Dysgraphia Assessment

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Texas Education Agency
Presentation Agenda

Outline

Written Language
Dysgraphia Overview
Characteristics & Writing Samples
Screening & Progress Monitoring
Formal Evaluation
Interpretation & Identification
Written Language
Data from the National Assessment of Educational Progress, Nation’s Report Card (2011): 8th & 12th Grade Writing Assessments

- 27-28% students scored AT OR ABOVE Proficient
- Translated - Over 70% students scored BELOW Proficient on Writing Assessments

https://www.nationsreportcard.gov/
Writing is complex language task dependent upon multiple language skills, working memory, graphomotor skills, and processing speed (Graham, Harris, & McKeown, 2013).
Dysgraphia Overview
Dysgraphia is a word of Greek origin:

dys: difficulty
graph: to write/writing
ia: a condition, a state of
Dysgraphia is best defined as a neurodevelopmental disorder manifested by illegible and/or inefficient handwriting due to difficulty with letter formation.

This difficulty is the result of deficits in graphomotor function (hand movements used for writing) and/or storing and retrieving orthographic codes (letter forms) (Berninger, 2015).

Secondary consequences may include problems with spelling and written expression (Dyslexia Handbook, 2018, p. 59). https://tea.texas.gov/academics/dyslexia/)
Dysgraphia: Primary Academic Challenges & Underlying Difficulties

- Processing Speed
- Executive Function
- Oral Language
- Fine Motor & Graphomotor Production
- Orthographic Processing
- Phonological Processing
- Transcription Skills

Written Expression
Handwriting
Spelling
Transcription Skills
Characteristics & Writing Samples
Characteristics

- Incomplete letter formation
- Illegibility; poor handwriting
- Unusual writing speed (slow, fast, variable)
- Hand/wrist fatigue
- Unusual writing pressure (heavy or light)
- Multiple spelling errors
- Mixture of capital & lower-case letters within words
- Lack of letter anchoring on lines (swimming/floating letters)
- Misuse of space between words & letters
- Frequent erasures/crossing out
- Frustration/writing avoidance
- Simple word choice that does not reflect vocabulary abilities
- Lack of punctuation, capitalization, and paragraph indentation
- Written output does not match oral language skills
Hi Rodyn asked me for
some part of my Hand writing
because I have dysgraphia
Dysgraphia is a term for
learning disabilities that
affect spelling a penmanship
handwriting. It should
probably point out that
Despite how my Hand writing
looks I'm 26 and have a buring bery
from a pet with a mind in economics.
Second Grade Samples

MOY Second Grade sample (left)
EOY Second Grade Sample (below)
Intermediate Grade Samples

MOY Third Grade Sample (left)
EOY Fifth Grade Sample (below)
Screening & Progress Monitoring
From the Texas Dyslexia Handbook

“At the time of the update to this handbook it was determined there are no grade-level appropriate screening instruments for dysgraphia” (p. 10).

Collect/Review

• Handwriting
• Spelling
• Writing fluency (speed and accuracy)
• Written expression (authentic examples)

One way to organize screening and progress monitoring data is to utilize rubrics.

A multidisciplinary team should review screening and progress monitoring data, considering multiple data points, and recommend referral if appropriate.

At any time, a parent can request evaluation through Section 504 or Special Education.
Age/grade level expectations

Format (copy from model/independent composition)

Considerations

• Posture/body position/seat
• Handedness
• Grip
• Paper position
• Pressure
• Legibility
• Letter formation
• Letter fluency (speed and accuracy)
• Slant
• Reversals/directionality
### Posture, Pencil Grip, & Paper Position

<table>
<thead>
<tr>
<th>Functional</th>
<th>Non-functional</th>
</tr>
</thead>
<tbody>
<tr>
<td>dynamic tripod</td>
<td>thumb wrap</td>
</tr>
<tr>
<td>quadrupod</td>
<td>thumb tuck</td>
</tr>
<tr>
<td>stenographer's</td>
<td>index grip</td>
</tr>
</tbody>
</table>

Picture retrieved from: https://www.team4kids.com/grasp-grip-patterns-and-when-do-we-correct-them/
Age/grade level expectations

Spelling within isolation and within context

Miscues

- Phonological Miscues (camp as cap; slip as sip)
- Orthographic Miscues (chick as chik; judge as juj)
- Semantic Miscues (eight as ate; which as witch)
- Morphological Miscues (camped as campt; vision as vishun)
- Mental Orthographic Representational Miscues (said as sed; there as thare)
<table>
<thead>
<tr>
<th>Word</th>
<th>Student 1</th>
<th>Student 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>corn</td>
<td>corn</td>
<td>kn</td>
</tr>
<tr>
<td>shuttle</td>
<td>shuttel</td>
<td>shotl</td>
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<tr>
<td>here</td>
<td>hear</td>
<td>here</td>
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<tr>
<td>chomped</td>
<td>chompt</td>
<td>chupt</td>
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<tr>
<td>giraffe</td>
<td>giraff</td>
<td>juruf</td>
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<tr>
<td>determination</td>
<td>detirminashun</td>
<td>ditin</td>
</tr>
</tbody>
</table>

**Score**  

1  
1

*Beware of cut-points*
Age/grade level expectations

Word, sentence, paragraph level

Components
- Handwriting
- Spelling
- Syntax
- Mechanics
- Word choice
- Generation of ideas
- Organization of ideas
- Writing fluency (accuracy & speed/rate)
- Voice
- Clarity
- Purpose
# Written Expression Analysis

*Use TEKS to help you determine grade level expectations*
## Screening & Progress Monitoring

<table>
<thead>
<tr>
<th>COLLECT &amp; REVIEW</th>
<th>Activity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sentence Copy</td>
<td></td>
<td>Graphomotor production + visual motor processing + working memory</td>
</tr>
<tr>
<td>Sentence Dictation</td>
<td></td>
<td>Graphomotor production + spelling demands + orthographic processing + working memory</td>
</tr>
<tr>
<td>Alphabet Sequence</td>
<td></td>
<td>Graphomotor production + working memory</td>
</tr>
<tr>
<td>Spelling</td>
<td></td>
<td>Graphomotor production + spelling demands + orthographic processing + working memory</td>
</tr>
<tr>
<td>Written expression</td>
<td></td>
<td>Oral language + vocabulary + syntax + grammar + graphomotor production + spelling demands + orthographic processing + working memory</td>
</tr>
<tr>
<td>Teacher/Rate Info &amp; Checklists</td>
<td></td>
<td>Informal data, writing samples, anecdotal notes, professional judgement, classroom performance</td>
</tr>
</tbody>
</table>
Formal Evaluation
Evaluation

Components of Evaluation

- Knowledge of the student being assessed
- Validated evaluation instruments
- LPAC member (ELs)
- Incorportion of formal & informal data
- IDEA/504 & LEA evaluation procedures
- Multi-disciplinary team
- Trained personnel
- Knowledge of dysgraphia & related disorders

Dyslexia Handbook, 2018, pp. 61-65
https://tea.texas.gov/academics/dyslexia/
Step 1: Review Student Data

Gather & Review

- Parent Input
- Academic Assessments (STAAR/CBM/Benchmarks/TPRI/DRA/ISIP)
- Student Observation*
- LPAC/TELPAS
- Tiered Services History (RtI/MTSS)
- Screening Data
  - Writing Samples
    - Handwriting
    - Spelling
    - Writing fluency (accuracy & rate)
  - Teacher Checklist
Frequently occurring learning differences

- ADHD
- Dyslexia
- Autism
- Executive Functioning Deficits
- Speech Language Impairment

Dysgraphia is not primarily the result of exclusionary factors

- Sensory Motor Impairments
- Poor School Attendance
- Emotional Disturbance
- Lack of Socioeconomic Opportunity
- Limited English Proficiency
- Intellectual Disability

Dysgraphia is not primarily the result of determinant factors

- Lack of appropriate instruction from qualified personnel
Step 3b: Collect Data per Handbook

**Academic Skills**
- Letter formation
- Handwriting
- Word/sentence dictation (timed & untimed)
- Copying of text
- Written expression
- Writing fluency (both accuracy & fluency)

**Cognitive Processes**
- Memory for letter or symbol sequences (orthographic processing)

**Possible Additional Areas**
- Phonological awareness
- Phonological memory
- Letter retrieval
- Letter matching
Interpretation & Identification
Integrate data to determine eligibility and plan for instruction:

- Organize and review all data (screening, parent input, formal, & informal)
- Input standard scores, formative scores, and informal data in appropriate table(s)
- Utilize a multidisciplinary team decision-making process
- Report findings in report per federal, state, and district guidelines
- Align report writing practices across district; train personnel accordingly
# Use Rubrics & Tables

## Writing Rubric

<table>
<thead>
<tr>
<th>Considerations</th>
<th>Impaired</th>
<th>Below Average</th>
<th>Average</th>
<th>Above Average</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legibility</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Pencil Grip</td>
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<tr>
<td>Spelling</td>
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<tr>
<td>Writing Speed</td>
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<tr>
<td>Written Expression</td>
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<tr>
<td>Other:</td>
<td></td>
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</tbody>
</table>

## Score Table

<table>
<thead>
<tr>
<th>Subtests</th>
<th>Limited ≤79</th>
<th>Below Av 80-89</th>
<th>Average 90-110</th>
<th>Above Av 111-120</th>
<th>Excellent 121+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spelling</td>
<td></td>
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<td></td>
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<td></td>
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<tr>
<td>Spelling of Sounds</td>
<td></td>
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</tr>
<tr>
<td>Writing Samples</td>
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<tr>
<td>Sentence Writing Fluency</td>
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<tr>
<td>Editing</td>
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<tr>
<td>Other:</td>
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</tbody>
</table>

Woodcock Johnson-IV: [https://www.cco.com/program/woodcock-johnson-iv](https://www.cco.com/program/woodcock-johnson-iv)
Step 5: Write Report

- Report findings succinctly
- Avoid generalization (i.e., below average spelling, strange grip, sloppy handwriting)
- Be specific and descriptive (see next slides) when summarizing findings
- Findings and recommendations should support goal planning, instruction, and/or intervention
- Is AT, OT, or a speech referral warranted?
- Include recommendations for accommodations and interventions that may support student success
4th grader - MOY

Student wrote in print using his right hand. He demonstrated a functional tripod pencil grip with an open web space. He used his left hand to anchor the paper to the desk. Even so, his handwriting was mostly illegible. Many letters were floating above the line and he used a mixture of upper and lowercase letters within words (inappropriately). He wrote slowly and without automaticity. He reversed the lowercase letters g, b, d, and p and uppercase letters B and P which affected readability and spelling accuracy.

Student made many spelling errors on common, one and two syllable words. Spelling errors included morphological miscues (campt for camped and flys for flies) and phonological miscues (sot for salt and sip for slip). Student also made articulation errors (/th/ pronounced /s/) in the final position of words which were reflected in his spelling (/bath/ spelled as /bas/ and /math/ spelled as /mas/).

Student was able to verbally describe a recent school fieldtrip with clarity but was unable to convey the information similarly when asked to write about the experience. Although he wrote without hesitation, three out of five of his sentences did not begin with capital letters and two of his sentences lacked subject-verb agreement.
6th grader - EOY

Student wrote in print using her left hand. She utilized an unusual quadropod pencil grip with a wrapped thumb grasp and closed web space. Student demonstrated a hooked wrist position when writing. Writing stamina appeared compromised due to impaired grip and flexed wrist position. She asked to take breaks during the writing portions of testing noting, “My hand is feeling tired and stressed out.” Student wrote letters in isolation and words slowly and without automaticity. Although her handwriting was legible, she made many erasures that also affected written output. On a timed alphabet task, student appeared overwhelmed and requested additional time to complete writing the letters in sequence. She sub-vocalized the alphabet song when writing the letters of the alphabet and sub-vocalized letter sounds when spelling.

Student made many spelling errors on both high frequency and decodable words. Spelling errors included orthographic miscues (tite for tight and sheap for sheep) and semantic miscues (ate for eight and there for their).

When asked to write a paragraph about her dog, student said she preferred to use the computer because it was easier for her to spell words correctly. On a timed writing test, student produced more words per minute and spelled more words accurately when keyboarding as compared to writing by hand.

Teacher and parent reports corroborate assessment performance.
Committee members should have knowledge regarding:
- the student being assessed
- evaluation instruments
- interpretation of data
- the handwriting process
- dysgraphia and related disorders
- dysgraphia instruction
- district or charter school, state, and federal guidelines for evaluation

Figure 5.3. Questions to Determine the Identification of Dysgraphia

Do the data show a pattern of low writing and spelling ability that is unexpected for the student in relation to the student’s other cognitive abilities and provision of effective classroom instruction?

Does the pattern indicate the student has dysgraphia?

Does the student meet eligibility as a student with a disability under Section 504 or IDEA?
IDEA Regulations

A State must adopt, consistent with 34 CFR 300.309, criteria for determining whether a child has a specific learning disability as defined in 34 CFR 300.8(c)(10). In addition, the criteria adopted by the State:

• Must not require the use of a severe discrepancy between intellectual ability and achievement for determining whether a child has a specific learning disability, as defined in 34 CFR 300.8(c)(10);
• Must permit the use of a process based on the child's response to scientific, research-based intervention; and
• May permit the use of other alternative research-based procedures for determining whether a child has a specific learning disability, as defined in 34 CFR 300.8(c)(10).

Resources

• http://framework.esc18.net/display/Webforms/ESC18-FW-Summary.aspx?FID=143&DT=G&LID=en
Section 504

According to Section 504 of the Rehabilitation Act, to be eligible for services, accommodations, and protection against discrimination, a student must be determined, as a result of an evaluation, to have a physical or mental impairment which substantially limits one or more major life activities. A student need not demonstrate “educational need” to meet eligibility for Section 504 of the Rehabilitation Act.

https://www2.ed.gov/about/offices/list/ocr/504faq.html

Special Education

Individuals with Disabilities Education Act (IDEA) defines a specific learning disability (SLD) as “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.”

https://sites.ed.gov/idea/regs/b/a/300.8

“OSERS reiterates that there is nothing in the IDEA or our implementing regulations that would prohibit IEP Teams from referencing or using dyslexia, dyscalculia, or dysgraphia in a child’s IEP.” Dear Colleague Letter: Dyslexia Guidance, October 23, 2015. UNITED STATES DEPARTMENT OF EDUCATION. OFFICE OF SPECIAL EDUCATION AND REHABILITATIVE SERVICES (OSERS).

Reflection

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https://www.nationsreportcard.gov/
https://www.ncld.org/
https://sites.ed.gov/idea/regs/b/a/300.8
https://www.hmhco.com/programs/woodcock-johnson-iv
Thank-you!

Texas Education Agency