

Dysgraphia

ASSESSMENT TO INTERVENTION

The interdisciplinary approach to
supporting students with dysgraphia

Welcome —

AND INTRODUCTIONS



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OBJECTIVES

- Differentiate the types of dysgraphia and the educational impact on learning.
- Determine the appropriate assessment tools to complete a comprehensive evaluation for students with writing difficulties.
- Implement evidence-based practice using explicit instruction, assistive technology, and accommodations to support students with dysgraphia.
- Identify the Oklahoma Academic Standards for English Language Arts and evaluate their alignment with classroom and developmental expectations.



What is DYSGRAPHIA?

The Greek prefix “DYS” and suffix “GRAPHIA” means difficulty writing

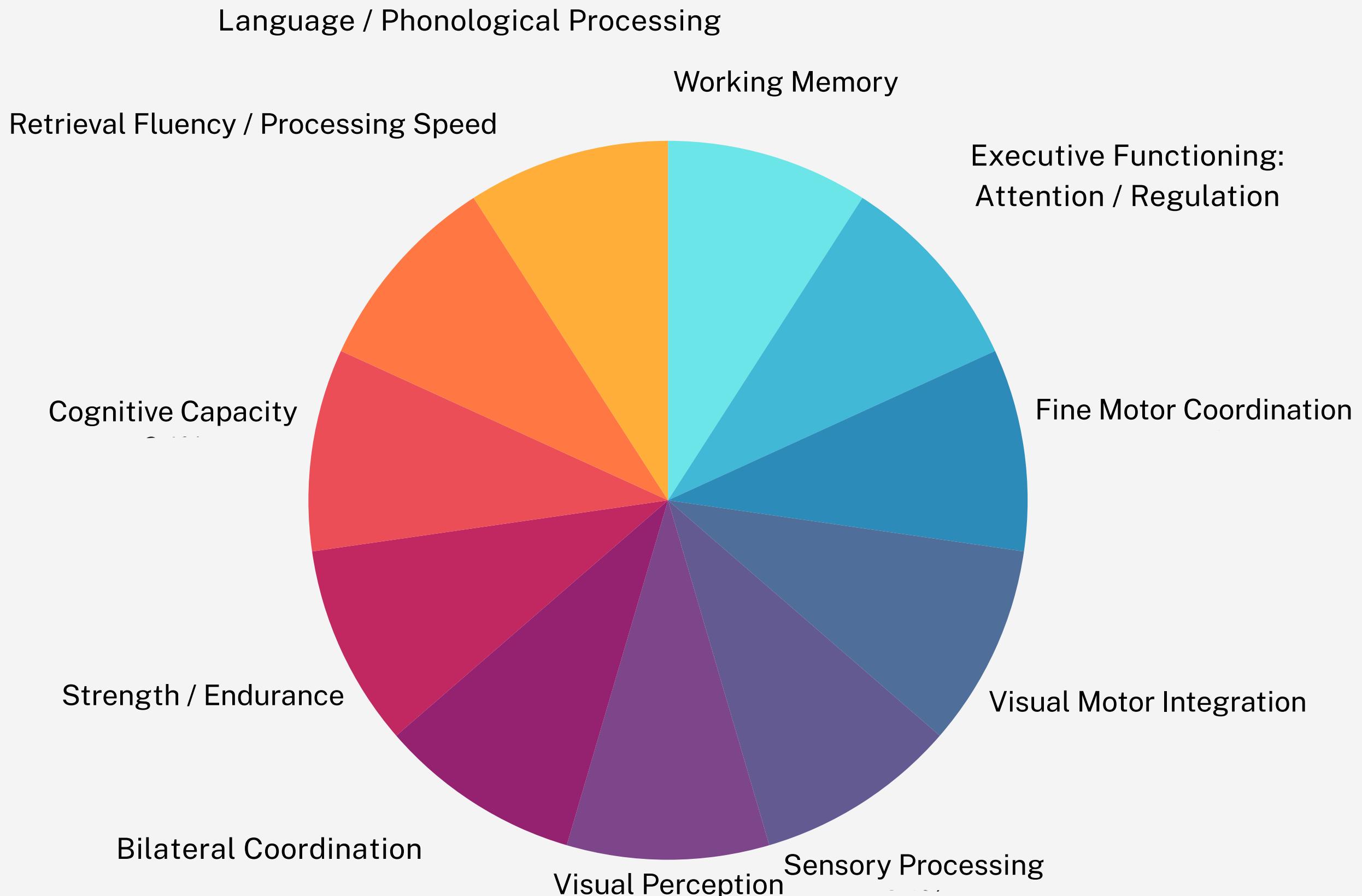
**Diagnostic and
Statistical
Manual of
Mental
Disorders, Fifth
Edition (DSM-5)**

VS

**Individuals with
Disability
Education Act
(IDEA)**

Background and SIGNIFICANCE

Handwriting is a complex process requiring the integration of many cerebral and cerebellar functions including motor, sensory, language, perceptual, and cognitive skills.



Background and SIGNIFICANCE



PREDISPOSITION:

- **Genetics:** linked to Chromosome 6 and 15
- **Neurodevelopment:** Cerebellum and Cerebral dysfunction
- **Pre/Post Natal Exposure:** Alcohol exposure, prematurity, trauma/neglect

PREVALENCE:

- 10-30% of children have difficulties with writing
- Gender disparity - greater prevalence in boys

Types of DYSGRAPHIA

Dyslexic Dysgraphia:

- Illegible writing
- Improvements with copying
- Fine motor skills are often functional
- Spelling is poor

Motor Dysgraphia:

- Illegible writing, even when copying
- Short writing samples are slightly improved
- Decreased speed of writing
- Poor kinesthetic feedback, dexterity, and/or tone
- Spelling is not usually a concern

Spatial Dysgraphia:

- Illegible writing
- Poor spacing, sizing, orientation
- Fine motor skills are often functional
- Spelling is not usually a concern

Phonological Dysgraphia:

- Illegible writing
- Poor spelling - difficulty distinguishing nonsense words to words
- Poor working memory

everyday you recite
this line for the face
of diversity I will bring
inti me today when I
about will make ~~exp~~ a

up a rough row
shearing the surface
of a diversity
triumphant
lift to

Body Paragraph D

on Vesuvius. Did Vesuvius did not erupt but it is the island of the eruption. The island of the eruption is so much that so much of it is unknown but not. Vesuvius is one of the most dangerous volcanoes of all time. It is the largest volcano if eruption cause from space.

органическим

органическим

Interactive ACTIVITY

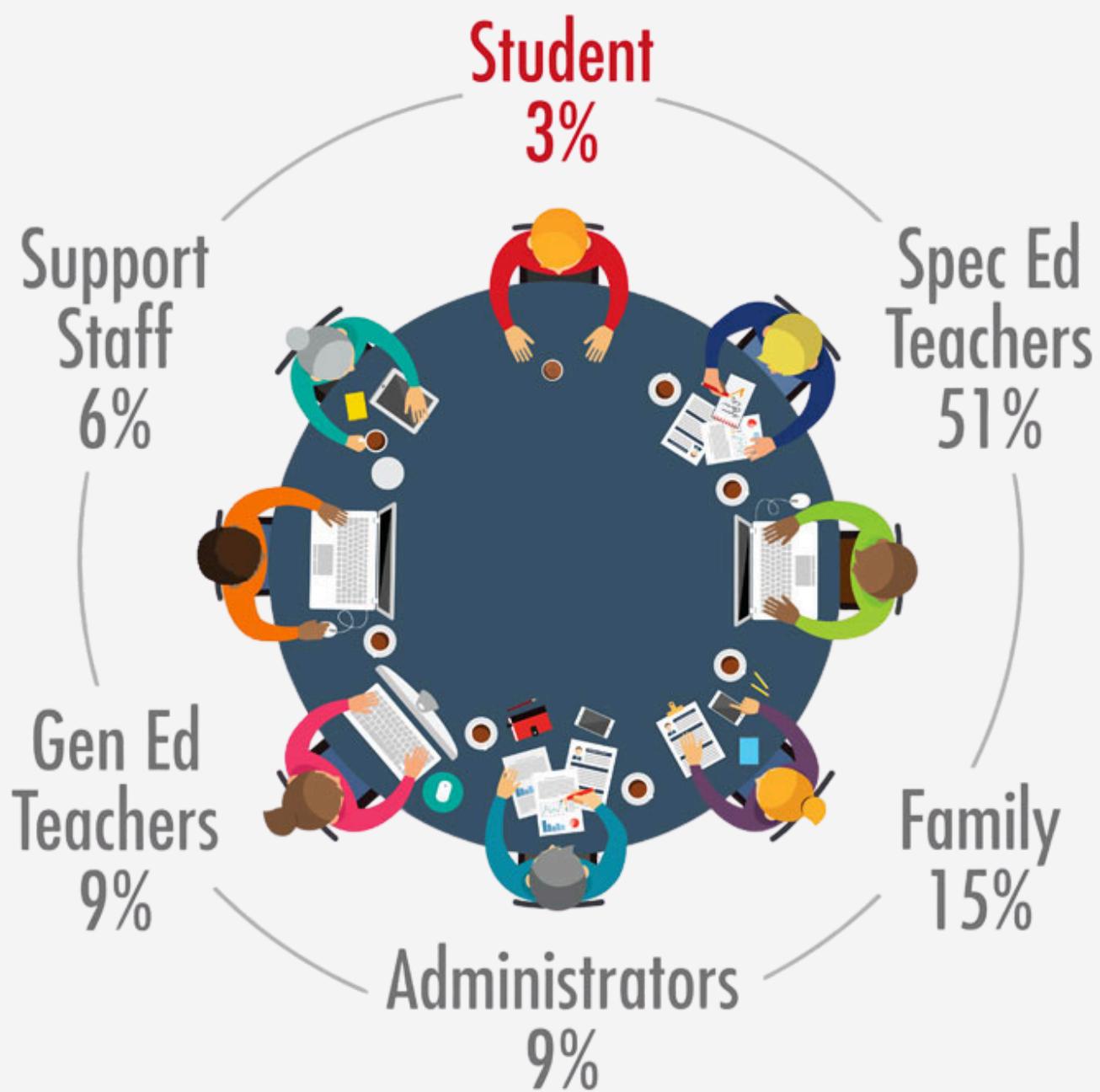


3 minute writing exercise

- 1) Holiday cheer should/should not begin on Nov 1st!
- 2) My favorite TS Era and why!
- 3) This is what OU/Alabama gameday will look like at my house!

BUT...

Assessment INTERDISCIPLINARY TEAM



- Student
- Parent
- Administrator
- General Education Teacher
- Special Education Teacher
- School Psychologist
- Speech-Language Pathologist
- Occupational Therapist
- Additional Team Members

Assessment COMPONENTS

There is no one
dysgraphia assessment



Review of Existing Data

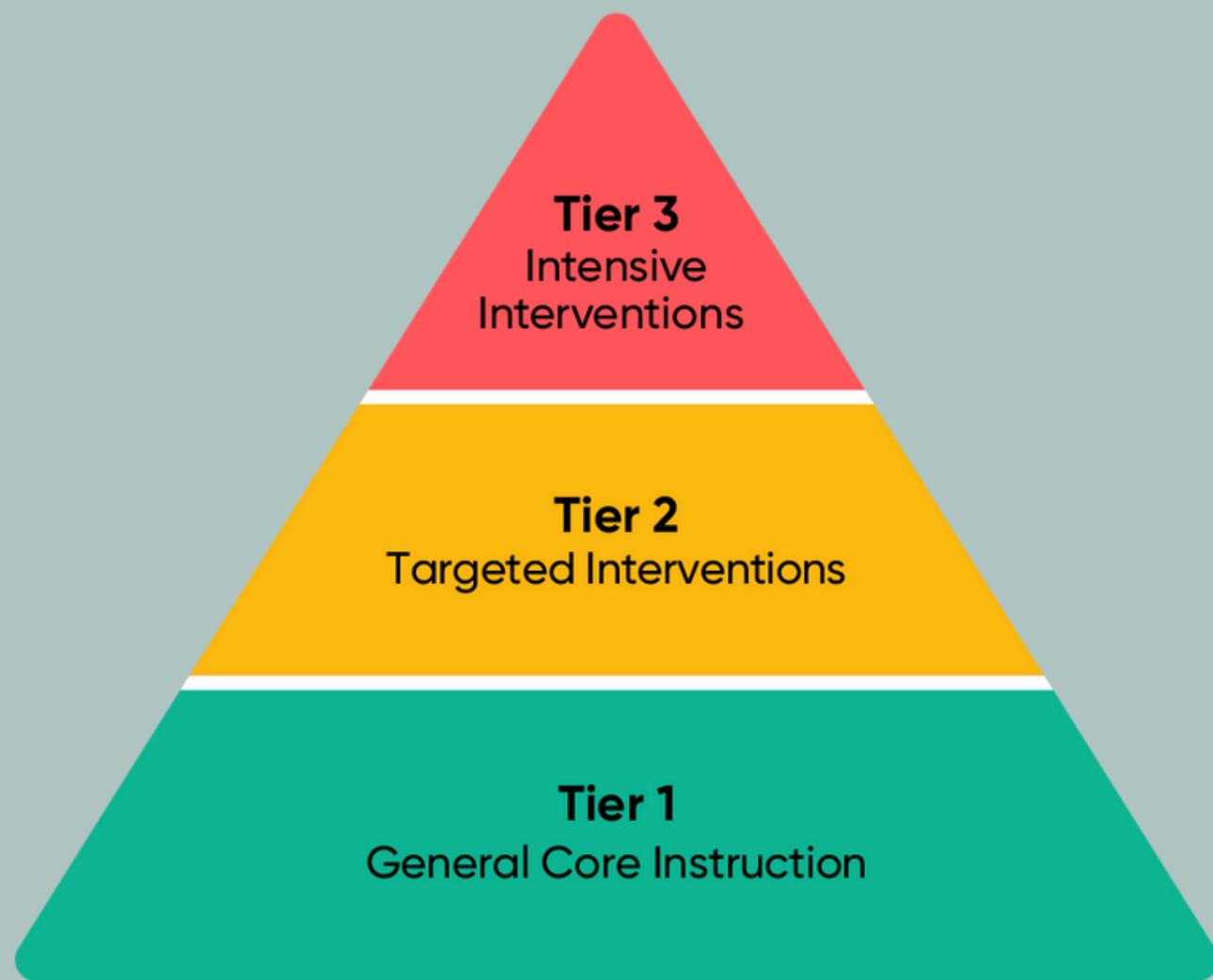
Cognitive Assessments

Language / Phonological Skills

Motor Assessments

Observations

Assessment COMPONENTS



When writing problems appear in the absence of other comorbidities, it is often associated with a lack of exposure or instruction (Vico, et al., 2023)

Review of Existing Data

- Interviews
 - Teacher / Parent
- Data Review
 - Tiered Interventions
- Possible Comorbidities
 - ADHD, Autism, Cerebral Palsy (90-98%)
 - Other Specific Learning Disabilities (30-47%)

Assessment COMPONENTS

COGNITIVE AND LANGUAGE ASSESSMENTS

- Intelligence Measures
 - Retrieval Fluency / Processing
 - Working Memory
 - WJ-IV: Writing Fluency, Spelling, Sample
- Academic Achievement
 - Total Words Written, Correct Word Sequences (CUPS Checklist)
- Executive Functioning
 - Attention / Regulation
- Language / Phonological Processing

Assessment COMPONENTS



Motor / Perceptual Processing

- Motor Assessments
 - Fine Motor Coordination
 - Bilateral Coordination
 - Core Stability / Posture
 - Strength / Endurance
- Sensory Processing
 - Kinesthetic Feedback
 - Regulation
- Visual Motor Integration
- Visual Perception
- Handwriting Assessments

Assessment COMPONENTS

Motor

Movement Assessment Battery of Children, 3rd
Peabody Developmental Motor Scales, 3rd
Batelle Developmental Inventory, 3rd
Skilled Therapist Observations

Sensory Processing

Sensory Processing Measure 2 (SPM2)
Sensory Profile 2 School Companion (SP2)
Skilled Therapist Observations

Visual Motor / Perceptual

Beery Buktenica Test of Visual Motor
Integration (Beery VMI 6)
Test of Visual Perceptual Skills (TVPS-4)
Ocular Motor Observations

Handwriting:

Test of Handwriting Skills, Revised (THS-R)
Minnesota Handwriting Assessment
The Print Tool
Evaluation Tool of Children's Handwriting
DeCoste Writing Protocol
Skilled Therapist Observations

Dysgraphia

EVIDENCE BASED PRACTICE



What does the research say?

Accommodation VS Remediation

Supports and services should align with the student's needs (Santangelo & Graham, 2016)

Assistive technology is not a substitute for skill acquisition (Chung et al., 2022)

Dysgraphia persists across the lifespan, therefore accommodations will be a necessary aspect at all ages (Chung et al., 2022)

Even in a digital age, handwriting is the predominant mode of writing in school and linked to improved learning outcomes (Santangelo & Graham, 2016)

Dysgraphia

EVIDENCE BASED PRACTICE



REMEDIATION (at any Tier):

- GOAL = AUTOMATICITY
(improved legibility and speed)
- Explicit Instruction is KEY!
 - **Who?** It is a team approach beginning with the student and general education teacher!
 - **Where?** Least Restrictive Environment
 - **When?**
 - 10-20 minutes per day
 - 3-5 days per week

(Graham & Harris, 2009)

Dysgraphia

EVIDENCE BASED PRACTICE



REMEDIATION (at any Tier):

- **How?**
 - Fluency: Learning Without Tears, Size Matters, Zaner-Bloser, Big Strokes for Little Folks, Sensible Pencil, Loops and Groups
 - Motor: Core stability, upper extremity strengthening, fine motor dexterity, bilateral coordination, pre-writing skills **Only handwriting improves handwriting**
- **Why?** All students need to receive effective, explicit instruction in handwriting processes to develop the writing fluency (automaticity) required for higher level processing to plan, organize, execute, and proofread their writing (Medwell & Wray, 2014)

Dysgraphia

EVIDENCE BASED PRACTICE

IEP ACCOMMODATIONS

Let's collaborate!

- Reduced assignments (quality over quantity)
- Increased time
- Opportunity for oral response
- Access to word processor
- Pencil grips / Adapted pencils
- Adapted paper
- Word prediction
- Speech to text

OKLAHOMA ACADEMIC STANDARDS

for English Language Arts

DID WE MEET OUR OBJECTIVES?

Questions or comments?

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3 KEY TAKEAWAYS

