

Dyslexia, Dysgraphia, & Dyscalculia

Understanding and Supporting Students with
Learning Differences

Presented by Dana Huss

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ABOUT ME

DANA HUSS, CERTIFIED DYSLEXIA TUTOR

Owner | Principal, Growth Reading Center

Wife to a Serial Entrepreneur with dyslexia

- Growth Coffee (Fundraising)
- Construction
- Publishing

Mom to two sons with dyslexia

Teacher for over 25 years

Dyslexia Tutor since 2006

C-SLDS (in Process)

GROWTH READING CENTER

Reading Remediation for Schools

Online, One-on-One Tutoring

- Reading
- Math

IEP Support

Dyslexia Screenings for At-Risk Students

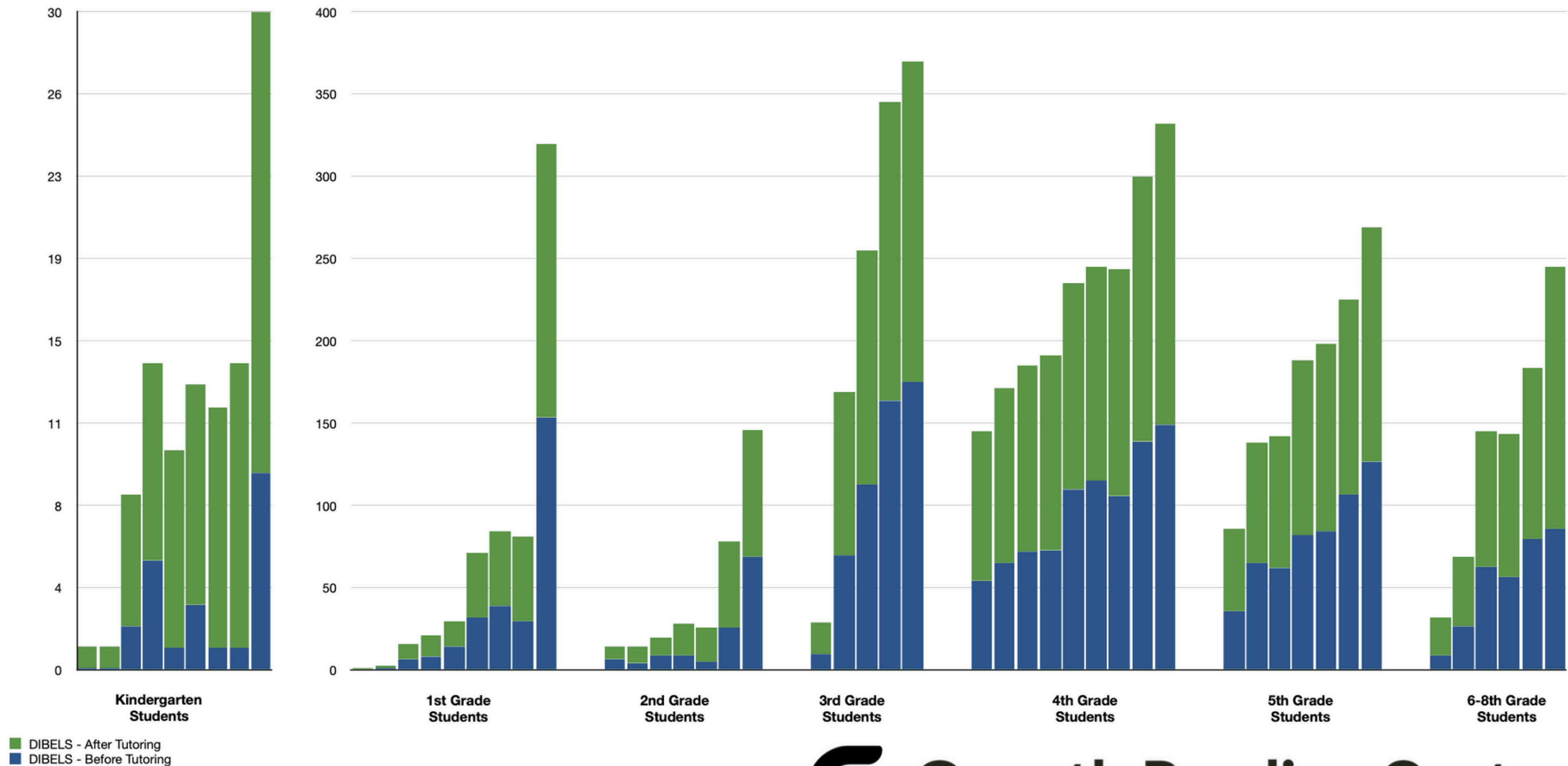
Special Education Consultations for Christian Schools

Professional Development For Schools



CWPM* Before Tutoring and After

52 Students - Average 21 Sessions



*Correct Words Per Minute

*Each blue & green column represents one student's reading growth.

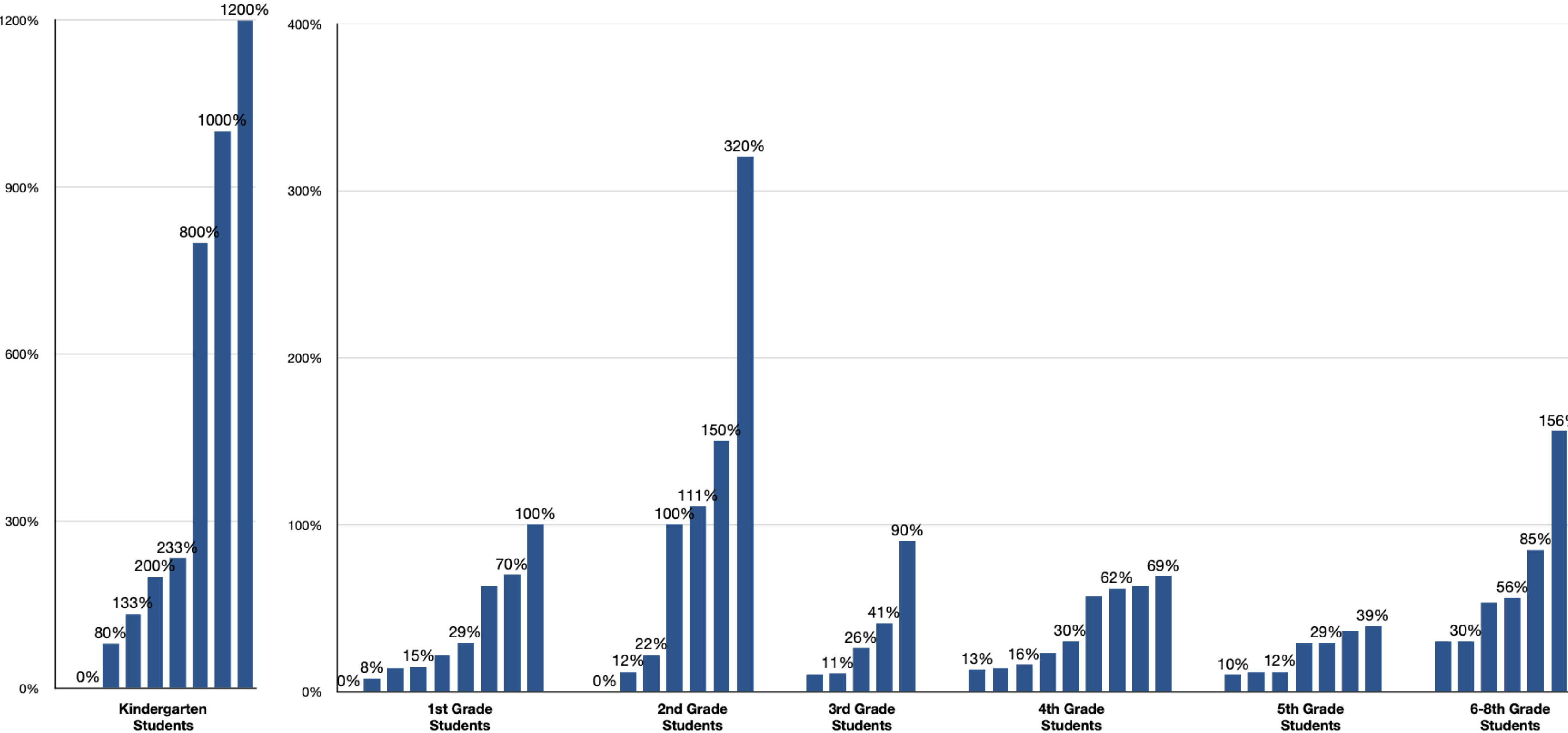
*Each student was administered DIBELS before tutoring with Growth Reading Center and then again at the end of their time with us. The average number of lessons that each student attended was 21.



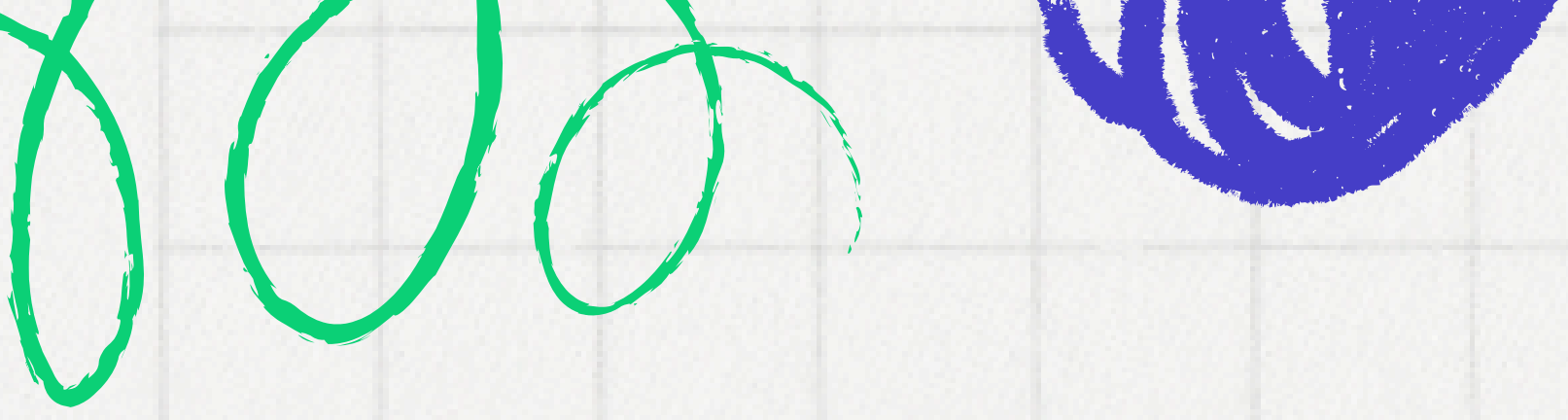
Growth Reading Center

Percentage of Increase

52 Students - Average 21 Sessions



*Each blue column represents one student's reading growth.
*Each student was administered DIBELS before tutoring with Growth Reading Center and then again at the end of their time with us. The average number of lessons that each student attended was 21.



Specific Learning Disorder

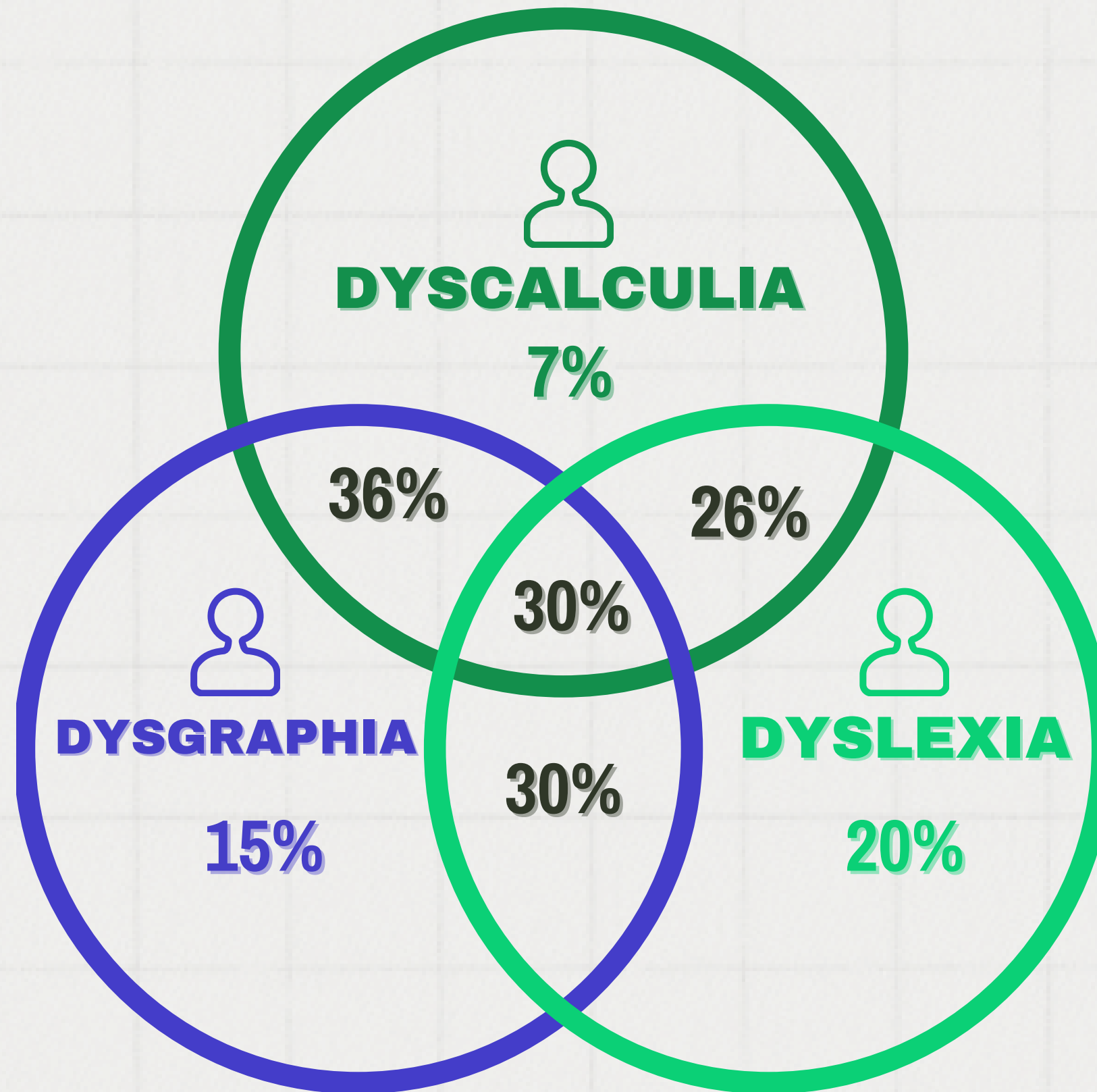
In Reading - Dyslexia

In Writing - Dysgraphia

In Math - Dyscalculia



Comorbidity



Dyslexia

Difficulty with Phonological Awareness

- Trouble recognizing or working with sounds in spoken language (Snowling, 2000).

Slow or Inaccurate Reading

- Reading words slowly and laboriously, often skipping small words or guessing based on initial letters (Shaywitz, 2003).

Poor Spelling

- Difficulty remembering letter patterns and spelling even simple, familiar words incorrectly (Lyon et al., 2003).

Difficulty Decoding Words

- Struggling to sound out unfamiliar words, especially words that don't follow typical phonetic rules (Snowling, 2012).

Dyslexia

Reading Comprehension Issues

- Difficulty understanding what was read due to focusing on word recognition (Catts, Hogan, & Adlof, 2005).

Word Retrieval Problems

- Difficulty finding the right word during conversation or speech (Wolf & Bowers, 1999).

Difficulty Learning New Vocabulary

- Trouble acquiring new words, especially when exposed only through reading (Stanovich, 1986).

Avoidance of Reading Activities

- Reluctance to engage in reading tasks or express frustration with school-related reading (Shaywitz, 2003).



Dysgraphia

Poor Handwriting

- Inconsistent, illegible handwriting with irregular letter sizes, shapes, and spacing (Berninger, 2009).

Difficulty with Spelling

- Frequent misspelling of words, even familiar ones, or the tendency to spell words phonetically rather than correctly (Richards, 2011).

Poor Letter Formation

- Difficulty forming letters correctly, leading to messy or distorted writing (Feder & Majnemer, 2007).

Inconsistent Grammar and Sentence Structure

- Struggling to structure sentences or use proper punctuation (Richards, 2011).
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Dysgraphia

Slow Writing Speed

- Taking an unusually long time to write or copy text, often resulting in incomplete work (Graham, 2010).

Difficulty Organizing Thoughts on Paper

- Trouble translating thoughts into written form, leading to poorly organized or incomplete writing (Berninger & Richards, 2010).

Avoidance of Writing Tasks

- Frustration with or reluctance to engage in writing tasks, often accompanied by complaints of fatigue (Graham & Weintraub, 1996).
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Dyscalculia

Difficulty Understanding Numbers

- Trouble grasping number concepts, counting sequences, or understanding math symbols (Butterworth et al., 2011).

Inability to Perform Basic Calculations

- Struggling with simple arithmetic operations like addition, subtraction, multiplication, and division (Shalev, 2004).

Poor Number Sense

- Difficulty estimating quantities, comparing numbers, or recognizing numerical patterns (Geary, 2004).

Trouble with Math Language

- Difficulty understanding math-related terms or word problems (Berch & Mazzocco, 2007).

Dyscalculia

Difficulty Remembering Math Facts

- Trouble recalling basic math facts such as multiplication tables, even after repeated practice (Shalev & Gross-Tsur, 2001).

Difficulty with Time and Money

- Trouble reading clocks, calculating time, or managing money effectively (Landerl et al., 2009).

Anxiety Related to Math

- Avoidance or anxiety when faced with math tasks, often feeling overwhelmed by simple math problems (Ashcraft & Ridley, 2005).

Overlapping symptoms

Poor Memory Recall

- Difficulty remembering sequences (whether it's letter patterns, number facts, or steps in a math problem) is a shared challenge across all three disorders

Difficulty with Organization

- Dyslexia, dysgraphia, and dyscalculia all involve difficulties organizing thoughts, whether in written text, solving multi-step math problems, or tracking a sequence of sounds

Avoidance of Academic Tasks

- Students with dyslexia, dysgraphia, and dyscalculia often avoid tasks that highlight their areas of weakness, such as reading, writing, or math, due to frustration and anxiety

Slow Processing Speed

- Across all three disorders, individuals often take longer to process and produce written or verbal responses, whether it's reading, writing, or solving math problems

What can you do?

Classroom Materials Dyslexia

- Post visual schedules and read them out loud.
- Provide colored strips or bookmarks to help focus on a line of text.
- Hand out letter and number strips.
- Use large-print text for worksheets.
- Use audiobooks.
- Allow the student to use text-to-speech software.
- Use speech-to-text software to help with writing.
- Have “hi-lo” (high-interest/low readability) books on hand.
- Give extra time for reading and writing.
- Give multiple opportunities to read the same text.
- Have students partner up for studying.

What can you do?

Introducing New Concepts Dyslexia

- Pre-teach new concepts and vocabulary.
- Provide typed notes or an outline of the lesson.
- Give advance organizers.
- Provide a glossary of content-related terms.
- Use visual or auditory support for lecture material.

What can you do?

Giving Instructions Dyslexia

- Give step-by-step directions and read written instructions out loud.
- Simplify directions using keywords.
- Highlight keywords and ideas on worksheets.
- Check in with the student often.
- Show examples of correct and completed work.
- Provide a rubric of a successful assignment.
- Help the student break tasks into smaller steps.
- Give self-monitoring checklists.
- Arrange worksheet problems from easy to hard.

What can you do?

Completing Tests and Assignments Dyslexia

- Grade the student on content, not things like spelling or reading fluency.
- Allow different ways to show understanding.
- Allow different ways to respond to test questions (scribe).
- Give extra time for taking tests.
- Set up a quiet room for test-taking.

What can you do?

Classroom Materials Dysgraphia

- Provide pencil grips or different types of pens or pencils to see what works best for the student.
- Provide handouts so there's less to copy from the board.
- Provide typed copies of classroom notes or lesson outlines to help the student take notes.
- Provide extra time to take notes and copy material.
- Allow the student to use an audio recorder or a laptop in class.
- Provide paper with different- colored or raised lines to help form letters in the right space. Provide graph paper (or lined paper to be used sideways) to help line up math problems.

What can you do?

Giving Instructions Dysgraphia

- Provide paper assignments with name, date, title, etc., already filled in.
- Provide information needed to start writing assignments early. Help the student break writing assignments into steps.
- Provide a rubric and explain how each step is graded.
- Give examples of finished assignments.
- Offer alternatives to written responses, like giving an oral report.

What can you do?

Completing Tests and Assignments

Dysgraphia

- Adapt test formats to cut down on handwriting. For example, use “circle the answer” or “fill in the blank” questions.
- Grade based on what the student knows, not on handwriting or spelling.
- Use a scribe or speech-to-text so the student can dictate test answers and writing assignments.
- Let the student choose to either print or use cursive for handwritten responses.
- Allow a “proofreader” to look for errors.
- Provide extended time on tests. Provide a quiet room for tests if needed.

What can you do?

Classroom Materials Dyscalculia

- Manipulatives: Physical objects like blocks, coins, rulers, base ten blocks, and number lines can help students visualize math concepts.
- Visual aids: Charts, graphs, diagrams, and images can help students understand math concepts. For example, you can draw a large square to help students understand the concept of perfect squares.
- Graph paper: Graph paper can help students line up numbers and problems.
- Calculators: Allow a calculator when computation is not the focus of the lesson.

What can you do?

Introducing New Concepts Dyscalculia

- Review before teaching new skills.
- Teach students to “self-talk” through solving problems.
- Use attention-getting phrases.
- Connect math to real life.
- Demonstrate using manipulatives.
- Model how to do the task and provide a visual.
- Check in frequently with the student.

What can you do?

Giving Instructions Dyscalculia

- Give a rubric outlining assignment elements.
- Include a list of math formulas, math facts, or tables.
- Create separate worksheets for word and number problems.
- Break down worksheets into sections.
- Give more space to write problems and solutions.
- Highlight or circle key words and numbers on word problems.
- Give step-by-step instructions.
- Offer checklists for multi-step procedures.
- Break down large tasks into smaller parts.
- Give extra time for large assignments.

What can you do?

Completing Assignments

Dyscalculia

- Offer graphic organizers to organize information.
- Offer graph paper to help line up information.
- Show how to focus on one problem by covering the others with a piece of paper.
- Let the student use visual aids or manipulatives.
- Let the student write out charts or draw sketches to solve problems.
- Allow a calculator when computation is not the focus of the lesson.
- Provide checkpoints to offer feedback.

What can you do?

Completing Tests Dyscalculia

- Allow extra time for assessments.
- Provide a quiet room for taking tests.
- Provide a calculator when not evaluating computation.
- Limit the number of problems on one page.
- Give plenty of space to solve each problem.

Curriculum Options

- Reading & Spelling (Dyslexia)
 - Orton-Gillingham (Science of Reading Risk)
 - UFLI (University of Florida Literacy Institute Foundations)
 - All About Spelling
- Writing (Dysgraphia)
 - Handwriting Without Tears
 - Writing Revolution
- Math (Dyscalculia)
 - Touch Math
 - Times Tales

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