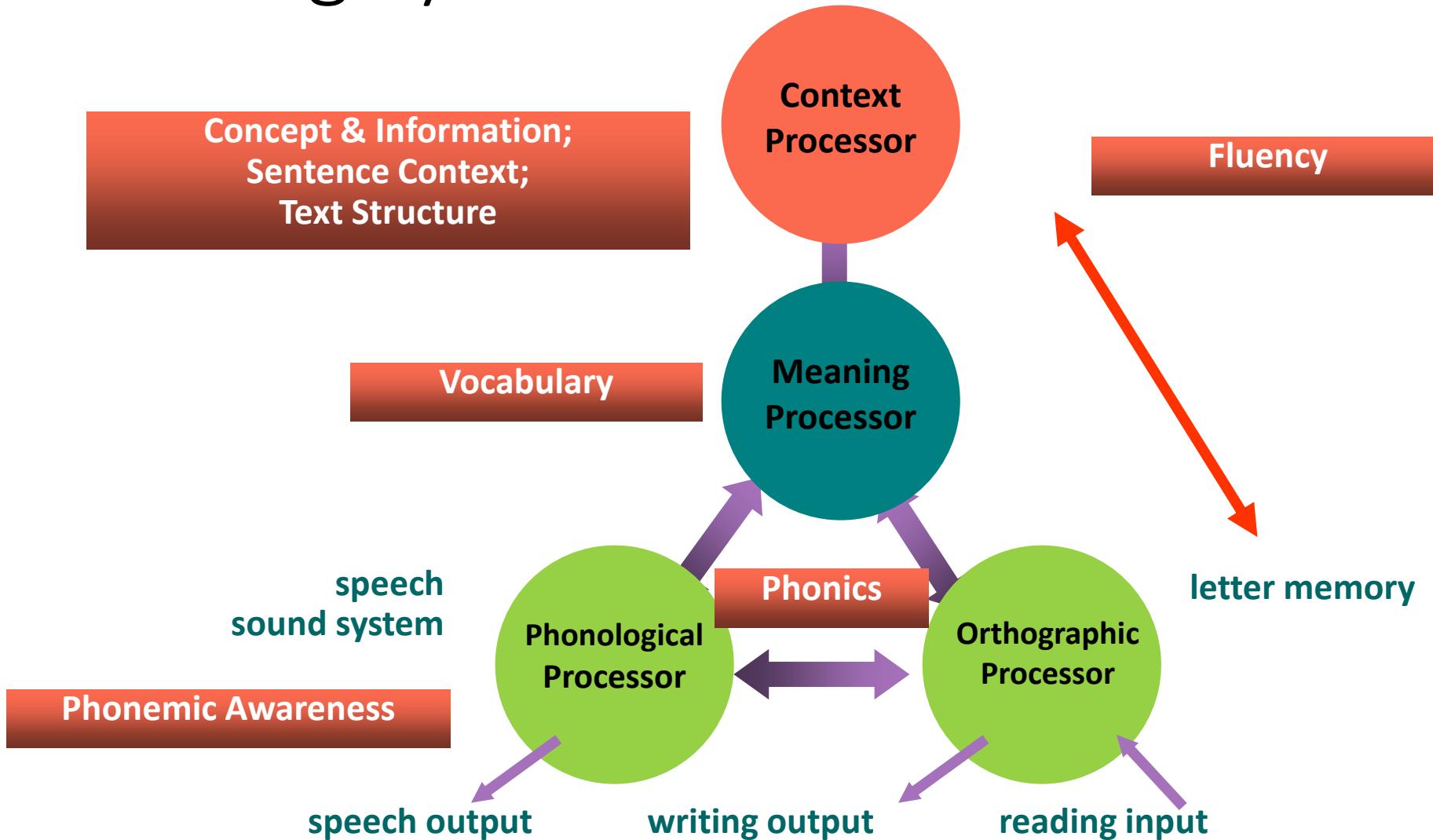
Slow and analytic pathway, initially analyzing a word, pulling it apart and linking its letters to sounds



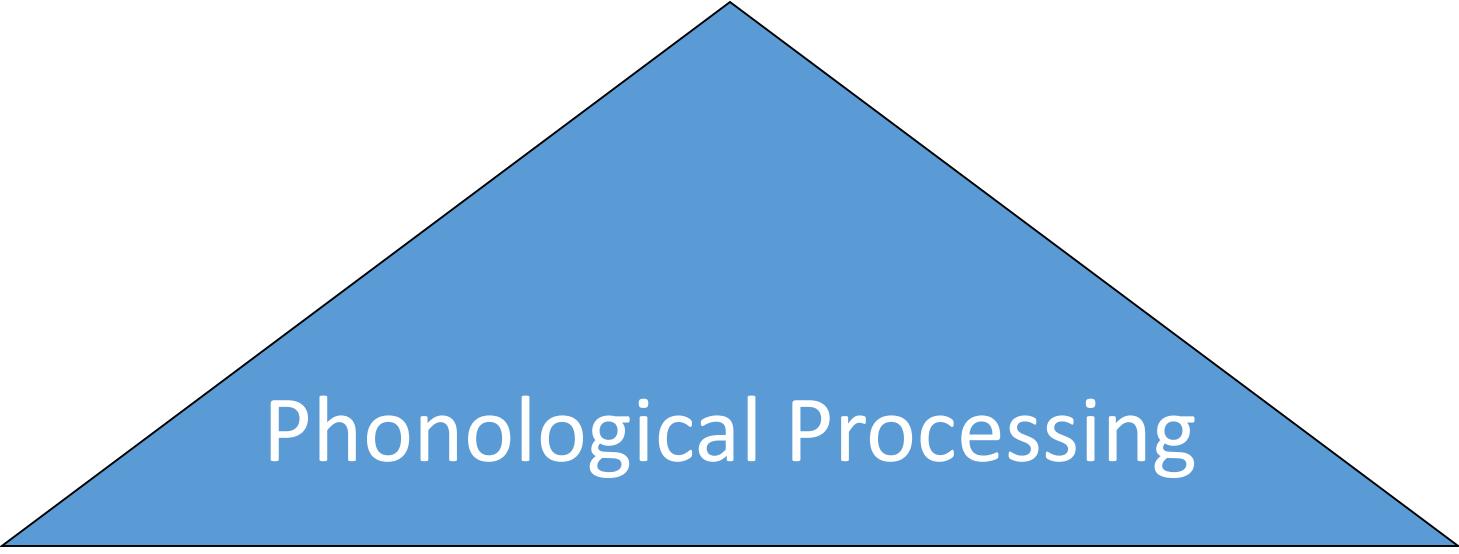
Word Form area, letter recognition, spelling, meaning

Stores information about a word-- how it looks, how it sounds, how to form it, what it means
instantaneously - express pathway used most by skilled readers

Four Processing Systems



From *LETRS: Language Essentials for Teachers of Reading and Spelling*, Dr. Louisa Moats



Phonological Processing

Phonological
Awareness

Phonological
Memory

Phonological
Naming

Phonological Representation

Phonological Awareness

Orally manipulating sounds

NO PRINT



Syllable

Word

Phoneme

Onset/Rime

Rhyme and Alliteration

Phonological Memory

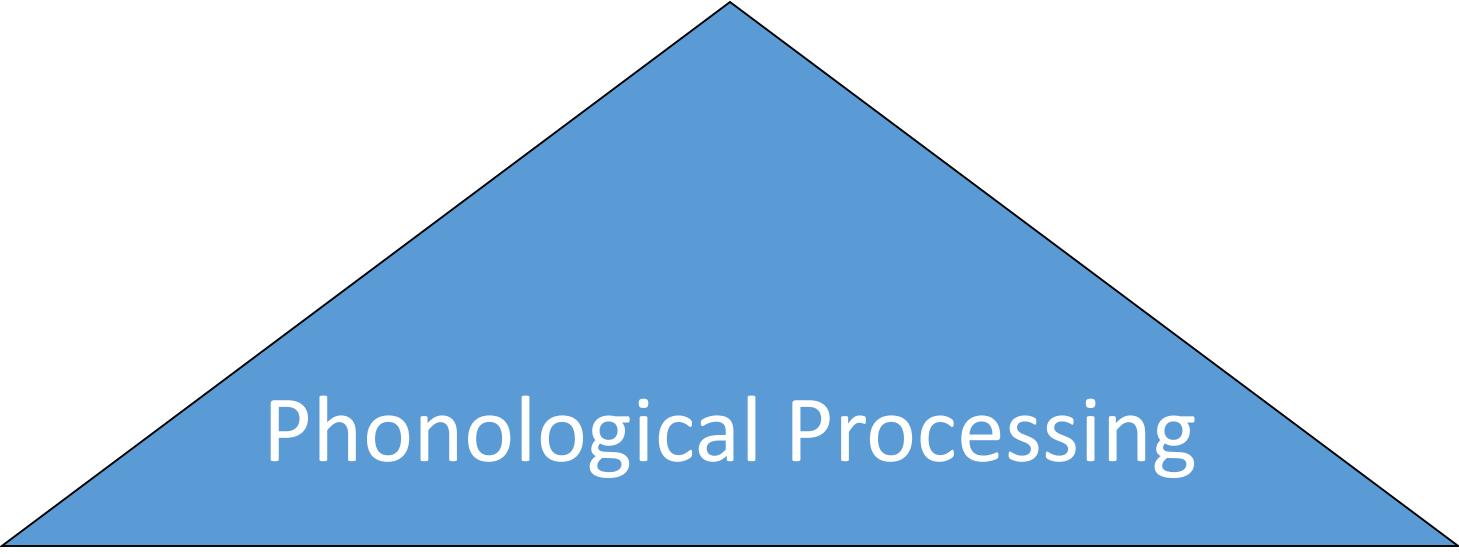
The ability to hold sounds in
your working memory or
short term memory

Phonological Naming

The ability to retrieve information in
your long term memory effectively.

Phonological Representation





Phonological Processing

Phonological
Awareness

Phonological
Memory

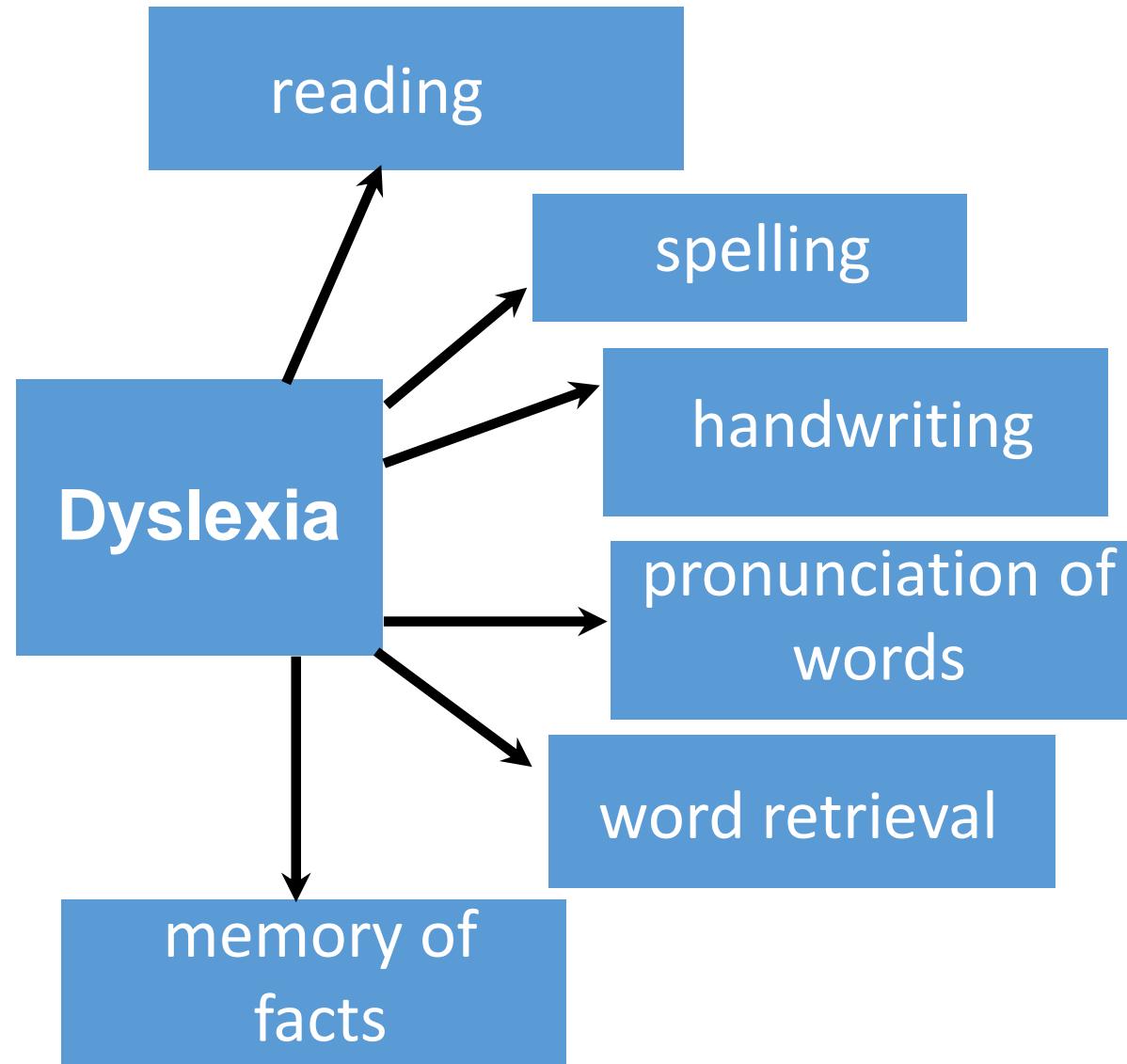
Phonological
Naming

Phonological Representation

Cause

Glitch in the phonological language system of the brain

Effects



Phonological Processing

Phonological Awareness
is the ability to process
the speech sound system

- Sound comparison
- Sound manipulation
- Pronunciation of words
- Memory for sounds, words, phrases

Phonological Awareness Deficits

Early Childhood

- ✓ Late learning to talk
- ✓ Acquires vocabulary slowly
- ✓ Prefers non-verbal gestures
- ✓ Mixes up pronunciations more than peers
- ✓ Difficulty manipulating speech sounds
- ✓ Inability to restate sequences of numbers or sounds
- ✓ Poor spelling with speech sounds omitted

Phonological Awareness Characteristics -- Intermediate

- ✓ Difficulty pronouncing multisyllabic words
- ✓ Poor spelling with speech sounds omitted
- ✓ Difficulty learning a foreign language
- ✓ Trouble with advanced phonological tasks

Pig Latin (edray osesray mellsay weetsay)

tongue twisters (Peter Piper)

spoonerisms (half warmed fish / half formed wish)

Max, a student with dyslexia

- Text: “Terry got into a little car. He had something for Show and Tell in a big paper bag. Next, Bill got into the car with his big paper bag.”
- Max: “Tr got into a little car. He wed soapthin for Shau and tell on the bag. Next, Bill got in the car weth his pair bag.”

Orthographic Processing

Ability to effectively processes letters, letter patterns, and whole words

- Automatic letter recognition
- Letter formation and punctuation
- Association of sounds with symbols
- Sequences and patterns of letters
- Fluent whole word reading
- Automatic recall of letters for spelling

Orthographic Deficits Elementary

- ✓ May not enjoy looking at or following print
- ✓ May confuse names and sounds of letters
- ✓ Inability to recognize common words by sight
- ✓ Instantly faltering when sounding out words
- ✓ Slow, inaccurate, word-by-word reading
- ✓ Poor spelling
- ✓ Difficulty with letter formation and spacing

Spelling Errors – 3rd Grader

Spelling Word	Student Response	Phonological Error (incorrect sound)	Orthographic Error (correct sound/incorrect spelling)
drive	jrif	/j/ for /d/ short /i/ for long /i/ /f/ for /v/	OR i spelling instead of i_e spelling * We don't know if the student processed the long i sound incorrectly or if they processed it correctly and just used the wrong spelling
bump	bup	omitted sound /m/	
train	chan	/ch/ for /t/ omitted sound /r/ short /a/ for long /a/	OR a spelling instead of ai spelling * We don't know if the student processed the long a sound incorrectly or if they processed it correctly and just used the wrong spelling
float	flt	omitted sound long /o/	
caught	kot		k spelling instead of c spelling o spelling instead of augh spelling

Orthographic Deficits Intermediate

- ✓ Slow, inaccurate, word-by-word reading
- ✓ Does not know word structure, spelling rules, or syllable patterns
- ✓ Writing is sparse and disorganized
- ✓ Difficulty with note taking
- ✓ Inability to complete assignments in a timely manner

Spelling Errors – 7th Grader

Spelling Word	Student Response	Phonological Error (incorrect sound)	Orthographic Error (correct sound / incorrect spelling)
switch	swich		ch spelling instead of tch spelling
scrape	scrap	short /a/ for long /a/	OR a spelling instead of a_e spelling * We don't know if the student processed the long a sound incorrectly or if they processed it correctly and just used the wrong spelling
nurse	nerse		er spelling instead of the ur spelling
squirt	squart	/ar/ for /ir/	
throat	thought	omitted sound /r/ /aw/ for long /o/	
smudge	smug	/g/ for /j/	
		Total phonological errors = 4-5	Total orthographic errors = 2-3

Orthographic Processing

Spelling Errors

Student writing:

“the wirst thing was rieding in a car with a bayby
screeming and wacing me in the fays!”

Dysgraphia - Handwriting

- Having difficulty in
 - Forming legible letters
 - Retrieving letters from memory
 - Writing automaticity
 - Sustaining handwriting over time
 - Writing letters to spell sounds and words

Why does it matter?

- Handwriting problems interfere with development of compositional fluency (amount written within time limits), which is significantly related to compositional quality.

2nd grade writing sample

Writing Prompt

Draw and write a story about a fun day at the park.



The Boy and the Dog go to the
One day a boy goes to
Huntington park. His name
is Hudson. Hudson is playing
hide-and-seek with his
big sister Emma. On
Monday Hudson hides

Writing Prompt

by a old oak tree. He
saw a puppy that was
black and white. He told
Emma that there was
a puppy by the tree.
Emma and Hudson ran
to the oak tree. Why
don't we tak her home
said Emma. When they got
home. Emma's and Hudson's
Mother said they can
have it. On Sunday they
got a name for it. It's name is ³to
The end

2nd grade writing samples

Writing Prompt

Draw and write a story about a fun day at the park.



I am play ing a
kit out sayd.
it is a b yotiful
day. out sayd. I
hink I wont to
stay out sayd.
2

Writing Prompt

Draw and write a story about a fun day at the park.



A fun day at the park!
Wont hit was a litte
day he had a fun day
at the the park.
And then he got on
the slide first
and then he got on
the slide first.

Dyslexic Students need. . .

- Repetition, repetition, repetition...
- Fluency
- Word Structure Study
- Multi-sensory
- Reading – Writing - Spelling
- Word – Sentence – Passage
- Real literature experiences
- Intellectual challenges

Max, after 14 months of targeted instruction

“Whiz! The baseball went right
by me, and I struck at the air!
“Strike one,” called the man. I
could feel my legs beginning to
shake!”

2nd grade ARI

Independent Level

What Is Dyslexia?

- ✓ neurological in origin
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Our Goals

- To develop an understanding of and common language about dyslexia
- To clear up the myths about dyslexia
- To identify common deficits shown by students with dyslexia
- To understand the evaluation-assessment process

Internet Resources

- International Dyslexia Association (IDA)

www.interdys.org

- Washington Branch IDA

www.WABIDA.org

- Read On

www.readonforkids.com

- Dyslexia Teacher

www.dyslexia-teacher.com

- Reading Rockets

www.readingrockets.org

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