

OKLAHOMA DYSLEXIA, DYSGRAPHIA, AND DYSCALCULIA HANDBOOK



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Oklahoma Dyslexia, Dysgraphia, & Dyscalculia Handbook

Task Force Acknowledgment

As part of the stakeholder process to ensure broad representation in revising this handbook, a wide group of individuals, some with expertise in dyslexia, education, and/or the Oklahoma education community, was appointed to develop revisions to the handbook. We would like to acknowledge the members of the IDEA-B Advisory Panel and the Dyslexia Work Group.

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Table of Contents

Oklahoma Dyslexia, Dysgraphia, & Dyscalculia Handbook Task Force Acknowledgment.....	1
Preface.....	5
How to Use the Handbook	6
Accessibility, Assistive Technology, and Accessible Educational Materials	6
Chapter 1: Introduction to Dyslexia, Dysgraphia, and Dyscalculia	9
#SayDyslexia in Schools!	9
Lifelong Impact and Student Wellness	12
Student Advocacy	18
Family & School Partnerships	23
Parent Training and Support	31
Chapter 2: Building a Supportive District.....	37
Building a Supportive District	37
Dropout and Graduation.....	40
Counselors and Transition Supports	41
District Professional Development	43
Chapter 3: Instructional Systems.....	47
Introduction to Response to Intervention (RtI) and Multi-Tiered System of Supports (MTSS)	47
Universal Design for Learning (UDL)	50
Basics of Accommodations	57
Chapter 4: Defining Dyslexia	65
Dyslexia Definition	65
Characteristics of Dyslexia	66
Recognizing Dyslexia.....	69
Chapter 5: Screening for Risk of Characteristics of Dyslexia	71
Universal Screening	72
Strong Readers Act.....	72
Screening for Characteristics of Dyslexia.....	73
Screening in Multi-Tiered Systems of Support (MTSS).....	74
Dyslexia Checklist for Teachers.....	76
Chapter 6: Effective Core Reading Instruction	79
Defining the Science of Reading	79

The Reading Brain.....	80
How Do We Learn to Read Using the Simple View of Reading?	82
Components of Effective Instruction Using the Reading Rope	83
Knowledge and Practice Standards for Teachers of Reading	94
Chapter 7: Intervention for Students with Dyslexia	101
Why Is Reading Difficult for Students with Dyslexia?	102
Delivering Tiered Dyslexia Intervention	104
Considerations for Intervention	109
Computer Programs for Instruction.....	111
AT: Dyslexia Supports	111
Chapter 8: Adolescent Literacy	115
Adolescent Literacy.....	115
Instruction and Intervention	119
Tools for Teachers	122
Special Considerations for Students with Dyslexia/Persistent Reading Difficulties	123
AT: Dyslexia Supports for Adolescents	123
Chapter 9: Defining Dysgraphia	125
Dysgraphia Definition	125
Chapter 10: Characteristics of Dysgraphia	129
Signs and Symptoms of Dysgraphia	130
Dysgraphia: Teacher Observation Checklist	131
Chapter 11: Effective Instructional Practices for Students with Dysgraphia Across the Continuum	133
Why is Writing Difficult?	134
Delivering Tiered Dysgraphia Intervention	135
Considerations for Special Situations	149
AT: Dysgraphia Supports	150
Chapter 12: Defining Dyscalculia	153
Dyscalculia Defined	153
Recognizing Dyscalculia	156
Math Proficiency Act	160
Related Conditions with Dyscalculia	162
Chapter 13: Characteristics of Dyscalculia.....	165
Signs and Symptoms of Dyscalculia	165
Mathematics and Language	169

Chapter 14: Effective Instructional Practices for Students with Dyscalculia Across the Continuum	173
Understanding Math Difficulties	173
Core Mathematics Instruction (Tier 1)	175
Math Intervention	178
AT: Dyscalculia Supports	181
Chapter 15: Special Education Services	183
Dyslexia, Dysgraphia, and Dyscalculia versus a Specific Learning Disability	183
Evaluation and Eligibility for Special Education Services	186
Using Evaluation to Design an Individualized Education Program (IEP)	191
Section 504 Evaluation	193
Section 504 Plan or IEP	196
Least Restrictive Environment (LRE)	199
Chapter 16: Special Population Considerations	203
Giftedness and Twice-Exceptional Students	203
English Learners (ELs)	206
Cultural, Educational, and Experiential Considerations	207
Evidence-Based Practices for Equitable Support	211
Progress Monitoring and Data-Based Decision Making	216
WIDA in Oklahoma: What Educators Need to Know	217
The Importance of Home Language and the Benefits of Multilingualism	218
Co-Occurring Disabilities	222
Appendix	229
Glossary	247
Citations	259

Preface

Revised July 2026

This Oklahoma Dyslexia, Dysgraphia, and Dyscalculia Handbook is meant to provide guidance to educators, students, families, and community members about dyslexia, dysgraphia, dyscalculia, and best practices for identification, intervention, and support for children with these disabilities. Information is provided in the following areas.

- Screening for risk.
- Effective core reading instruction.
- Intervention for students with dyslexia, dysgraphia, and dyscalculia.
- Comprehensive evaluations for special education eligibility.
- Resources to support students and parents/families.
- Resources to support educators.

The intent of this handbook is to reach a wide audience with comprehensive information and guidance to support effective instruction and intervention for students with dyslexia, dysgraphia, and dyscalculia. In addition, this handbook provides guidance to assist school-based decision-making teams in determining appropriate educational programming decisions for students with dyslexia, dysgraphia, and dyscalculia. This handbook can also serve as a starting point when additional resources are needed to support students. Information provided in this handbook references legal requirements through state and federal laws, including:

- State statutes [[§70-6-194](#) (p.390) and [§70-18-109.5](#) (p.690)].
- [Section 504 of the Rehabilitation Act of 1973](#) (Section 504).
- [The Americans with Disabilities Act](#) (ADA) as amended.
- [Individuals with Disabilities Education Act](#) (IDEA, 2004).

To complement this handbook, the development of additional dyslexia resources is ongoing. The Oklahoma State Department of Education (OSDE) has provided asynchronous professional development opportunities to fulfill the requirements set by [H.B. 1228 \(2019\)](#) for Dyslexia and Dysgraphia Awareness Training in schools. Other materials and resources are linked throughout this document to provide current and relevant information, as these materials and resources are updated more regularly than revisions to the handbook. Please locate the Online version of this Handbook on the OSDE website to access links to resources.

How to Use the Handbook

The Oklahoma Dyslexia, Dysgraphia, & Dyscalculia Handbook is intended to provide a wide audience with comprehensive information, guidance, and resources to support students who are at risk for characteristics of dyslexia, dysgraphia, and dyscalculia and students who are already identified as having one or more of these disabilities.

The table of contents is organized by unit to provide specific information relevant to dyslexia, dysgraphia, and dyscalculia. Organized under the main units, the chapters support individual student needs and thus may be relevant for students at risk of, or identified as having, dyslexia, dysgraphia, and/or dyscalculia.

Each chapter supports understanding using “Self-Checks”. Chapters begin with these self-checks for readers to challenge their existing perceptions and understanding of these topics. Each chapter then provides deeper information and guidance related to the self-check questions. At the end of each chapter, the reader can verify their understanding and responses to the self-checks using the Key Takeaways. The chapter content provides more support if they need more in understanding each chapter’s key takeaways.

Accessibility, Assistive Technology, and Accessible Educational Materials

The term “accessible” is defined as follows: When “a person with a disability is afforded the opportunity to acquire the same information, engage in the same interactions, and enjoy the same services as a person without a disability in an equally effective and equally integrated manner, with substantially equivalent ease of use” (Departments of Justice and Education: Dear Colleague Letter, 2010; US Department of Education Office of Civil Rights, 2013).

Throughout the remainder of the text, descriptions of certain “aids and services” intended to assist students with dyslexia, dysgraphia, and/or dyscalculia are provided. These aids and services are designed to make the educational experience of students with disabilities “accessible” and, thereby, as effective as possible.

Assistive technology (AT) is one of the primary aids that can be utilized in educational contexts and includes both devices and services. Per the Individuals with Disabilities Education Act (IDEA), schools must “ensure that assistive technology devices or assistive technology services, or both...are made available to a child with a disability if required as a part of the child’s special education; related services; or supplementary aids and services” (34 CFR §300.105).

AT devices are defined as “...any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of a child with a disability. The term does not include a medical device that is surgically implanted, or the replacement of such device” (34 CFR §300.5). In short, assistive technology is any device or system that enables a person to do that which could not be done otherwise without the aid. Further, the aid may enhance independence and efficiency. A variety of devices/systems are introduced in the following chapters that include low-tech, mid-tech, and high-tech items.

AT services are defined as “...any service that directly assists a child with a disability in the selection, acquisition, or use of an assistive technology device. The term includes the evaluation of the needs of a child with a disability, including a functional evaluation of the child in the child’s customary environment” (34 CFR §300.6). These services can take a variety of forms depending on the need(s) of the student and the structure of the educational environment. Additionally, Oklahoma ABLE Tech, on behalf of the Oklahoma State Department of Education (OSDE), provides a variety of services including consultations, technical assistance, device demonstrations, device loans, and training opportunities.

Accessible Educational Materials (AEM), which are also important to consider when addressing individual needs or barriers, are defined by the National Center on AEM as

“print- and technology-based educational materials, including printed and electronic textbooks and related core materials that are designed or enhanced in a way that makes them usable across the widest range of learner variability, regardless of format (e.g., print, digital, graphic, audio, video)” (aem.cast.org/get-started/defining-accessibility).

Local educational agencies (LEAs) are required to provide educational materials in accessible formats (34 CFR § 300.172). Further, these materials should be made available in a timely manner, which is defined by OSDE as “at the same time they are provided to other people” (Special Education Services Policies and Procedures), so the same learning opportunities are available to all students.

In January 2024, the U.S. Department of Education released a guidance document titled Myths and Facts Surrounding Assistive Technology Devices and Services (sites.ed.gov/idea/files/Myths-and-Facts-Surrounding-Assistive-Technology-Devices-01-22-2024.pdf). This document aims to support students, families, and schools by providing guidance on assistive technology (AT) under the Individuals with Disabilities Education Act (IDEA). The National Center on Accessible Digital Educational Materials & Instruction (NCADEMI) further enhanced this information by detailing the AEM requirements under IDEA in More to the Myths and Facts: Addressing Accessible Educational Materials in the 2024 Assistive Technology Guidance (ncademi.org/aem-guide).

For more information about assistive technology devices and services or Accessible Educational Materials, contact Oklahoma ABLE Tech (okabletech.org/). For additional support accessing educational materials in accessible formats, contact Accessible Instructional Materials (AIM) Center (oklahoma.gov/olbph/aim-center.html).

Chapter 1: Introduction to Dyslexia, Dysgraphia, and Dyscalculia

Knowledge Self-Check

1. Does Oklahoma recognize dyslexia, dysgraphia, and dyscalculia as disabilities?
2. Are dyslexia, dysgraphia, and dyscalculia rare occurrences?
3. What can families and students do to support students with dyslexia, dysgraphia, and dyscalculia?

“Reading is the fundamental skill upon which all formal education depends. Research now shows that a child who doesn’t learn the reading basics early is unlikely to learn them at all. Any Child who doesn’t learn to read early and well will not master other skills and knowledge and is unlikely to ever flourish in school or in life” (Moats, 1999).

-Dr. Louisa Moats

Specific Learning Disabilities (SLD) are brain-based disorders that affect an individual’s capacity to excel in specific academic areas. These disabilities manifest differently but primarily affect reading, writing, and mathematical skills. The most common learning disabilities are dyslexia, dysgraphia, and dyscalculia.

For more information on definitions and characteristics of these disorders, see Chapter 4: Defining Dyslexia, Chapter 9: Defining Dysgraphia, and Chapter 12: Defining Dyscalculia.

#SayDyslexia in Schools!

Oklahoma recognizes dyslexia, dysgraphia, and dyscalculia as disabilities under the Individuals with Disabilities Education Act (IDEA) and Section 504 of the Rehabilitation Act. In October 2015, the United States Department of Education issued a [Dear Colleague](#) guidance letter to ensure a high-quality education for children with Specific Learning Disabilities (SLD) (U.S.

Department of Education, 2015). The purpose of the 2015 letter was to "Clarify that there is nothing in the IDEA that would prohibit the use of the terms dyslexia, dyscalculia, and dysgraphia in IDEA evaluation, eligibility determinations, or IEP documents."

"Identifying a child's dyslexia doesn't limit their potential. It empowers them to understand the nature of their difficulties and strengths and their path for success"
(Downey, 2019).

-Headmaster Josh Clark

Members of the Dyslexia and Education Taskforce reached out to a group of students with dyslexia and asked them to share their experiences. These students reported that, after receiving an identification of dyslexia, effective reading intervention, and support through accommodations and assistive technology, they felt supported and were able to work up to their potential.

Students had a newfound level of confidence in their ability to learn, and their educators shared the following statements about them.

- *"He is the hardest working student in my class."* – Teacher
- *"I wish every student gave the effort she does."* – Teacher
- *"Committed, loyal, hardworking."* – Coach
- *"Outside the box thinker."* - Teacher

What Dyslexia is Not!

- Dyslexia is NOT...reading or writing letters backward.
- Dyslexia is NOT...caused by poor eyesight, vision processing problems, or hearing problems.
- Dyslexia is NOT...an intellectual or developmental disability.
- Dyslexia is NOT...a lack of educational opportunity or a lack of books in the home.
- Dyslexia is NOT...a lack of motivation or laziness; in fact, students with dyslexia are working harder than their peers.

Dispelling Myths of Dyslexia

Myth: People with Dyslexia Cannot Read

Fact: Incorrect. Most children and adults with dyslexia can read, even if it is at a basic level. Spelling is one of the classic red flags alerting parents and teachers to a serious underlying problem. The child may be unable to understand the basic code of the English language and cannot break down or reconstruct words (with spelling) using the code (letters).

Myth: More boys have Dyslexia than Girls.

Fact: Boys' reading disabilities are indeed identified more often than girls'. But studies indicate the actual prevalence of the disorder is nearly identical across genders.

What Dysgraphia is not!

- Dysgraphia is NOT...part of a developmental disability that has fine motor deficits (e.g., intellectual disability, autism, cerebral palsy).
- Dysgraphia is NOT...secondary to a medical condition (e.g., meningitis, significant head trauma, brain trauma).
- Dysgraphia is NOT...associated with generalized developmental motor or coordination difficulties (Developmental Coordination Disorder).
- Dysgraphia is NOT...impaired spelling or written expression with typical handwriting (legibility and rate).

Dispelling Myths of Dysgraphia

Myth: Messy handwriting indicates laziness.

Fact: Students who write slowly, sloppily, or fail to complete writing assignments well are sometimes labeled “lazy” or “unmotivated.” While not particularly uncommon, dysgraphia does often go undiagnosed, particularly in gifted children. When a student is demonstrating difficulties with instructional tasks, including handwriting, it is important for educators to provide evidence-based interventions matched to need and for educators to continue monitoring student progress in the skill.

Myth: Writing issues like dysgraphia are uncommon.

Fact: The authors of [*The Mislabeled Child*](#) estimate that as many as one in five children have difficulty expressing themselves through writing. Still, dysgraphia often goes undiagnosed in students (Eide & Eide, 2006).

What Dyscalculia is not!

- Dyscalculia is NOT...reversing or confusing numbers.
- Dyscalculia is NOT...the same for all students.
- Dyscalculia is NOT...an indicator that a student will have dyslexia, dysgraphia, or autism.
- Dyscalculia is NOT...rare.

Dispelling Myths of Dyscalculia

Myth: Dyscalculia is just math dyslexia.

Fact: Dyscalculia is often referred to as math dyslexia; however, they are not the same condition with interchangeable names. Simply put, “being bad at math” (or math anxiety) and having dyscalculia are two very different things.

Myth: People with dyscalculia can never do math.

Fact: Dyscalculia is no doubt a daunting developmental concern that does not have a cure. However, it can be remediated by using alternative approaches to learning. An example of an alternative approach could include a multisensory approach, which delivers information through various senses so children can absorb the most information out of the classes.

Lifelong Impact and Student Wellness

Research suggests that students with learning disabilities may experience higher levels of psychological distress compared to their peers without disabilities. They may be more likely to experience anxiety, depression, low self-esteem, and social difficulties due to challenges in academic performance, negative feedback, and perceived stigmatization. Therefore, early intervention of student skill deficits and maintaining encouraging learning environments are essential to supporting long-term, academic, and

psychological outcomes for students with learning disabilities, including dyslexia, dysgraphia, and dyscalculia.

When asked by members of The Dyslexia and Education Task Force why it is important for educators to understand dyslexia, students with dyslexia shared that they had struggled with feelings of shame in relation to their reading difficulties. Too often, these students' educators made comments that perpetuated these feelings of poor academic self-concept and self-efficacy, such as:

- *"Not all kids go to college."* - Kindergarten teacher
- *"You obviously are not doing your reading homework, because you are not getting better."* - Teacher
- *"Lazy and inattentive."* - Teacher
- *"Unable to be taught."* - Special education teacher

Students have further described how their learning difficulties impact their emotional and social well-being, and the importance of quality instruction and supportive educators.

- *"If I have a teacher who isn't open to allowing me to use accommodations or is less flexible, I stress so much that I don't learn anything. I am always worried about disappointing my teachers."* - Student
- *"Allowing me to use my accommodations helps me keep up, even though I'm usually still behind."* - Student
- *"It is really hard when the whole class is waiting on me to finish taking notes from the board or finish assignments or tests. I never get any free time in the day, because I am also having to finish work when everyone else is done."* - Student

For several students with dyslexia, dysgraphia, and dyscalculia, lack of academic success, uneducated teacher response to learning difficulties, and associated low self-efficacy and self-esteem have created a negative view of the educational environment and academic tasks. This negative view may result in emotional symptoms, including anxiety (including test anxiety) or even panic; agitation, anger, or aggression (such as temper

tantrums in younger children); fear (including a fear or even phobia of going to school); and even physical symptoms of any of the above, such as nausea and vomiting, sweating, stomachache, etc.

When school and the learning tasks students have struggled with become a source of anxiety, working memory is directly affected, and ongoing learning is impaired (Chernoff & Stone, 2014; Ramirez, Gunderson, Levine, & Beilock, 2013; Young, Wu, & Menon, 2012). Thus, school itself may continue to perpetuate learning difficulties for students who have developed educational anxiety.

Further, students who experience anxiety around learning tasks may exhibit behavioral difficulties, such as aggression or school refusal, in an effort to escape or avoid these tasks. Educators are encouraged to consider the potential of academic difficulties, including dyslexia, dysgraphia, and dyscalculia, for students who exhibit behavioral challenges.

For more information, see the International Dyslexia Association's (IDA's) fact sheet entitled, [The Dyslexia-Stress-Anxiety Connection, - Implications for Academic Performance and Social Interactions](#) (International Dyslexia Association, 2013).

In addition to anxiety, students with dyslexia, dysgraphia, and dyscalculia may face increased risks for other mental health challenges, including depression, low self-esteem, and suicidal ideation (Wilmot et al., 2023). It is essential that families and educators understand that several factors may contribute to an increased risk of suicide among individuals with learning disabilities (Verlenden et al., 2024).

Academic and Social Challenges: Dyslexia, dysgraphia, and dyscalculia can present academic and social difficulties, which can lead to feelings of frustration, isolation, and inadequacy. Persistent struggles in these areas can contribute to a sense of hopelessness and despair, increasing a student's emotional vulnerability to suicidal thoughts (Adi et al., 2024).

Bullying and Stigmatization: Individuals with dyslexia, dysgraphia, and dyscalculia may face higher rates of bullying and stigmatization, which can have a profound impact on their mental health. The experience of bullying and social exclusion can contribute to feelings of loneliness, depression, and a heightened risk for suicidal ideation (Wilmot et al., 2023).

Access to Support and Resources: Limited access to appropriate support, interventions, and mental health resources can contribute to an increased risk of suicide. Adequate support systems, including educational accommodations, mental health services, and a strong social support network, are crucial in mitigating this risk.

Mitigate Negative Lifelong Impacts & Promote Student Wellness through Protective Factors

Effective Instruction as a Protective Factor: Effective instruction can act as a protective factor against future psychological distress by providing students, including those with dyslexia, opportunities for academic success.

Building Self-Efficacy: Effective instruction focuses on strengthening students' self-efficacy (their belief in their ability to succeed). When students with dyslexia, dysgraphia, and dyscalculia receive explicit instruction, targeted interventions, and opportunities to experience success, their self-efficacy can increase. Higher self-efficacy is associated with better psychological well-being and resilience as students feel more confident in their abilities to overcome challenges (Cassidy, 2015).

Positive Feedback and Encouragement: Effective instruction emphasizes providing positive feedback and encouragement. Recognizing and celebrating students' efforts and progress, regardless of their pace, can foster a positive learning environment. Positive feedback promotes a sense of accomplishment, boosts self-esteem, and reduces the negative impact of academic setbacks, thereby contributing to lower levels of psychological distress (Hyseni Duraku & Hoxha, 2018).

Supportive Classroom Climate: Effective instruction promotes a supportive classroom climate. Teachers who create a safe and accepting environment, encourage peer collaboration, and promote positive social interactions can contribute to students' sense of belonging and overall well-being. By fostering positive relationships and a supportive classroom community, students with dyslexia, dysgraphia, and dyscalculia are less likely to experience social isolation or stigmatization, thereby reducing their psychological distress (Mori et al., 2025).

Collaborative efforts among educators, specialized professionals, and families can ensure that instructional approaches are evidence-based and aligned with the unique requirements of students with dyslexia, dysgraphia, and dyscalculia, thus mitigating psychological distress and promoting positive psychological outcomes (Espinass et al., 2025).

For more information on implementing effective instruction for reading, see Chapter 6: Effective Core Reading Instruction and Chapter 7: Intervention for Students with Dyslexia.

For more information on implementing effective instruction for writing, see Chapter 11: Effective Instructional Practices for Students with Dysgraphia Across the Continuum.

For more information on implementing effective instruction for mathematics, see Chapter 14: Effective Instructional Practices for Students with Dyscalculia Across the Continuum.

“Parents (and teachers too) 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” (Shaywitz, 2003).

- Dr. Sally Shaywitz

Promoting Coping and Resilience

Students with dyslexia, dysgraphia, and dyscalculia often face numerous academic and social challenges. Despite these challenges, many students with these disabilities demonstrate resilience and develop effective coping strategies. Resilience and coping strategies play a crucial role in promoting positive psychological outcomes for students with dyslexia, dysgraphia, and dyscalculia. Here's how resilience and coping strategies can benefit students.

Resilience: the ability to bounce back from adversity, adapt to challenges, and maintain well-being in the face of stress or setbacks. Students with learning difficulties, such as dyslexia, dysgraphia, and dyscalculia, often encounter academic, social, and emotional difficulties, making resilience a valuable trait. Building resilience involves cultivating a growth mindset,

emphasizing strengths, and fostering a positive outlook. Resilient students are more likely to view challenges as opportunities for growth, persist in the face of obstacles, and maintain a sense of self-efficacy.

Self-Advocacy: Developing self-advocacy skills empowers students with dyslexia, dysgraphia, and dyscalculia to express their needs, seek support, and advocate for themselves effectively. By understanding their learning strengths and weaknesses, setting realistic goals, and communicating their needs to teachers and peers, students can actively participate in their education.

Educators and families can teach students about the dyslexic brain and how it works, to support increased self-advocacy. Self-advocacy enhances self-confidence, self-determination, and resilience, enabling students to navigate challenges and access appropriate resources.

Effective Coping Strategies: Coping strategies are behavioral, cognitive, or emotional techniques individuals use to manage stress and regulate their emotions. Students with dyslexia, dysgraphia, and dyscalculia can benefit from acquiring and utilizing effective coping strategies. These may include items listed below.

- ***Problem-Solving Skills:*** Teaching students systematic problem-solving techniques can help them tackle academic and social challenges. Breaking down tasks, brainstorming solutions, and evaluating the outcomes can enhance their ability to cope effectively.
- ***Behavior Regulation:*** Teaching students strategies to identify, understand, and manage their emotions and behaviors can contribute to their overall well-being. Techniques such as deep breathing, mindfulness exercises, and engaging in enjoyable activities can help students regulate and reduce stress.
- ***Skills to Support Learning:*** Taking short breaks with quick bursts of physical movement (jumping jacks, 30-second jog in place, windmills, exercises that cross the midline, etc.) can help move information into long-term memory. Other support skills to help students compensate (e.g., graphic organizers) should be taught and supported.
- ***Seeking Support:*** Encouraging students to seek support from

teachers, peers, and family members can provide valuable emotional and practical assistance. Establishing a supportive network and teaching students how to ask for help when needed can enhance their coping abilities.

Positive Mindset: Fostering a positive mindset is crucial for students with dyslexia, dysgraphia, and dyscalculia. Helping students reframe negative thoughts, challenge self-doubt, and focus on their strengths can enhance their resilience and coping abilities.

Cultivating optimism and self-belief promotes a sense of agency and fosters a growth-oriented mindset, allowing students to persist in the face of challenges and setbacks.

Emotional Support and Encouragement: Providing emotional support and encouragement is vital for students with dyslexia, dysgraphia, and dyscalculia. Recognizing and validating their efforts, celebrating their achievements, and creating a safe and nurturing environment can boost their resilience and foster a positive self-concept. Encouragement from teachers, peers, and family members can enhance students' coping abilities and promote their psychological well-being.

“Family engagement improves classroom dynamics and increases teacher expectations, student-teacher relationships, and cultural competence, regardless of students’ age groups” (Boberience, 2013).

-Dr. Liepa Boberience

Student Advocacy

Students who build self-advocacy skills are more likely to do well in school, work and life. Students often feel more confident in what they are learning and doing. There are three important components to self-advocacy:

- **Understanding** your needs.
- **Knowing** what kind of support might help.
- **Communicating** these needs to others.

Here’s a simple example: Say you’re a student who struggles with writing. But, you’re in science class that requires taking a lot of notes. If you are a

strong self-advocate, you **understand** that taking notes is going to be a challenge for you. You **know** that support like pre-printed notes may help. You **communicate** your challenge to the teacher and ask for pre-printed notes. If the teacher says no, you **know** you can reach out to a counselor or their person to help.

Students learn self-advocacy skills in small steps, and often with the help of a parent, teacher, or counselor to give support and guidance. Everyone can learn to self-advocate. As with any valuable skill, it takes time and practice. Let's get started.

You are not alone

- It's likely that 4-5 other students in your class find reading difficult, and 1 in 5 students is affected by dyscalculia.
- Some adults struggle to read.
- Even some teachers struggled to read.



What is Dyslexia?

- When people have difficulty learning to read, they might have dyslexia.
- *Dys* means difficult, and *lexia* means words.
- Dyslexia means difficulty reading words.

What is Dysgraphia?

- When people have difficulty learning to write, they might have dysgraphia.
- *Dys* means difficult and *graphia* means write.
- Dysgraphia means difficulty writing words.

What is Dyscalculia?

- When people have difficulty learning to do math calculations, they might have dyscalculia.
- *Dys* means difficult, and *calculia* means to calculate.
- Dyscalculia means difficulty with math calculations.



Why is it hard?

- We are born with the ability to speak words; we learn that by listening to others speak.
- We are not born with the ability to read, write, or calculate.
- It takes instruction, hard work, and practice to become a reader, writer, and calculator.
- Dyslexia, dysgraphia, and dyscalculia don't mean you aren't smart. In fact, these difficulties have nothing to do with intelligence.
- Dyslexia means your brain processes letters and sounds differently, which is why reading and spelling can be difficult.
- Everyone is different and has their own strengths and challenges.
- We all have strengths!

Who is on your team?

- At school, you have a team, and you are a very important person on that team!
- You are the heart of the team.
- This team may include teachers, parents, counselors, coaches, or others.
- Learning about your educational difficulties and communicating your needs is called self-advocacy.
- Self-advocacy is sharing what you need to be successful, and what is and what is not working for you.
- It is important to know your strengths, challenges, and limits.
- Members of your support team can help you achieve your goals.

Self-advocacy

- Knowing your strengths and challenges and asking for accommodations and/or modifications that work best for you, is self-advocacy.
- Self-advocacy is not always easy, because it takes time to know what works and doesn't work for you.
- Self-advocacy is a life-long skill that can improve your confidence and independence.

Impacts Beyond Reading, Writing, and Math

- Dyslexia can be discouraging and frustrating.
- Students are often working very hard, yet they are still not feeling successful.
- Feelings of not being understood or lacking support can lead to a sense of inferiority and failure shown through the emotions/situations listed below.
- Anxiety.
- Fear.
- Poor self-image.
- Depression.
- Social problems - [How Dyslexia Can Affect Kids Socially](#).
- Family problems/sibling rivalry.
- Share with other teachers/school staff how they can help.

Resources for Students

Seek out organizations that work with students with learning differences to help build community, foster pride, and spread knowledge and awareness.

- [Decoding Dyslexia Oklahoma](#)
- [The Neurodiversity Alliance](#)
- [National Center for Learning Disabilities](#)
- [OER Commons](#)



Self-advocacy is not easy, and it takes time to learn how to do it well. One way to self-advocate and share your feelings with teachers is by creating a document or video to share with your teacher. The I'm Determined Project has created a guide called *It Is All About Me! Understanding My IEP* to help you create your own document or video. Check it out at [I'm Determined](#).



Student Takeaways

- Dyslexia, dysgraphia, and dyscalculia can make learning and school difficult.
- Mistakes will happen, but you will continue to learn and grow.
- Continue to pursue activities you love and further develop your strengths.
- Know your accommodations and who your support system is at school.
- Learn what accommodations work for you and advocate for what you need to be successful.
- Even though dyslexia, dysgraphia, and dyscalculia are frustrating, let others know how they can support you. You are not alone in this journey, so reach out for help and support as needed.

Learning new things takes time and work, and learning differently does make it harder. Mistakes will happen; learn from them and keep moving forward.

Make sure to celebrate your successes. It is important to know and understand how you learn best. Know what your accommodations are and who your support system is at school so you can ask for help. This support system may be a teacher, a counselor, or even a coach.

****All art in the student section was created by an artist with dyslexia.**

Family & School Partnerships

Research consistently reinforces the importance of a strong family-school connection. Slade et al. (2018) found that parents who experienced a sense of *parent-school connectedness* reported the highest levels of satisfaction with the IEP process, regardless of a teacher's years of experience. Similarly, Sanderson & Goldman (2023) identified family-school partnership as a significant factor in overall satisfaction with a child's IEP.

Collaboration has a measurable impact on student outcomes. Studies such as Spann et al. (2003), Newmann & Sconzert (2000), and Barger et al. (2019) show that strong collaboration:

- Supports the generalization and maintenance of student learning and skills
- Positively influences attendance and homework completion
- Improves social, behavioral, and leadership outcomes

When parents and educators work together with shared understanding and open communication, students are more likely to receive support that truly meets their needs. Parents, if you think your child has dyslexia, dysgraphia, or dyscalculia, or has other academic struggles, you should talk with your child's classroom teacher. Information from the universal and dyslexia screeners (for older students, your child's report card and other benchmark reading scores), in addition to your own observations about your child's learning, can help begin conversations with teachers and other school staff members about your child's progress. Use the **Family Questionnaire** in the Appendix to support your knowledge of what to look for. To help build shared understanding and open communication between families and schools, we encourage families to use the **Family Advocacy Toolkit** to guide them through the process of advocating for support that meets the students' needs.

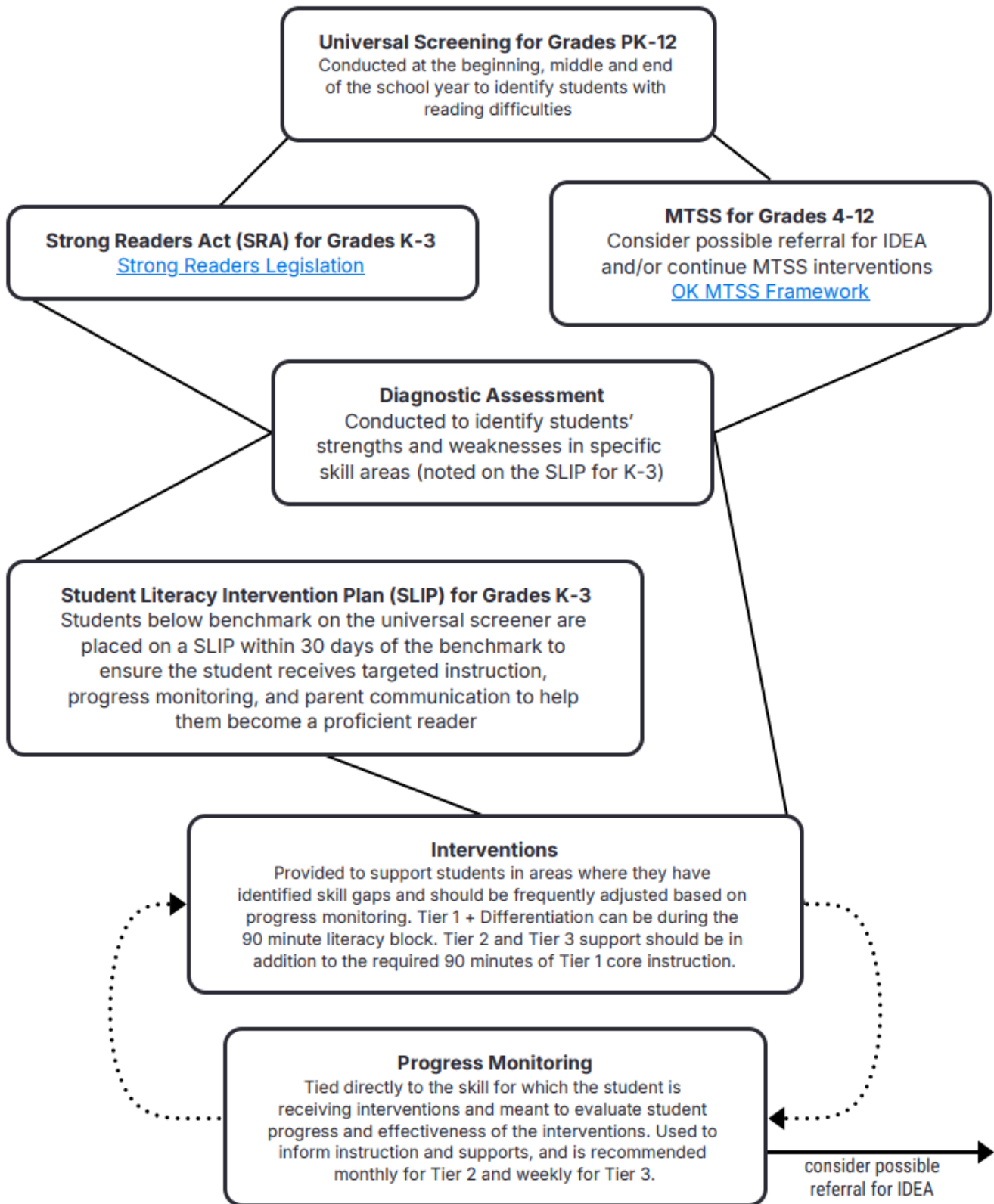
Family Advocacy Toolkit

The Family Advocacy Toolkit includes the MTSS Flowchart and the Special Education Flowchart. These Flowcharts represent the school processes to access support to meet the individualized needs of your student. The processes within these flowcharts may overlap depending on the degree of the student's needs.

The flowchart in the attachment below illustrates the Multi-Tiered System of Supports (MTSS) for literacy. It begins with universal screening for all students in grades PK–12 conducted at multiple points during the school year to identify reading difficulties. For grades K–3, students identified through screening enter the Strong Readers Act process, which includes a diagnostic assessment to determine specific skill needs. Students performing below benchmark are placed on a Student Literacy Intervention Plan (SLIP) within 30 days.

For grades 4–12, students may continue with MTSS interventions or be considered for referral under IDEA. All identified students receive targeted interventions aligned to their needs, with Tier 1 instruction occurring during a 90-minute literacy block and additional Tier 2 and Tier 3 supports provided beyond core instruction. Progress monitoring is conducted regularly to assess student growth and the effectiveness of interventions. Based on progress data, instruction is adjusted, and students may be considered for referral to special education services if needed.

Multi Tiered System of Supports (MTSS)



The next flowchart attached below outlines the Individuals with Disabilities Education Act (IDEA) process for identifying and providing special education services. The process begins when a parent or school has concerns about a child's progress and suspects a need for specialized instruction. An intervention process may begin, or a parent or school may request a formal evaluation.

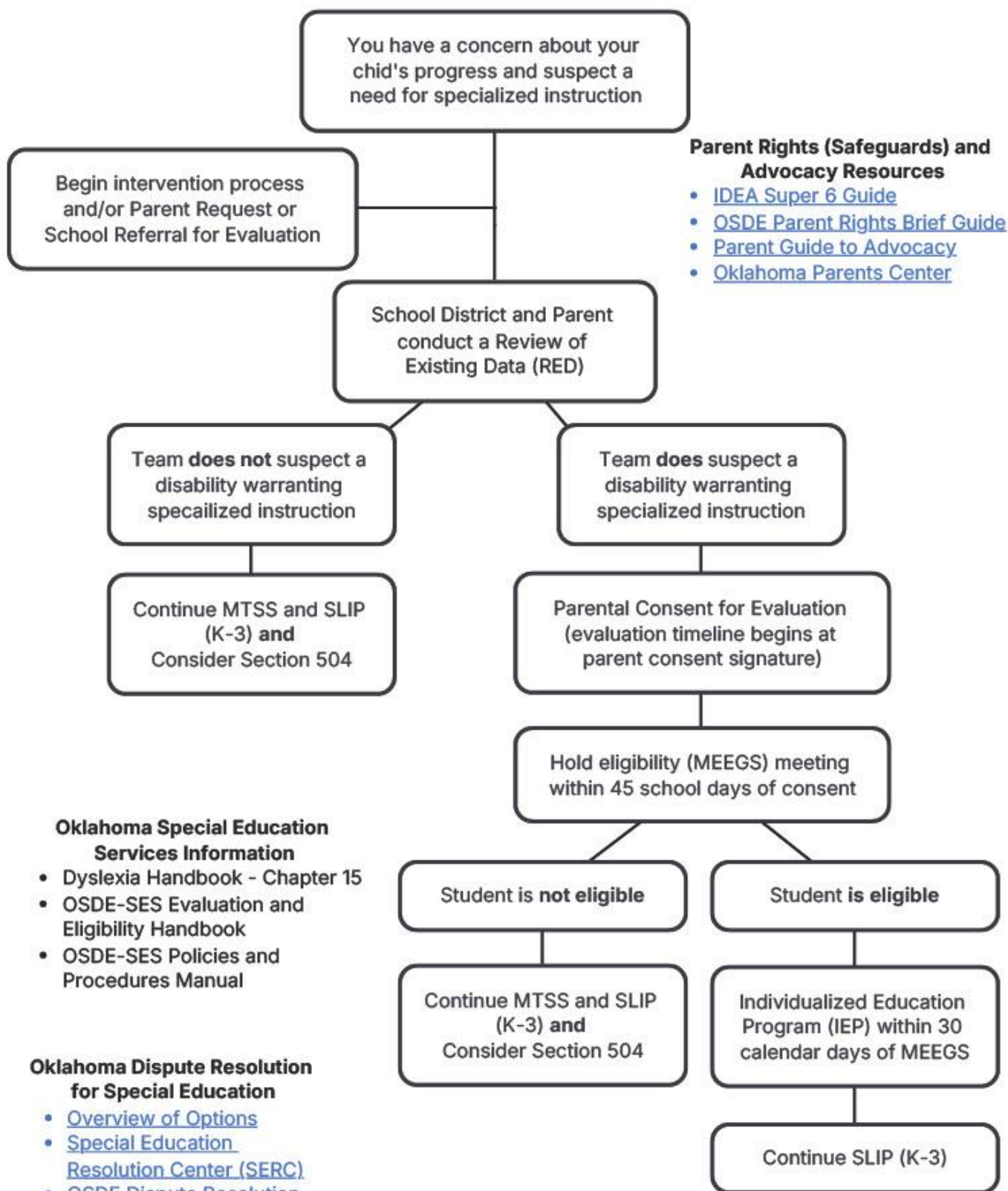
Next, the school district and parent conduct a Review of Existing Data (RED). Based on this review, the team determines whether a disability is suspected. If no disability is suspected, the student continues with general education supports, including MTSS interventions, a Student Literacy Intervention Plan (SLIP) for grades K–3, and consideration of Section 504 services.

If a disability is suspected, the parent provides consent for evaluation, and the evaluation timeline begins. Within 45 school days, the team holds an eligibility meeting (MEEGS). If the student is not eligible, general education supports continue. If the student is eligible, an Individualized Education Program (IEP) is developed within 30 calendar days, and services begin.

The chart also includes references to parent rights and advocacy resources, as well as Oklahoma-specific guidance documents and dispute resolution options for families.

Individuals with Disabilities Education Act (IDEA)

Process for Special Education





Educational Jargon

Parents, if you are presented with “educational jargon” or terminology you don’t understand, it is your right to have that terminology explained to you in “real-world terms” by the educational professionals with whom you are working. It is also important to remember that children with dyslexia, dysgraphia, and dyscalculia are very capable of succeeding in school and of achieving success in a wide variety of professions.

Special Considerations

As family-school teams move through the process outlined in the chart, there are several important points to keep in mind:

Process Through Multi-Tiered Systems of Support - Strong Readers Act- Grades K-3

If your child is in kindergarten through 3rd grade, ask your child’s classroom teacher if your child is on a **Student Literacy Intervention Plan (SLIP)** for reading support. This will tell you how the school is documenting concerns about your child’s reading, writing, or other skill areas. If your child has a SLIP or is receiving MTSS support, you can identify the area(s) of need your child is receiving support for, what intervention(s) they are receiving, and their response to those interventions. You can ask to see your child’s scores and data, as well as request more information about the interventions being used, at any time.

To prepare for and build your relationship with your child’s teacher(s):

- Review the grades and comments on your child’s report cards and progress reports.
- Review your child’s benchmark reading scores.
- Consider your child’s progress on proficiency indicators. (If you are not sure what literacy, written expression, and math proficiency milestones look like, review the [Oklahoma Family Guides](#).)
- Discuss any homework battles and the amount of time your child spends on homework.
- Complete the Family Questionnaire within the Appendix.

- Attend parent/teacher conferences and be ready to listen and share information.
- If you feel your concerns aren't addressed by the classroom teacher(s) as you'd like, talking with the school counselor or principal can be your next point of contact.
- When a student has been receiving support in the SLIP or MTSS process and is not making progress, additional testing and evaluation may be needed.

Process Through MTSS (Multi-Tiered Systems of Support) - Grades 4-12

MTSS extends beyond 3rd grade in schools across Oklahoma to ensure students continue learning and meeting expectations. In the MTSS process, schools can use grades, state assessments, benchmarks, and district assessments to identify students to receive additional supports. Students previously placed on an SLIP in K-3 may continue to receive services and accommodations through 5th grade under the Strong Readers Act.

If a student is not meeting grade-level targets or not making appropriate progress with interventions, a school review team should meet to review individual student records and progress to the extent possible. The team may consider a special education Review of Existing Data (RED) to determine whether additional assessments are needed to rule out a reading disability/dyslexia, writing/dysgraphia, and math/dyscalculia, as required by Child Find policies under the Individuals with Disabilities Education Act (IDEA).

Evaluation Requests

- Families and schools should consider a referral for IDEA-Special Education for a student who has needed long-term support within MTSS across many school years.
- Intervention through MTSS should not be used as a means to delay a comprehensive evaluation through IDEA.

Special Education Eligibility.

If a student is found ineligible for special education services, MTSS intervention should continue, and Family/School should consider a 504 plan for accommodations. See Chapter 15 for more information on special education eligibility.

Process Through IDEA - Special Education

Understanding the process of events and timelines is critical for parent engagement, and the Special Education Flow Chart provides a visual guide. Below highlights a few key points. Parents moving forward with the IDEA process are encouraged to review Chapter 15, Special Education Services, and the Special Education Policy and Procedures handbook for more detailed timelines and processes.

Evaluation Requests & School Response

- Schools may determine that an evaluation is not warranted if there is no suspicion of a disability requiring specially designed instruction. If the school refuses to evaluate, it must provide the parents with written notice explaining the decision and the reasons for it.

Interventions and Evaluation Timelines

- A school cannot delay an evaluation in order to complete interventions such as MTSS (multi-tiered systems of support). While intervention data is important, it can be collected during the evaluation process and reviewed by the team as part of the eligibility decision.

Role of Intervention Data in Eligibility

- A student may be identified as having a disability but still be found not eligible for special education if the team determines the student's needs are being effectively addressed through general education support (interventions, accommodations, etc.) and does not require specially designed instruction.

Parent Concerns and Requests

- Parents are not required to submit a request in writing to begin the evaluation process. However, providing a written request helps create a clear record and typically prompts a more timely, formal response from the school.

Maintaining Documentation

- It is important for parents to keep copies of communication with the school, including requests, responses, and any Written Notices that explain what the school is proposing or refusing and why.

Parent Training and Support

Families do not have to navigate the special education process alone. In Oklahoma, the **Oklahoma Parents Center (OPC)** serves as the state's federally funded Parent Training and Information Center, providing support to families of children with disabilities from birth through age 26. OPC offers no-cost services, including individualized assistance, training, and resources to help families understand their rights, prepare for meetings, and communicate effectively with schools.

Families can access support by:

- Contacting OPC (877-553-4332) to speak with a specialist
- Visiting their website (oklahomaparentscenter.org/) to explore resources, trainings, and upcoming events
- Participating in live or online trainings designed to build knowledge and advocacy skills
- Requesting individualized assistance to talk through specific concerns or next steps

Connecting with a parent training center early in the process can help families feel more confident, informed, and prepared to participate as meaningful partners in their child's education.

Families and Educators looking for support and resources for literacy and the needs of students with dyslexia may reach out to **Decoding Dyslexia OK (DD-OK)**, a partner with the Oklahoma State Department of Education, working to raise awareness for dyslexia and to empower families and educators through education to reach the needs of struggling readers with dyslexia. Decoding Dyslexia OK provides support to families and educators, offering guidance on evidence-based literacy support, building effective family/school partnerships, and advocating for student needs. DD-OK regularly shares evidence-based resources through events and professional development opportunities.

Families and Educators can access support by:

- Visiting [Decoding Dyslexia OK's website](#) to explore resources, upcoming events, and connect through email.
- Visiting Decoding Dyslexia OK's Facebook page to explore resources, upcoming events, and connect through Facebook Messenger.

When Disagreements Arise

Even with strong partnerships, disagreements can occur. When families and schools have differing perspectives about a student's needs or services, the Oklahoma State Department of Education and the **Special Education Resolution Center (SERC)** offer collaborative, no-cost dispute resolution services, such as facilitated IEP meetings and mediation, designed to support communication and help teams move forward with a shared focus on the student.

Families and schools can access these services by:

- Contacting SERC (918-270-1849) to discuss options and next steps
- Submitting a request for facilitation or mediation through SERC's online forms (okserc.org)

Early use of these supports can help resolve concerns more efficiently and maintain positive working relationships.

Retention

Retention is a discussion between parents and schools. It should be noted that retention as a means to address a student's academic skill deficits should not be the only factor considered. Retention can benefit students who have additional factors that impact their school experience. If a teacher(s) recommends retention for your student, parents have the right to appeal this decision through the district's appeal process. The school board's decision will be final, but parents/guardians can provide a written response of their disagreement to be placed in the student's permanent record ([§70-24-114.1](#) p.794). If a student is retained, the student's teachers should clearly outline any changes to instruction and ensure that repeating the grade will be used to close gaps in the student's deficits.

For more information regarding research on retention, please visit [Strong Readers for Schools](#) or [DecodingDyslexiaOK.org](#)

Buyer Beware

Unfortunately, parents in their search for support for their child have been taken advantage of by providers offering non-research-based treatments. Please know that under federal law (IDEA), if you suspect your child has a disability, your child's school must consider this concern, review data, and complete an educational evaluation at no cost to the child's family. Before seeking a private evaluation, work with your child's school and learn the limitations of the support that can be provided following a private evaluation.

For more information, see Chapter 15: Special Education Services.

Additionally, be forewarned that there are no "silver bullets" or cures for dyslexia, dysgraphia, or dyscalculia. In your research, you may come across programs that claim the ability to help every student with reading, writing, or math. Be wary of programs or techniques using approaches that have not been shown to be effective. These approaches include the following four examples.

- Things that don't include practice with the subject using a systematic, explicit, multisensory method (examples include colored lenses, overlays, vision therapy, spinal or cranial realignment therapy, crawling therapy, cognitive improvement therapy, midline crossover exercise therapy, and diet-related claims). While some therapies may address another co-existing issue, these therapies do not cure dyslexia.
- Tutoring chains, ad hoc tutors, nannies, or volunteers who are not properly trained to work with children who have specific instructional needs. People who effectively remediate reading, writing, or math difficulties use evidence-based practices in these areas and have had specific training and coaching in these evidence-based practices.
- Therapies that do not include the student's actual practice in reading, writing, or calculating. Therapies designed to improve eye coordination, near and far focus, depth perception, etc., may improve a student's use of their eyes while engaged in academic tasks, but they

are not a replacement for teaching the necessary components for reading, writing, and calculation. Remember, dyslexia is a deficit in the brain's phonological processing.

- Programs that guarantee an outcome. Read the fine print. Many programs guaranteeing results do not apply when the student has an identified disability, such as dyslexia, dysgraphia, or dyscalculia. If a disability is identified during the tutoring, a program's "guarantee" may be disregarded. It is very difficult to know what will work for each child and how long it will take for interventions to begin to close the gap. Programs that require very large sums of money up front before the therapy/program begins should be a red flag. Proceed with caution and skepticism if the claims seem too good to be true.

The ***Components of Structured Literacy Intervention Checklist*** included in the Appendix of this handbook can be used to guide decisions about appropriate intervention programs.

The International Dyslexia Association fact sheets on [Effective Reading Instruction for Students with Dyslexia](#) & [Evaluating Educational Professionals](#) can provide guidance on services for students.

Key Takeaways

1. Does Oklahoma recognize dyslexia, dysgraphia, and dyscalculia as disabilities?

Oklahoma recognizes dyslexia as a disability under the Individuals with Disabilities Education Act (IDEA) and Section 504 of the Rehabilitation Act. Specific Learning Disability is the umbrella term that includes conditions such as dyslexia, dysgraphia, dyscalculia, etc. The Oklahoma State Department of Education provides technical assistance and professional development on implementing IDEA, including supporting students with dyslexia.

2. Are dyslexia, dysgraphia, and dyscalculia rare occurrences?

Dr. Sally Shaywitz, co-director of the Yale Center for Dyslexia and Creativity, estimates that 80-90% of children who struggle with learning disorders have dyslexia; that is, as many as one in five students. The International Dyslexia Association (IDA) further notes that the most common type of reading, writing, and/or spelling disability is dyslexia. These percentages/numbers quickly dispel the myth that dyslexia is rare.

3. What can families and students do to support students with dyslexia, dysgraphia, and dyscalculia?

Families can work with their child's school to create positive partnerships ensuring open communication between the educators and the family. Students can practice self-advocacy skills by asking for help and support when they need it. More information is provided in other chapters on screening (Chapter 5), evaluation (Chapter 15), and supports for students and families located throughout this handbook.

"There is a vast amount of empirical research on literacy acquisition and reading disabilities that has been largely untapped by those working in schools.... Many educational professionals in general and special education can benefit tremendously from this information, not to mention developers of reading series and intervention materials" (Kilpatrick, 2015).

-Dr. David Kilpatrick

Chapter 2: Building a Supportive District

"When a flower does not bloom, you fix the environment in which it grows, not the flower."

-Alexander Den Heijer, 2015

Knowledge Self-Check

1. Are there requirements for dyslexia and dysgraphia training for all district staff?
2. How can superintendents, principals and other district staff support explicit instruction?
3. How can students be supported by a variety of educators and staff?

Building a Supportive District

Oklahoma's vision is for all children to reach their full potential and make positive contributions to our state by ensuring they acquire the critical skills needed to be college and career ready. The PROPEL Oklahoma Forward Comprehensive State Plan is grounded in the belief that all children have the right to be literate. To ensure this right, Oklahoma must provide learners with strong support from their family, school, and community from their earliest interactions with language, helping them grow into fully productive members of society (OSDE, 2024). Although PROPEL was developed with a focus on literacy, the focus on Purposeful Leadership, Research-Based Resources, Ongoing Educator Development, Practices that Work for All Students, Evidence-Based Decisions, and Lasting Family and Community Partnerships is foundational for all schools, including supporting the needs of students with dyslexia, dysgraphia, and dyscalculia. Building strong relationships among family, school, and community includes all parties understanding how to identify, provide interventions and support students with dyslexia, dysgraphia, and dyscalculia while supporting their individual educational and mental health needs. This chapter will highlight educators and staff who hold key positions in supporting these students.

The Need for a Variety of Engaged Educators

There is a clear need for all educators and related service providers to be prepared to meet the needs of students with dyslexia, dysgraphia, and dyscalculia, including

speech-language pathologists, school psychologists, psychometric specialists, school counselors, reading specialists, special education teachers, school administrators, librarians, and paraprofessionals. This preparation should be provided both at the pre-service and in-service levels. There needs to be a commitment on the part of university teacher preparation and educational credentialing programs to prepare individuals to directly address the needs of students in the classroom. Appropriate recognitions and interventions are the responsibility of all educators and support personnel in a school system, not just the classroom teacher, reading specialist, or special education teacher. It is also important that staff who interact with students within the school have an understanding of dyslexia, dysgraphia, and dyscalculia and how it impacts their educational needs.

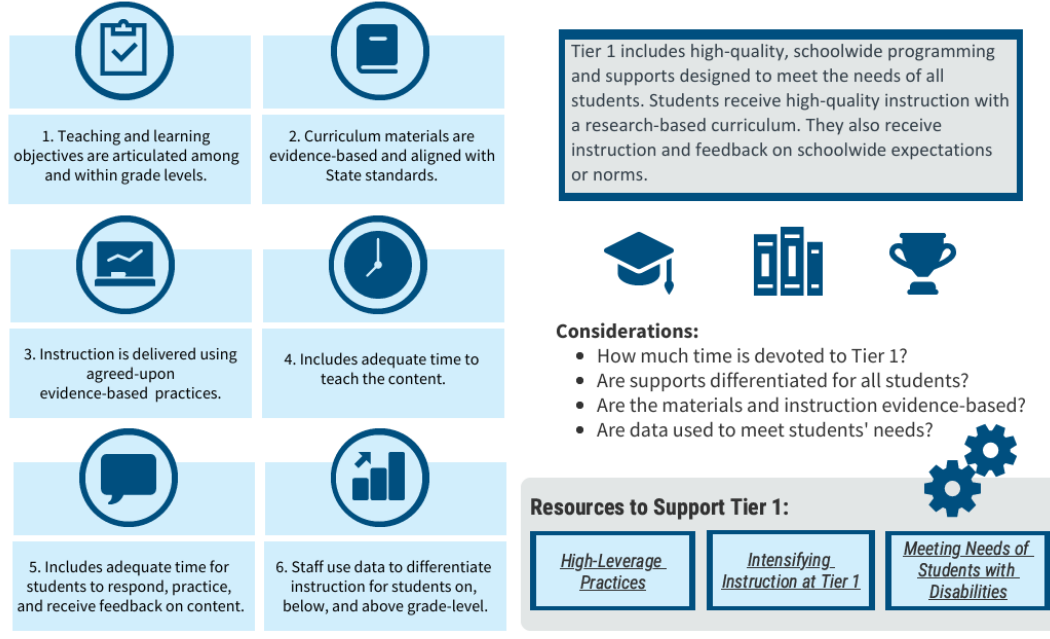
District Leadership

School leaders are increasingly responsible for ensuring students with learning disabilities are identified early and supported effectively, while simultaneously maintaining compliance with federal and state requirements and improving outcomes for all students. Dyslexia, dysgraphia, and dyscalculia can affect students in every school and often coexist with other learning or attention challenges, making them both a student-support issue and a systems leadership issue. For administrators, the essential question is not only “What are these disabilities?” but “What must our system do consistently and verifiably to ensure access, growth, and legal compliance?”

For administrators, the leadership implication is straightforward: students with dyslexia, dysgraphia, or dyscalculia do not “grow out of it” through time and exposure alone or “lack of effort”; they require structured, explicit instruction, and consistent access to supports. Administrators must ensure teachers understand that accommodations and assistive technology (AT) are not optional under IDEA or 504 laws and regulations. Administrators must recognize that schools are required to respond when a disability is suspected and to follow appropriate evaluation procedures and documentation expectations for Child Find.

Leadership can enhance awareness of dyslexia, dysreaphia, and dyscalculia while boosting the confidence of families, schools, and community stakeholders to effectively support student learning at school, at home, and in the community. Engaging with stakeholders through leadership builds relationships that support a child's learning and foster trust, providing support and resources to meet the individual needs of schools and districts, and creating a pathway for continuous improvement. Leadership may consider forming a stakeholder committee to review this handbook and identify success and areas needing improvement.

Essential Features of Tier 1 Core Programming



Center on
Multi-Tiered System of Supports

Visit mtss4success.org to learn more
Follow us @MTSSCenter

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[Essential Features of Tier 1 | MTSS Center](#)

In addition to special education, administrators need to understand the policy and procedures for the Strong Readers Act, Math Achievement and Proficiency Act, and the practices of MTSS. The Strong Readers Act, detailed in Chapter 5, and the Math Achievement and Proficiency Act, detailed in Chapter 12, require screening, parent notification, and interventions in the elementary years. Oklahoma is moving toward a full integration of the MTSS in K-12. Districts need to identify and implement MTSS practices to support educators in interventions, child find, laws, and communication with families.

Administrators influence outcomes for students with dyslexia, dysgraphia, and dyscalculia primarily through systems: schedules, training, intervention design, progress monitoring, and fidelity checks that ensure supports are delivered consistently across classrooms. Principals and superintendents must understand the core characteristics of these learning disabilities, the legal and policy requirements that drive screening and documentation in Oklahoma, and the evidence-based instructional practices that produce growth. When leadership aligns compliance with strong instruction, rather than treating them as separate tasks, schools are more likely to deliver both improved student achievement and reliable educational access.

Leadership Resources

Observing classroom instructions, especially in areas not related to your previous role, can be difficult. Learning alongside your teachers can help you prepare for observation in the classroom. The Teacher and Leader Effectiveness (TLE) evaluation systems in many Oklahoma schools can be used to inform instruction, create professional development opportunities, and promote the continuous improvement of the practice and art of teaching and leadership. The TLE's help to ensure the focus on reading, writing, and math has planning and preparation to support all students while maintaining alignment to district goals and procedures. Using the TLE can ensure those with dyslexia, dysgraphia, and dyscalculia are supported with protected accommodations in the classroom. Below are additional guides and checklists that can support leadership observations in the classroom.



Guide and Checklists for a School Leader's Walkthrough During Literacy Instruction in Grades 4-12
https://ies.ed.gov/sites/default/files/rel-southeast/document/2025/11/REL_2020018.pdf

School Leader's Literacy Walkthrough Grades K-5 https://www.thereadingleague.org/wp-content/uploads/2023/09/TRL-Administrators-Literacy-Walkthrough-Overview_Grades-K-5.pdf

Dropout and Graduation

Children with dyslexia are less likely to complete high school (Jimerson, Egeland, Sroufe, & Carlson, 2000) or to enroll in programs of higher education (Dougherty, 2003). The risk for dropout was highlighted in The National Center for Learning Disabilities State Snapshot 2023-24 that noted that 23% of Oklahoma Students with a Specific Learning Disability were marked as dropouts. Supporting a student to graduation is the responsibility of the entire district and community. Educators across all roles help create the conditions for students to feel seen, supported, and capable of success. When schools work together to build strong relationships, honor student strengths, and provide consistent encouragement, they can foster belonging and help more students stay engaged through graduation.

"Supportive relationships" refer to relationships students have with peers, teachers, and the broader school community that foster mutual feelings of belonging, respect, and value" (National Center for Learning Disabilities [NCLD], 2025)

-National Center for Learning Disabilities

Counselors and Transition Supports

Counselors play a vital role in supporting students with dyslexia, dysgraphia, and dyscalculia to navigate academic planning or being part of IEP or 504 teams. Counselors can address needs the social and emotional needs, advocate for proper accommodations, and collaborate with families and educators. One of the biggest supports is helping students learn about themselves, how to advocate for their needs, and plan for their future. In cases where a student may have fallen through the cracks counselors can make referrals to special education.

Graduation to Post Secondary Considerations

Literacy and math have a profound impact on students' long-term academic success. Students who struggle with reading or math in the upper grades face increasing challenges as academic texts become more complex, making it difficult for them to fully access science, history, and technical coursework. Over time, these barriers can contribute to lower graduation rates, as students become discouraged or fall behind their peers. Without effective intervention and targeted support, their readiness for postsecondary education or career training is significantly reduced, limiting future opportunities and outcomes. Students with reading difficulties will need additional support to navigate school, future education, or the workforce. Counselors can use absenteeism, behavior reports, and course completion to identify students at risk of dropping out. Counselors can use tools within ICAP and Plan Your Way to assist students in planning and understanding future planning. Transition skills are a requirement for students on an IEP but can be used for any students. Students also benefit from participating in the development of their IEPs and help keep the focus of the meeting on the individual needs of that student and encourage more inclusive and collaborative conversations ([Cadre, 2025](#)).

Graduation requirements may change each year, so high school counselors and advisors need to clearly and frequently communicate with students and parents. It is important not only for students, parents, and the educators who support them to understand graduation requirements, but also to ensure that students can plan confidently for their next steps in life. Identifying a student's future goals, such as pursuing a military career or participating in collegiate athletics, helps ensure they meet all required qualifications and documentation well in advance, setting them up for successful acceptance into their chosen postsecondary pathway.

Individual Career Academic Planning (ICAP) and Transition Planning

Students on the standard diploma pathway must participate in Individual Career Academic Planning (ICAP) annually as part of their graduation requirements. The ICAP process must begin in 9th grade, but many districts start in 6th grade or earlier to provide students more opportunities to discover careers that may be available to them and help them develop career-readiness skills, such as working and playing with others, making decisions, being a leader, solving problems, and more. An ICAP identifies a student's interests, skills, postsecondary and workforce goals, and experiences that lead to a meaningful plan. ICAPs for students with disabilities must take into account, and work in cooperation with, the student's IEP or Section 504 Plan (70 O.S. 1210.508-4). They must remain in separate documents, but parts of the ICAP will be integrated into the transition plan of the IEP. The ICAP and the IEP are complementary. An IEP team should take the information gathered during the ICAP process into account when developing the transition plan.

Plan Your Way

[Plan Your Way OK](#) (often referred to as (PYWOK) is a statewide transition website that helps students with disabilities and their support systems plan for a successful life after high school. It includes Oklahoma's Secondary Transition Framework, a comprehensive evidence-based roadmap that shows what students need as they move toward college, work, independent living, and community life. It includes guides, courses, videos, and resources for students, families, educators, IEP teams, and transition teams to ensure coordinated, high-quality evidence-based support. Plan Your Way OK is funded by the Rehabilitation Services Administration through the Pathways to Partnerships Disability Innovation Fund grant.

State Testing

State testing is part of a student's school career. While state assessments provide an overall reading score, universal screening can identify the specific or targeted area of need. Based on the results, secondary schools can provide a multi-tiered intervention class to meet the instructional needs of the students. Accommodations are based on the type of assessment and documentation of need on a student's IEP or 504. Accommodation should be based on need and use in the classroom. Students should not be prevented from using accommodation in the classroom because it is not available for a state test.

ACT/SAT

The ACT is given to all juniors in Oklahoma as part of graduation requirements. Students and families will work with counselors and special education staff to ensure accommodations are applied for, normally in the fall of junior year. Accommodations are based on student use at school and documentation on a student's IEP or 504.

Education Technology

Technology leadership must understand their role in supporting students with special needs. Students with dyslexia, dysgraphia, or dyscalculia on IEPs or 504 plans may have individual needs that go beyond standard district-issued devices or programs. The US Department of Education in 2024 released the [Myth and Fact Surrounding Assistive Technology Devices](#). A key emphasis in this document is that it is not enough to simply provide a device; districts have a responsibility to offer services that ensure meaningful access and engagement in education. While this document focuses on law under IDEA, the same principles can be applied to all students with disabilities.

Oklahoma AbleTech can help technology leaders learn how to evaluate their own capacity, demonstrate and select devices, and explore ways to fund special educational technology.

“AT devices and services can help improve outcomes for children, develop important skills and abilities, and prepare them for the workforce and life after high school. By providing children with disabilities with the tools they need to succeed, we can help break down barriers and create a more inclusive and equitable educational system for all.”

– US DOE Dear Colleague Letter, 2024

District Professional Development

Although the problems experienced by students with dyslexia may originate with neurobiological differences, the most effective interventions for these students, and for those who struggle with related reading and language problems, is skilled teaching. For that reason, it is critical that educators receive accurate and current information about evidence-based instructional strategies as well as the science of reading. Effective classroom instruction, informed by reliable research using evidence-based practices, can prevent or reduce the severity of reading and language problems (IDA, 2010, 2018).

“Teachers must be taught to identify the characteristics of high-quality research and to distinguish between research that is trustworthy and research that is weak and ill-informed” (Lyon 2002; Lyon 2016).

– Dr. Reid Lyon

State statute, Title 70 Section 6-194, requires all schools to provide annual dyslexia and dysgraphia awareness professional development (PD). The OSDE provides online modules and PD opportunities to assist districts with meeting this requirement. The dyslexia and dysgraphia awareness PD must include training in identifying the characteristics and effective classroom instruction to meet the needs of students with dyslexia and dysgraphia. The PD must also identify available dyslexia and dysgraphia resources for teachers, students, and parents. OSDE provides additional information and resources for dyscalculia to help educators and families.

“Both special and general educators must be prepared with evidence-based research about how children learn, why some children have difficulties and how the most effective instructional approaches can be identified and implemented” (Lyon 1997; Lyon 2002).

-Dr. Reid Lyon

Learning to teach reading, oral language, and written expression is a complex undertaking. The competence and expertise of teachers can be cultivated with training that emphasizes the study of reading development, language structure, individual patterns of language, and learning strengths and weaknesses. In addition, to learn to use instructional strategies effectively, teachers should have supervised practicum opportunities, especially if they are responsible for teaching students with dyslexia or dysgraphia.

Key Takeaways

1. Are there requirements for dyslexia and dysgraphia awareness training for all district staff?

Districts must provide annual dyslexia and dysgraphia awareness training for staff. The Oklahoma State Department of Education offers [online modules](#) that fulfill the requirements established by H.B. 1228 for Dyslexia and Dysgraphia Awareness Training. These modules provide foundational knowledge and can be completed at the participant's convenience.

2. How can superintendents, principals and other district staff support explicit instruction?

Administrators play a critical role in ensuring explicit instruction happens every day by organizing schedules, staffing, training, communication, and progress monitoring so that all students receive consistent explicit instruction.

3. How can students be supported by a variety of educators and staff?

Students are supported by a variety of educators and staff. Everyone who interacts with the student during a school day has the ability to impact a student's learning.

Chapter 3: Instructional Systems

Knowledge Self-Check

1. What is the purpose of Response to Intervention (RtI) and Multi-Tiered System of Supports (MTSS)?
2. Should Universal Design for Learning (UDL) be implemented only for classrooms that have students with dyslexia, dysgraphia, and dyscalculia?
3. How do school teams determine when an intervention should be continued, intensified, or discontinued?

Introduction to Response to Intervention (RtI) and Multi-Tiered System of Supports (MTSS)

A Multi-Tiered System of Supports (MTSS) is a comprehensive continuum of evidence-based systemic practices to support a rapid response to students' needs in academic and behavioral skills, with regular observation to facilitate data-based instructional decision making (20 U.S.C. § 7801(33)). Response to Intervention (RtI) is often used interchangeably with MTSS and refers to a Structured, tiered approach to providing instruction and interventions of increasing intensity based on student need.

MTSS and RtI are not programs or referral processes to special education but rather multi-level, proactive, prevention systems to maximize all student achievement. While the use of a multi-tiered system is not intended as a pathway to special education services, data gathered through MTSS may be used as part of a comprehensive evaluation for special education eligibility, so long as the MTSS/RtI process is not used to delay or deny the provision of a full and individual evaluation under the Individuals with Disabilities Education Act (IDEA).

OKMTSS Framework

DATA DRIVEN DECISIONS	SUSTAINABLE TEAMING	EVIDENCE-BASED PRACTICES
Measurement For Team - Based Decisions	Leadership Support	Tier 1 - Universal School-Wide Supports
Effective Screening Tools & Processes	Administrator Involvement	Academics: Core Curriculum With Standards For Rigor
Structure To Analyze Graphic Results	Allocation Of Resources	Behavioral/Mental Health: Prevent, Teach, Reinforce, Respond Practices To Support Classroom Climate & Culture
Identifying Needs & Selecting Interventions & Practices	Multidisciplinary Teams	
Multiple sources of data at Tier 1, Tier 2, Tier 3	Engagement of students, families, and community stakeholders	Tier 1 - Universal Class-Wide Supports
Decision rules for identifying needed supports	Selection of appropriate school personnel	Academics: High-Quality, Differentiated Instruction For Core Academics
Student grouping based on prioritized skill needs	Multi-directional communication	Behavioral/Mental Health: Prevent, Teach, Reinforce, Respond Practices to Support Classroom Climate & Culture
Evaluate Effectiveness of Interventions and Practices	Effective Meetings	
Data informs instructional changes	Agenda and action plan	Tier 2 Interventions
Progress monitoring for individual students	Team member roles and responsibilities	Standard protocol, evidence-based interventions for specific skill deficits
Progress monitoring at class, school, and district levels	MTSS Coaching Support	
Evaluate Fidelity of Implementation	Internal coaching capacity	Tier 3 Interventions
Fidelity checks for teaming structure	Access to external MTSS coaching expertise	Intensified evidence-based interventions matched to individual needs
Fidelity inventories for practices	Professional learning	Data-Based Individualization protocol

For more information on MTSS implementation, please see [OK Multi-Tiered System of Supports \(OKMTSS\)](#).

The MTSS/RtI instructional framework begins with high-quality core instruction (Tier 1) for all students, supported by universal screening measures to identify students who may be at risk for academic or behavioral difficulties. Research indicates that when Tier 1 instruction is effective, approximately 80% of students will meet expected learning outcomes. Following universal screening, school teams analyze data to identify students “at-risk” and require additional instruction support. Students who demonstrate a need for additional support may receive Tier 2 targeted interventions, typically provided in small groups and designed to address specific skill deficits. Approximately 15% of students may require targeted Tier 2 interventions. A smaller group of students, typically about 5%, may require Tier 3 interventions, which involve individualized instruction and increased instruction and increased intensity of support. Tier 2 and 3 interventions/supports may be provided in various group sizes based on the intensity of the intervention.

The primary goal of MTSS is to prevent the need for more intensive services and/or special education services through a process of early intervention, progress monitoring, and intensifying support. However, even with high-quality prevention and foundational skill instruction, some students will have needs requiring Tier 2 or Tier 3 supports. It is essential to match supports to needs through data-based decision making.



Students receiving special education services are not restricted from supports within a multi-tiered system. IEP teams should consider the full range of instructional supports when designing each student’s specially designed instruction (SDI). In some cases, direct services identified in the IEP may be provided by professionals with specific expertise, such as special educators, reading interventionists, or specialist trained in evidence-based instructional programs.

Instructional Tiers in a Multi-Tiered System of Supports/Response to Intervention (MTSS/RtI)

Tier 1 - Core Instruction for All Students

High-quality core instruction serves as the foundation of a preventative and responsive approach to student learning. Effective educators who use data to guide instructional decisions, implement systematic and cumulative instruction, and provide explicit instruction to support skill development. Core instruction (Tier 1) is provided to all students within the general education classroom and should incorporate evidenced-based instruction in reading, writing, and/or mathematics. Effective core instruction benefits all learners, and is particularly important for students with dyslexia, dysgraphia, and/or dyscalculia, who require explicit, structured instruction in foundation skills. Reading, writing, and math instruction are fundamental to a free and appropriate public education. High-quality core instruction begins in the classroom before the need for targeted instruction/intervention (Tier 2) or intensive intervention (Tier 3) are determined.

Core instruction continues in the classroom for all students even when additional intervention supports (Tier 2 or Tier 3) are provided.

Universal Design for Learning (UDL)

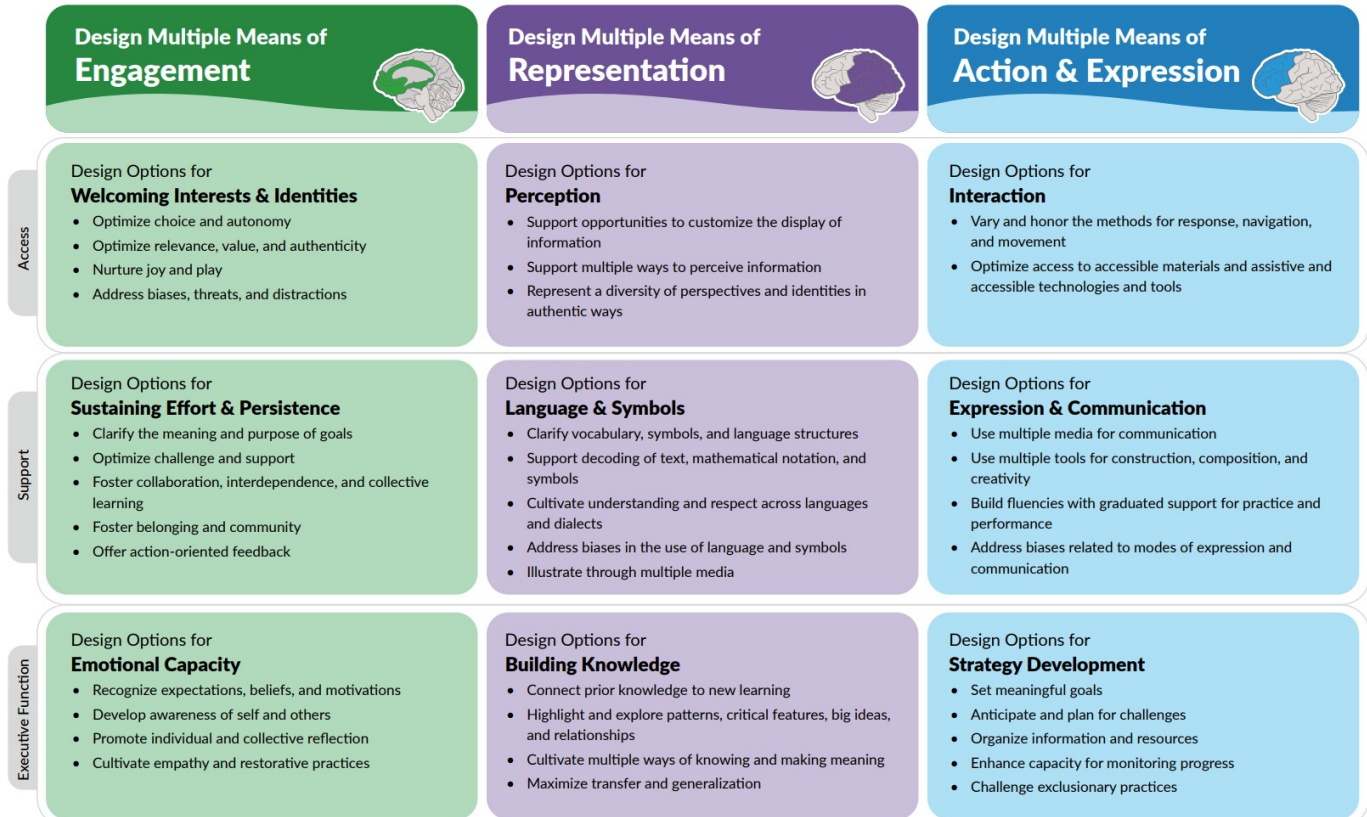
Within core instruction, educators can make use of UDL, a set of principles for curriculum development and instructional planning that gives all students equal opportunities to learn. UDL supports inclusive classroom practices and benefits all students, including those receiving intervention or special education services.

The three principles of UDL are providing:

1. Multiple means of engagement – motivating and sustaining student interest
2. Multiple means of representation – presenting information in different ways.
3. Multiple means of action and expression – allowing students multiple ways to demonstrate what they know.

CAST Universal Design for Learning Guidelines

The goal of UDL is **learner agency** that is purposeful & reflective, resourceful & authentic, strategic & action-oriented.



CAST | Until learning has no limits*

CAST UDL Guidelines™ | udlguidelines.cast.org | © CAST, Inc. 2024
Suggested Citation: CAST (2024). Universal Design for Learning Guidelines version 3.0 [graphic organizer]. Lynnfield, MA: Author.

The Center for Applied and Special Technology (CAST) has a wide range of free resources for teachers, some developed by teachers, to build curricula utilizing the principles of UDL.

UDL provides guidance and examples for a wide range of instructional approaches and formats to stimulate and motivate learning, including the use of technology and assistive technology. UDL also incorporates principles of student choice and self-regulation as part of the design to foster independence in learning. UDL principles can benefit students in the classroom during effective instruction as well as during intervention periods.

Differentiation in the Classroom

Classrooms should host a variety of reading, writing, and math instruction to offer appropriately differentiated instruction to all students addressing the following:

- Chapter 6 of this handbook specifies that Structured Literacy instruction is recommended for all students who fail to meet screening, benchmarks, or are observed by their teachers to struggle with reading and spelling. This instruction should be explicit, systematic, cumulative, and as individualized as possible within small-group settings.
- Each classroom teacher should utilize a broad array of reading, writing, and math instructional strategies (e.g., direct, explicit Structured Literacy instruction, small group, shared writing, and other evidence-based practices).
- There should be continuity and consistency of programs, language/terminology, and methods across grade levels and schools.
- Per state and federal statute, bilingual, English as a second language, and English language services programs should be provided.
- All classrooms should be engaged in culturally responsive instruction.
- Early learners and struggling students of all ages, may need much more support with one-on-one sessions or small groups.
- For some students, there are times they will need to hear and read more complex text to build academic vocabulary and increase their ability to use more advanced learning strategies.

Tier 2 - Targeted Intervention

In addition to high-quality classroom core instruction, some students may require targeted intervention that matches evidence-based intervention to an identified skill deficit. Targeted intervention, or Tier 2 intervention, differs from core classroom instruction, as it targets a narrower scope of instruction that is specifically matched to a skill deficit (e.g., targeting phonemic awareness). As with core instruction, targeted interventions should still utilize explicit instruction, appropriate sequencing of skills, and an educator with expertise in teaching the content. Dyslexia, dysgraphia, and dyscalculia exist on a continuum with varied skill deficits that should be targeted within homogenous skill intervention groups and with instructional delivery matched to student needs.

Intervention decisions and implementation should be documented consistently. Documentation should include:

- The specific skill deficit being addressed
- The evidence-based intervention used
- Frequency and duration of the intervention
- Group size and instructional setting
- Progress monitoring data
- Evidence of implementation fidelity

Tier 3 - Intensive Intervention

In addition to high-quality classroom core instruction, some students may require an intervention that would provide more intensity at an appropriate pacing to master the skills required for proficient reading, writing, and calculation. As with core instruction and Tier 2, intensive interventions should still utilize explicit instruction, appropriate sequencing of skills, and an educator with expertise in teaching the content. The difference in Tier 3 intervention is the individualized approach to designing intervention lessons, and Tier 3 is an increase in intensity from Tier 2. Dimensions of intensity and intensifying instruction are discussed more in depth below.

Intensification

To be effective, instruction and intervention at every tiered support level (Tier 1, Tier 2, and Tier 3) must meet the following criteria.

- An evidence-based intervention that is effective for students who have dyslexia, dysgraphia, dyscalculia, or other learning difficulties.
- Implemented by a trained or certified instructor (a professional within the system with expertise in the intervention).
- Provided and taught with fidelity.
- Sufficiently intensive (see the Dimensions of Intensification list below) to accomplish the instructional goal(s).
- Include frequent progress monitoring of the targeted skill.

Implementation fidelity refers to the degree to which an instructional program, or intervention, is implemented as designed, including the procedures, instructional practices, and schedule required for the intervention to be effective. Monitoring fidelity helps ensure that student progress can be accurately linked to the instruction being provided and

supports data-based decision making.

The [National Center on Intensive Intervention fidelity tools](#) identify several key components that should be considered when evaluating implementation fidelity:

1. **Student Engagement** – The extent to which students are actively participating in the intervention activities and instruction.
2. **Adherence** – The degree to which the instructor follows the instructional procedures and steps outlined in the intervention program.
3. **Program Specificity** – The intervention is implemented using the specific instructional routines, materials, and sequence identified by the program or intervention design.
4. **Quality of Delivery** – The instructor delivers the intervention using effective instructional practices, including clear explanations, appropriate pacing, and corrective feedback.
5. **Exposure/Duration** – The intervention is delivered for the intended amount of time, including the recommended frequency and duration of sessions.

Progress monitoring is the process of assessing a student's growth in the targeted skill (student response to instruction), analyzing that growth in relation to an ambitious or realistic rate of improvement (ROI) and making instructional decisions based on the student's growth. Instructional decisions following progress monitoring include the following list.

- Continuing the intervention: the student is making sufficient progress toward a reasonable or ambitious instructional goal.
- Intensifying the intervention: the student is not making sufficient progress toward a reasonable or ambitious goal, so the intervention must be strengthened to support improved learning.
- Discontinuing the intervention: the student has met the reasonable and ambitious goal, learning gaps have closed, and the student is demonstrating sufficient skill to maintain progress with a reduction of support.

The intervention decision-making process is individualized based on student-level data. If a student's progress monitoring data indicates they are not making sufficient progress with the current intervention implemented with fidelity, then the intervention should be intensified.

If intensification is necessary, seven dimensions should be considered. These factors are referred to as Taxonomy of Intervention Intensity. More information can be found at [NCII Intensification Strategy Checklist](#).

1. **Strength** - Evidence indicates the selected intervention is expected to lead to improved outcomes.
2. **Dosage** - The group size, duration, frequency, and structure of the intervention provide sufficient opportunities for progress.
3. **Alignment** - The intervention is based on the identified student need.
4. **Attention to Transfer** - The intervention assists the student in generalizing the learned skill to their core education or to other tasks.
5. **Comprehensiveness** - The intervention uses explicit instruction.
6. **Behavioral/Academic Support** - The student has opportunities to engage fully in the intervention.
7. **Individualization** - The intervention considers a data-based process (progress monitoring) to adjust as necessary according to the instructor's expertise.

Anyone of these dimensions can intensify the intervention, and not all dimensions must be intensified at the same time. Consideration for initial and subsequent interventions should be based on the student's identified needs and progress monitoring.

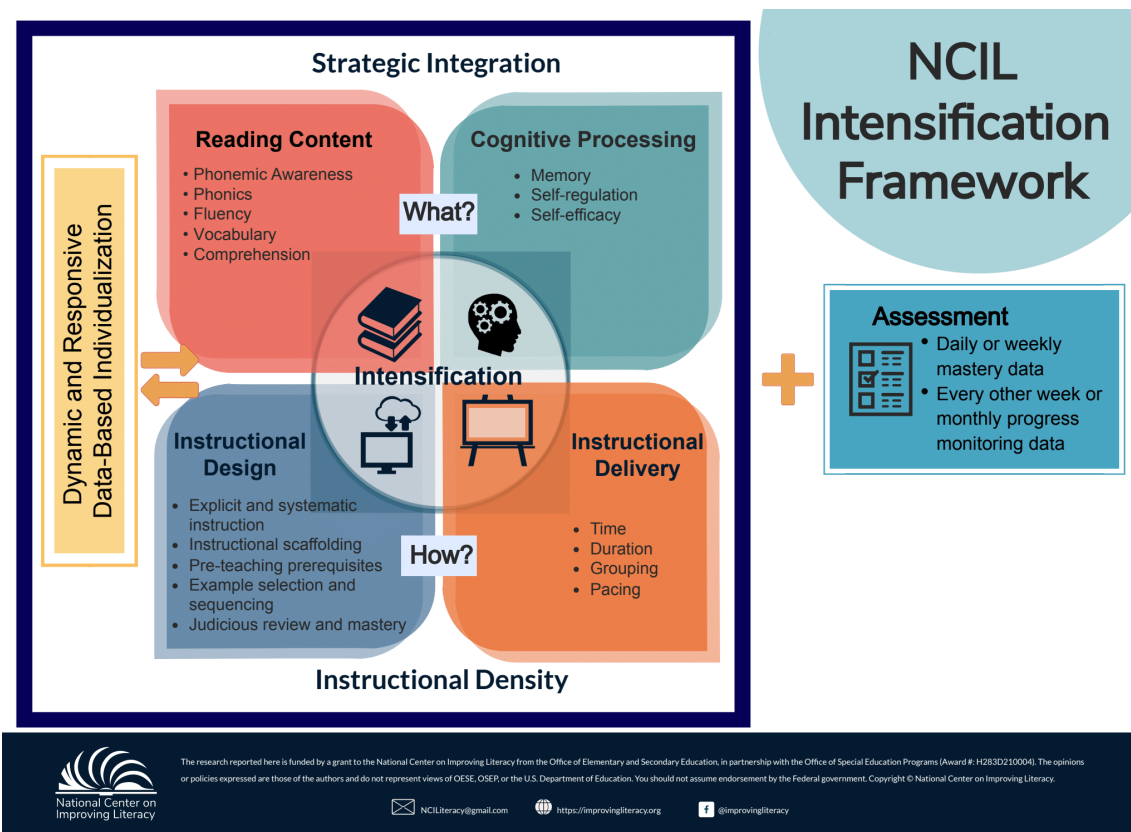


Image: The NCIL Intensification Framework

The National Center on Improving Literacy (NCIL) has further conceptualized on this Taxonomy of Intervention Intensity in its Intensification Framework shown in the image titled “The NCIL Intensification Framework.”

As you can see, NCIL recommends considering Instructional Design (Strength, Attention to Transfer, and Comprehensiveness); Instructional Delivery (Dosage); Reading Content (Alignment); and Cognitive Processing (Behavioral/Academic Support). The NCIL Intensification Framework also explicitly acknowledges the importance of Assessment (Individualization) in instructional decision-making.

Discontinuing Intervention

School intervention teams may consider reducing or discontinuing an intervention when a student has met the intervention goal and demonstrated consistent progress. Typically, teams look for at least three consecutive data points indicating that the student has reached the expected rate of improvement and can maintain progress with reduced support. These data points are used as evidence of mastery and sufficient skill to maintain progress with a reduction of intensity. When reducing support, teams may consider gradually decreasing intervention intensity for students receiving Tier 3 levels of support (e.g., moving from Tier 3 to Tier 2 rather than from Tier 3 to Tier 1). After intervention intensity is reduced, continued progress

monitoring is recommended to ensure the student maintains the newly acquired skills.



The [IRIS Center Peabody College Vanderbilt University RTI Module](#) emphasizes the need to establish criteria students must meet at the end of an intervention before discontinuing the intervention.

Basics of Accommodations

Accommodations provide students the opportunity to fully participate in the school environment, and they allow students to demonstrate their knowledge. The OSDE defines accommodations as changes in the curriculum, instruction, or testing format or procedures that enable students with disabilities to participate in the general education curriculum.

Accommodations should be considered to include assistive technology and changes in presentation, response, timing, scheduling, and settings that do not fundamentally alter the requirements. Accommodations do not invalidate assessment results.

Accommodations must be considered for students on IEPs and 504 Plans, but they should also be considered for students with dyslexia and students struggling to read with a Student Literacy Intervention Plan (SLIP). Accommodations are to be employed during instruction (learning process), testing, and extracurricular activities.

Accommodations do not replace the need for evidence-based instruction. They enable students with disabilities to demonstrate knowledge, skills, and abilities without lowering their learning or performance expectations and without changing the complexity of the target skills being taught or the test construct being measured. Accommodations may need to remain with a student after intervention for dyslexia, dysgraphia, or dyscalculia. Students' reading ability may continue to be a hindrance to demonstrating their knowledge. The [OSDE Accommodations Guide](#) provides a framework for the selection and use of accommodations for students.

Accommodations vs. Modifications

Accommodations and modifications provide students with different educational opportunities. The chart below is a comparison of how accommodations and modifications may affect a student's education. Modifications should be limited.

Accommodations	Modifications
• Do NOT change the curriculum. • Changes how a student interacts with and learns from the curriculum. • Can include changes to: presentation, response, setting, and/or schedule. • Can reduce assignment overload. • Are NOT a substitute for providing effective remediation. • Include Assistive Technology. • Can build independence and strengths to be used throughout their lifespan, even with the completion of effective remediation. • Remove the stigma, advocate for their use, and teach students to advocate using them.	• Change the curriculum by offering different or less content than regular classroom experience • Change the expectations for what the student will be learning • Build larger gaps between student and their peers • Reduce experience with grade- level content • Modifications should be limited to students who take an alternate assessment

Accommodations and Testing

Accommodations can also be accessed during state-level testing. Oklahoma state law requires students to participate in the [Oklahoma School Testing Program](#) (OSTP). OSDE updates the OSTP Accommodations Manual yearly, and school staff should review the Accommodations Manual for compliance with Standard and Non-Standard accommodations. A student should use accommodations for testing in the classroom to build their comfort and efficiency with the accommodations. Accommodations may be limited on a specific state test, but accommodations should not be removed from a student's daily use during the school year. The removal of an accommodation due to a test restriction limits the student's independence in the classroom.

As students enter high school, ACT/SAT accommodations will need to be applied for and granted approval. The ACT/SAT testing companies retain ultimate authority to determine whether a student will receive any testing accommodations and what accommodations the student will be permitted to use. One factor for approving accommodations that is reviewed is the uses of accommodation during the school career.

Common Classroom Accommodations

Below are some examples of accommodations grouped by task for students with dyslexia, dysgraphia, and/or dyscalculia. Please remember, accommodations should be aligned with the student's disability.

- **Reading:** May include providing the student access to audiobooks and text-to-speech software, the teacher not calling on the student with dyslexia to participate in oral reading (unless the student volunteers) and allowing the student extra time to complete reading assignments.
- **Mathematics:** May include the student's use of a calculator or graph paper, access to written or digital copies of notes/formulas used in class, and the teacher breaking down assignments into smaller steps.
- **Spelling:** May include the teacher reducing the number of items on spelling lists, providing access to spell-check and word prediction software, and not deducting points for spelling errors.
- **Writing:** May include providing a student with a scribe, providing access to speech-to-text software, offering written or digital copies of notes, minimizing the need to copy from the board, and providing graphic organizers.
- **Testing:** May include providing extra time to students with dyslexia, allowing students to give answers orally, and providing students a quiet testing area.
- **Science/Social Studies:** Access to written or digital copies of notes, extended time on assignments/projects, and access to the class textbook in an audio format.
- **Homework:** Assignments may include reducing homework, allowing students to dictate their answers, allowing typewritten work, and allowing extended time to complete assignments.

Accessible Educational Materials (AEM)

Students who are unable to use traditional print materials to access their classroom curriculum may need specialized formats, such as large print, audio recordings, or digital text. Accessible Educational Materials (or AEM) are meant to provide to students as needed. Additional resources on Modifications and Accommodations can be found at Strong Readers Act ([Strong Readers Act](#)), [Learning Ally](#), or [Decoding Dyslexia](#).

Image: People with Disabilities Can Do the Same



Assistive Technology (AT)

Assistive Technology (AT) is any device giving a student the ability to increase, maintain, or improve the capabilities in the classroom to help them access learning and demonstrate their knowledge. AT must be considered for all students on an IEP or 504 Plan, and AT should be considered necessary for students on a Student Literacy Intervention Plan (SLIP) or for students with significant struggles in the classroom.

IDEA 2004 requires IEP teams to consider the technology needs of all children with disabilities, “to maximize accessibility for children with disabilities” (20 U.S.C. 1414(d)(3)(B)(v) & (20 U.S.C. 1400(c)(5)(H)). Students on a 504 Plan of the Rehabilitation Act are provided accommodations, including AT as part of related aids and services, to ensure a student is receiving an appropriate education (34 C.F.R. Part 104).

IEP teams must decide on AT devices and services based on a student’s individual needs during the development, review, and revision of the IEPs, 504 Plan, and SLIP, or when a team member deems it necessary due to changes in the student’s needs.

AT is a bridge between a students' areas of weakness and their abilities and skills. AT can assist students in a variety of ways including the following:

- Enabling access to material at their grade through the use of text-to-speech software and audiobooks.
- Enabling students to express their thoughts through the use of dictation, (e.g., speech-to- text software), keyboards, and word processing or word prediction software.
- Correcting spelling and grammar through electronic spelling and grammar checkers.
- Enabling students to create notes through the use of recording devices.

AT is utilized as a tool to compensate for the impact of dyslexia, dysgraphia, or dyscalculia on learning and demonstrating knowledge.

AT is not meant to be a replacement for direct instruction in the skills needed to alleviate reading, writing, math, and other deficits, nor is it intended to be used as a substitute for evidence-based remedial instruction. Rather, AT is designed to be used when the goal is to attain information or demonstrate knowledge a student is unable to attain without such support.

Use of Assistive Technology

Accommodations for students with dyslexia, dysgraphia, or dyscalculia can include Assistive Technology (AT). AT allows a student to overcome the weaknesses dyslexia, dysgraphia, or dyscalculia may highlight, and AT provides them with time-saving ways of demonstrating their knowledge. With the expansion of devices in our classrooms, AT is giving students independence.

“For people without disabilities, technology makes things easier. For people with disabilities, technology makes things possible”

- IBM training manual, 1991

Considerations for Effective AT Implementation

AT evaluations may be conducted to assist in determining a student's AT needs in the student's environment by teachers or a specialist familiar with available technologies. Students may also need AT to fully and effectively participate in elective courses or extracurricular activities. Students who struggle to read and wish to participate in their school's debate team or drama production may need print material provided to them in an accessible format. Students with the ability to tell stories wanting to participate in yearbook or school newspaper may need grammar and spellcheck supports.

[Quality Indicators for Assistive Technology](#) (QIAT), a Comprehensive Guide to AT Services, includes a comprehensive list of criteria for review when considering the appropriateness of AT for individual students. Training is critical to AT implementation as, “software cannot be fully effective unless the children who need it have adequate time and support to use it well” (Wise & Raskind, 2007). The [National Center on Improving Literacy](#) and [IDA's Dyslexia In the Classroom](#) provide training to schools on AT evaluation processes, such as QIAT, [NCLD](#) (National Center for Learning Disabilities), and [Knowing My IEP](#).



Oklahoma AbleTech's mission is to improve the lives of all Oklahomans by providing AT devices and services, financing opportunities, digital accessibility services, advocacy, and education. Some Oklahoma AbleTech programs and projects:

- Device short-term loans.
- Device demonstrations.
- Device reutilization.
- Financial loans.
- Digital accessibility.
- Training and outreach.

Oklahoma AbleTech is a free resource for all schools and families.

Key Takeaways

1. What is the purpose of Response to Intervention (RtI) and Multi-Tiered Systems of Support (MTSS)?

To provide early, data-based instructional supports that help students succeed and reduce the need for more intensive interventions.

2. Should Universal Design for Learning (UDL) be implemented only for classrooms where there are students with dyslexia, dysgraphia, and dyscalculia?

No. UDL is a set of principles for curriculum development and instructional planning that gives all students equal opportunities to learn, and UDL should be implemented within the core instruction of all classrooms.

3. How do school teams determine when an intervention should be continued, intensified, or discontinued?

School teams should consider reducing intervention intensity (e.g., moving from Tier 3 to Tier 2) once a student has reached an intervention goal and demonstrates sufficient skill to maintain progress with a reduction of intensity. It is generally recommended the intervention continue until a student has three consecutive progress monitoring data points at the same rate of improvement needed to reach their goal.

Chapter 4: Defining Dyslexia



“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” (Wolf, 2015).

- Dr. Maryanne Wolf

Knowledge Self-Check

1. Is dyslexia a general “catch all” term for all reading difficulties?
2. What are the differences between the types of dyslexia recognition (e.g., characteristics of dyslexia, identification of a specific learning disability, diagnosis)?

Dyslexia Definition

*“Dyslexia is a **specific learning disability** characterized by **difficulties in word reading and/or spelling** that involve **accuracy, speed, or both** and vary depending on the **orthography**. These difficulties occur along a **continuum of severity** and **persist even with instruction that is effective for the individual’s peers**. The causes of dyslexia are complex and involve **combinations of genetic, neurobiological, and environmental influences that interact throughout development**. Underlying difficulties with **phonological and morphological processing** are **common but not universal**, and **early oral language weaknesses** often foreshadow literacy challenges. **Secondary consequences** include **reading comprehension** problems and reduced reading and writing experience that can impede growth in language, knowledge, **written expression**, and **overall academic achievement**. **Psychological well-being** and **employment opportunities** also may be affected. Although identification and targeted instruction are important at any age, language and literacy support before and during the early years of education is particularly effective.”*

The International Dyslexia Association (IDA) shared the **2025 Dyslexia Definition** in October, 2025. It was developed through a rigorous, collaborative process to reflect the latest research and the lived experiences of individuals with dyslexia. To explore the definition in greater depth, including the scientific and community-based foundations that informed its development, visit the 2025 [IDA Definition Explanation](#) and view the [IDA Definition Presentation](#).

Understanding IDA's 2025 Updated Definition of Dyslexia

Middle Tennessee Center for the Study and Treatment of Dyslexia shared a brief document designed to help families, educators, and individuals with dyslexia understand the key points of the revised 2025 IDA definition. The Infographic highlights the Aspects of the definition that were expanded, including presentation across writing systems, causes, why early indicators matter, and what this updated definition helps us do moving forward. [Odegard IDA Revised Definition Infographic.pdf](#)

Characteristics of Dyslexia

Dyslexia is a learning difference characterized by persistent challenges in specific areas that interfere with learning. Below are detailed characteristics categorized for clarity, as outlined in the [IDA Dyslexia Handbook, What Every Family Should Know 2019](#):

Oral Language:

- Late learning to talk.
- Difficulty pronouncing words.
- Challenges in acquiring vocabulary or using age-appropriate grammar.
- Struggles with following directions.
- Confusion with terms like before/after and right/left.
- Difficulty learning the alphabet, nursery rhymes, or songs.
- Issues understanding concepts and relationships.
- Problems with word retrieval or naming.

Reading:

- Difficulty learning to read.
- Challenges identifying or generating rhyming words or counting syllables.
- Struggles with phonemic awareness and phonological processing.
- Difficulty learning letter sounds (phonics).
- Problems remembering letter names and shapes or naming letters

rapidly.

- Transposing letters when reading or spelling.
- Misreading or omitting common short words.
- Stumbling through longer words.
- Poor reading comprehension due to inaccurate word reading.
- Slow and laborious oral reading.

Written Language:

- Difficulty expressing ideas on paper.
- Frequent spelling mistakes.
- Inconsistent performance in spelling tests versus daily work.
- Challenges with proofreading.

Other Common Symptoms:

- Difficulty with rapid naming of colors, objects, and letters.
- Weak memory for lists, directions, or facts.
- Needing repeated exposure to concepts to learn them.
- Easily distracted by visual or auditory stimuli.
- Inconsistent school performance and downward trends in achievement tests.
- Perceptions of laziness or lack of effort by teachers.
- Family history of similar challenges.

These characteristics provide a comprehensive understanding of dyslexia, aiding in its identification and support strategies (IDA Dyslexia Handbook, 2019).

What Characteristics of Dyslexia Look Like by Age and Grade

PRESCHOOL • History of ear infections. • Speech-language delays. • Word retrieval. • Mispronunciations. • Vocabulary. • Directionality. • Left/right. • Up/down. • Before/after. • Pre-literacy skills • Auditory memory for rhymes/chants. • Letters in name. • Rote information. • Remembering/following directions. • Recognizing/producing rhymes.	KINDERGARTEN - 1ST GRADE • Difficulty. • Remembering names/shapes and/or sounds of letters. • Generating rhyming words. • Reading common, one-syllable, sight words. • With phonemic awareness tasks. • Spelling errors reflecting difficulty with sound/symbol associations. • Reversals (<i>past</i>→<i>pats</i>). • Omissions (<i>trip</i>→<i>tip</i>). • Additions (<i>sip</i>→<i>slip</i>). • Substitutions (<i>rip</i>→<i>rib</i>). • Transpositions (<i>stop</i>→<i>pots</i>). • Frustration in school and/or complains about reading.
2ND - 3RD GRADE • Difficulty. • Acquiring new vocabulary or using age- appropriate grammar. • Putting ideas on paper. • Decoding single words in isolation. • Reading multi-syllabic words and phonetically irregular words. • Word retrieval difficulty in class discussions. • Over-reliant on context to derive meaning from printed words. • Confusing visually similar letters (e.g., <i>b/d</i>, <i>p/q</i>, <i>w/m</i>, <i>h/n</i>, and <i>f/t</i>). • Confusing auditory similar letters (e.g., <i>d/t</i>, <i>b/p</i>, <i>f/v</i>, and <i>s/z</i>). • Phonetically inconsistent spelling skills. • Slower-paced/effortful reading; lacks inflection; tendencies to read through punctuation.	4TH - 12TH GRADE • Significant difficulty reading and spelling multi-syllabic words often omitting entire syllables as well as making single sound errors. • 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.

Recognizing Dyslexia

Educators and providers use several terms when referring to dyslexia. The chart below indicates how these terms are related to who can identify them, what services may be provided to the student, and the potential tools available for identification.

What	How	Who	Services
Risk for characteristics of dyslexia.	OSDE-approved screening assessments.	Certified educator.	General education and intervention supports.
Identification of a Specific Learning Disability (SLD) in reading (dyslexia).	Comprehensive evaluation provided by a qualified examiner and aligned to the IDEA.	Certified school psychometrist, certified school psychologist, or speech language pathologist (cannot administer an IQ assessment).	Special education services provided through an Individualized Education Program (IEP).
Diagnosis of dyslexia	Comprehensive evaluation provided by a licensed examiner and aligned to the DSM-V.	Clinical/neurological psychologist or a speech language pathologist (cannot administer an IQ assessment).	Clinical and/or medical practice.

For a more complete explanation, please see Chapter 15: Special Education Services.

In the chart above, **risk** and **identification** are terms used within the school setting. A student is not required to have an outside **diagnosis** for schools to use the term “dyslexia” (see Chapter 1: #SayDyslexia in Schools), to provide intervention supports, or to evaluate for special education services. Additionally, schools do not have the capacity or obligation to “diagnose” dyslexia; rather, they will determine if the student meets key eligibility indicators to be identified as a student with a specific learning disability.

Outside the school setting, a parent may seek assessments from a Certified Academic Language Therapist (CALT), Certified Academic Language Practitioner (CALP), International Dyslexia Association- (IDA) certified dyslexia therapist (CERI), or Certified Dyslexia Therapist who has specialized training in dyslexia. These specialists may provide support for students with dyslexia, conduct informal diagnostic assessments, or provide targeted interventions. Parents should first seek assessments and services from within their child’s school. Assessments from outside providers, including the specialists mentioned in this paragraph, may not be sufficient for determining eligibility for an Individualized Education Program (IEP) or a Section 504 Plan.

Key Takeaways

1. Is dyslexia a general “catch all” term for all reading difficulties?

Dyslexia is a specific term for a learning disability that is neurobiological in origin and is characterized by difficulties with accurate and/or fluent word recognition and poor spelling and decoding abilities.

2. What are the differences between the types of dyslexia recognition (characteristics of dyslexia, diagnosis, and identification of a specific learning disability)?

Specific providers can assess for dyslexia in different contexts. Schools do not look to diagnose students, but schools can look for characteristics of dyslexia or key eligibility indicators for a specific learning disability (including dyslexia). A clinical provider can diagnose disabilities aligned to the DSM-V.

Chapter 5: Screening for Risk of Characteristics of Dyslexia

“The longer screening is delayed, however, the more entrenched reading problems become and the more likely they are to have adverse effects on cognitive and language development” (Rathvon, 2004).

– Dr. Natalie Rathvon

Knowledge Self-Check

1. Will students catch up with the rest of the class if they are given enough time to read?
2. Can students be identified with characteristics of dyslexia or be diagnosed with dyslexia before 3rd grade?
3. Is a single test available to determine if an individual has dyslexia?
4. Will third-grade students identified with characteristics of dyslexia be retained?

“Implementing effective reading programs early, even in preschool and kindergarten, offers the potential to reduce and perhaps even close the achievement gap between dyslexic and typical readers and bring their trajectories closer over time” (Ferrer et al., 2025).

- Achievement Gap in Reading is Present as Early as First Grade and Persists through Adolescence, (Ferrer et al., 2025)

Research supports the need for early identification and assessment (Birsh and Carreker, 2018; Nevills & Wolfe, 2009). The rapid growth of the brain and its responsiveness to instruction in the primary years make the time from birth to age eight a critical period for literacy development (Nevills & Wolfe, 2009). Additionally, because characteristics associated with reading difficulties are connected to spoken language, young children can be screened in the areas of phonemic awareness and phonological skills ([Sousa, 2005](#)). Read on for more information regarding early screening for reading difficulties and for characteristics of dyslexia within Oklahoma.

Universal Screening

Early identification of students at risk for reading difficulties is critical in developing an appropriate instructional plan. “The best solution to the problem of reading failure is to allocate resources for early identification and prevention,” ([Torgesen, 2014](#)). The early identification of students with dyslexia, along with the development of corresponding early intervention programs, will have significant implications for future academic success. The book *Straight Talk about Reading* states the following:

- Early identification is critical, because the earlier the intervention, the easier it is to remediate.
- Inexpensive screening measures identify at-risk children in mid-kindergarten with 85% accuracy.
- If intervention is not provided before the age of eight, the probability of reading difficulties continuing into high school is 75% (Hall & Moats, 1999).

Universal screeners are brief measures administered to all students that are evidence-based, valid, and reliable. Screening assessments are designed to identify students in need of additional reading instruction beyond that provided to typically developing readers.

Screening for reading informs the appropriate type of instruction by providing teachers with individualized information about a student's mastery of basic foundational skill in reading.

Strong Readers Act

In Oklahoma, it is legislated under the Strong Readers Act that all kindergarten through 3rd grade students must be screened for reading

difficulties using a State Board of Education-approved screening instrument. Screening assessments on reading measure components of language including phonemic awareness, phonics, fluency, vocabulary, and reading comprehension to determine each student's risk for reading difficulty. These assessments are usually administered by the student's classroom teacher. The purpose of the Strong Readers Act [noted in [70 O.S. § 1210.508B\(B\)](#), p. 1038] is to ensure that progression from one grade to another is determined, in part, upon proficiency in reading, that school district board of education policies facilitate reading instruction and intervention services to address student reading needs, and that each student and his or her parent or legal guardian be informed of that student's reading progress.

Parents or guardians of students who demonstrate a risk of reading difficulty on a screening assessment are required to be notified in writing of that risk by the district. Then, students who demonstrate a risk for reading difficulties are provided a Student Literacy Intervention Plan (SLIP) to define the additional support and intervention services the student will be provided and to define how the student's progress will be measured and monitored. For more detailed information about Strong Readers Act, please visit [Strong Readers](#).

Screening for Characteristics of Dyslexia

In addition to receiving interventions and supports under a Student Literacy Intervention Plan (SLIP), any kindergarten through 3rd grade student who did not meet the beginning of year grade-level target equivalent to the 40th percentile on the universal screening measure for reading must also receive additional screening for the characteristics of dyslexia. If the additional screening measure indicates the student is at risk for characteristics of dyslexia, the SLIP will be written or revised to ensure it addresses the student's specific reading deficits. All interventions should directly match each student's identified skill needs (e.g., phonemic awareness in sound substitutions).

For more information on screening for characteristics of dyslexia, please refer to the OSDE's [Implementation Guidance on the Strong Readers Act website](#).

Screening for Risk of Characteristics vs. Identification of SLD

As mentioned above, Oklahoma legislation requires all kindergarten through 3rd grade students be screened for reading difficulties at the beginning, middle, and end of the year. For students not meeting the beginning of year benchmarks, an additional screening for risk of dyslexia characteristics is administered. It is important to note that students who are flagged as “at-risk” for characteristics of dyslexia are not automatically believed to have dyslexia. Rather, the additional assessment data should be used to refine interventions matched to the student’s needs, and the student’s progress should be monitored.

Some students may need more than these additional targeted supports, however. The school or parent may determine a comprehensive evaluation to determine special education eligibility is necessary in order to meet the student’s needs.

Not all students who have a risk for characteristics of dyslexia will need a comprehensive evaluation. A comprehensive evaluation will follow the process of special education eligibility as described in Chapter 15: Special Education Services of this handbook.

Students who are identified as “at risk” or “eligible for special education” will receive support based on their specific deficits, either through a [Student Literacy Intervention Plan](#) (SLIP) and/or an [Individualized Education Program](#) (IEP).

A SLIP documents a student's deficits and the specific target areas a student will work onto address their identified reading deficits. An IEP is a similar document that is under the IDEA requirements for providing specialized instruction necessary to ensure access to FAPE (Free Appropriate Public Education). This IEP is a required component when a student has met eligibility requirements for a disability. A student can have both an IEP and a SLIP; however, these documents must work in tandem with each other as a coordinated and aligned effort of support.

Screening in Multi-Tiered Systems of Support (MTSS)

As mentioned in Chapter 3: Introduction to Instructional Systems, screening serves as the foundation to Multi-Tiered Systems of Support (MTSS). Screening measures are the initial source of data indicating a student may be at risk for learning difficulties.

Once a screening measure has identified that a student may be at risk for

reading difficulties, some additional assessments, known as “diagnostics,” may be needed to identify specific skill deficits targeted for intervention. For instance, a screening measure may indicate a student is performing below grade level in the reading component area of phonics. Using additional assessments, or diagnostics, can indicate the highest phonics skill level a student has mastered and where their instruction should focus (e.g., vowel-consonant-‘e’ spelling patterns). Screening and follow-up assessment data provide the basis for instructional and intervention decision making, and this data serves as a baseline by which to measure student growth and progress.

Diagnostic assessments are essential tools for evaluating various aspects of learning. These assessments help identify specific areas where students may need additional support. Below are the key areas evaluated through diagnostic assessments:

- **Alphabet:** Oral and written sequencing.
- **Decoding Skills:** Understanding and applying phonics rules.
- **Phonological Awareness:**
 - Recognizing and producing rhyming words.
 - Segmenting words into syllables and sounds.
 - Manipulating sounds, including isolating, deleting, and substituting sounds.
- **Phonological Memory:**
 - Digit memory.
 - Word memory.
- **Encoding Skills:** Spelling proficiency.
- **Rapid Naming:** Quick identification of objects, colors, or symbols.
- **Oral Reading Fluency:** Accuracy and speed in reading aloud.

These assessments provide valuable insights that guide targeted interventions and support strategies for learners.



Informal diagnostics aid educators in identifying students' specific skill deficits to plan, modify, and/or differentiate instruction and intervention. Examples of FREE diagnostic tools include the following.

- [Really Great Reading](#)
- [The Phonological Awareness Screening Test \(PAST\)](#)
- [Core Literacy Library's Assessing Reading Plan](#)
- [The Cubed](#)
- [PADDI](#)
- [Acadience](#)
- [DIBLEs 8](#)

Dyslexia Checklist for Teachers

Dyslexia Checklists for Teachers are available for elementary and middle school/high school educators and can be found in the appendix.

Dyslexia Checklists for Teachers are not required for use by the Oklahoma State Department of Education (OSDE), but they can provide additional informal data collection. When a teacher reviews this checklist with a student in mind, they may identify needs for students previously overlooked, because those students do not present behavioral challenges or they can verbally compensate for their deficit. Teacher observations provided through structured questioning within the checklist are critical for student identification along with the Family Questionnaire (located in the appendix).

Key Takeaways

1. Will students catch up with the rest of the class if they are given enough time to read?

Strong evidence exists to support the hypothesis that a reading disability is the result of a deficit, rather than a developmental lag ([Francis, et al., 1996](#)). However, with early intervention, students who are indicated as having characteristics of dyslexia can show growth in their reading proficiency. Students with characteristics of dyslexia need explicit, targeted intervention to support this growth.

2. Can students be identified with characteristics of dyslexia or diagnosed with dyslexia before 3rd grade?

Yes, students prior to 3rd grade can be identified with characteristics of dyslexia through the [OSDE dyslexia screener](#) available for K-3 students. Students can be diagnosed with dyslexia from a clinical or neurological provider using the DSM-V diagnostic considerations. For more information on the different methods of dyslexia recognition, see Chapter 4 of this handbook.

3. Is a single test available to determine if an individual has dyslexia?

There is no single test for dyslexia. The dyslexia screener available to K-3 students combines a variety of assessments to determine if a student is at risk for characteristics of dyslexia. Additionally, when a student receives a comprehensive evaluation to determine if they would qualify for special education, some components are required that consist of multiple assessments to identify if the student has key eligibility indicators. Chapter 4 discusses the screeners available for K-3 students, and Chapter 14 identifies the components for a special education evaluation.

4. Will third-grade students identified with characteristics of dyslexia be retained?

Retention is a discussion between parents and schools. Parents should discuss with schools the requirements and the decision for retention. Districts will have their retention policies in their district policy guide.

Chapter 6: Effective Core Reading Instruction

“High-quality instruction is the key to ensuring that all children learn to read and write. Moreover, researchers have noted the important and positive impact that a knowledgeable teacher can make on a child’s literacy acquisition, particularly for children who struggle to acquire basic literacy skills” (Joshi et al., 2016).

- Joshi, Washburn & Kahn-Horwitz, 2016

Knowledge Self-Check

1. Will children naturally outgrow dyslexia?
2. Are the most prominent signs of dyslexia writing letters and words backwards or flipped?
3. Is dyslexia a visual problem that vision therapy and/or colored overlays will help to correct?
4. If a child is having books read to them at night, will they be a good reader?
5. Does lack of phonic instruction cause dyslexia?

Defining the Science of Reading

The term “science of reading” has been used frequently and sometimes incorrectly. Below are some of things to be aware of about the science of reading.

It is NOT instruction that focuses only on phonics. Research on the science of reading also addresses the need to gain knowledge, develop vocabulary, and read for meaning.

It is NOT a specific instructional program or curriculum that is taught with fidelity. The science of reading is research informing teachers how to best use curricular resources to meet the needs of students.

This is NOT a one-size-fits-all approach where each child does exactly the same thing. While research shows that all students acquire reading skills in the same manner, teachers often need to adjust their curriculum to allow for additional practice or instruction based on the needs of each student.

The science of reading is NOT research only addressing the early grades in

school. The research informing the science of reading extends from birth to adult literacy.

The science of reading refers to a comprehensive body of scientifically based research built on the convergence of a number of studies from a variety of disciplines, including education, linguistics, neuroscience, psychology, reading/literacy, and more. This research, conducted over the past five decades and across many languages, informs evidence-based practices in reading, writing, and language instruction.

As a result of this research, educators have a deeper understanding of how students learn to read, what skills are involved, how the skills work together, and which parts of the brain are responsible for reading development. Evidence-based practices used as a result of this research can improve student outcomes through the prevention of, and intervention for, reading difficulties.



Universal Design for Learning (UDL) ensures that all instructional activities occur within an accessible environment. For a comprehensive understanding of UDL principles, refer to Chapter 3: Introduction to Instructional Systems. Additionally, for practical application and instructional support in the English Language Arts (ELA) classroom, consult the [OSDE Framework's guidance on Universal Design for Learning in English Language Arts](#).

The Reading Brain

It is well established that while oral language comes naturally to people, reading and writing do not. The human brain is not naturally designed to read. Reading must be taught. In order to read, the brain re-purposed certain functions that were developed for other needs over thousands of years ago and adapted them for reading.

As a result of technology now available, researchers can identify how the brain processes speech and print in order to read. Through functional magnetic resonance imaging (fMRI), researchers have mapped the neural pathways involved in reading for typically-developing readers. Researchers also identified differences in these neural pathways for those who struggle with reading.

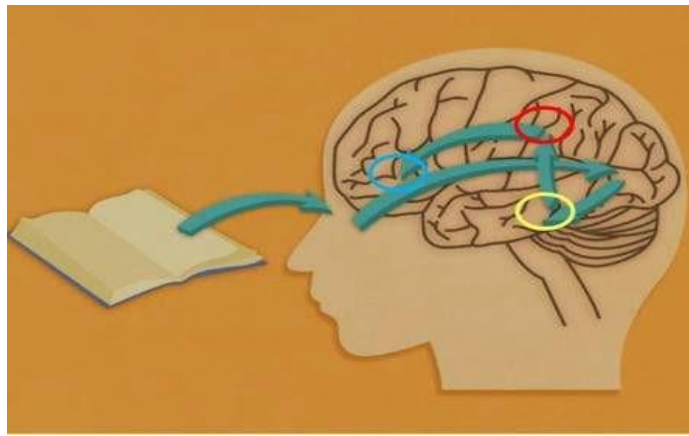


Image: Neural Pathways in Reading

Yellow-Left Fusiform Gyrus (visual word form area or VWFA) processes the shape of letters/words and is essential for reading. The VWFA does not work properly for people with dyslexia.

Red- Planum Temporale (Wernicke's Area) connects the letter shapes with their sounds among other things. Wernicke's Area also does not work properly for people with dyslexia.

Blue- Broca's Area. Processes language information and is involved with speech production. This area works well for people with dyslexia, but it does the processing that Wernicke's Area and the VWFA do not do. And Broca's Area is not developed to do that processing. The end result is the required processing Wernicke's Area and the VWFA does is not done, resulting in difficulties learning to read.



Check out a video that further describes how the brain learns to read!

[How the Brain Learns to Read-Professor Stanislas Dehaene](#)

How Do We Learn to Read Using the Simple View of Reading?



"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" (Wolf, 2007).

- Dr. Maryanne Wolf

Simple View of Reading

A formula introduced by Gough & Tunmer (1986)



Image: Formula for Simple View of Reading

[Gough and Tunmer](#), (1986) and [Hoover and Gough](#), (1990) described reading as the product of decoding and language comprehension. They add that these components work together in a delicate, interdependent balance, and when there is a disconnect between these components, reading failure can occur. The formula shown here is referred to as the **Simple View of Reading**.

Decoding is a student's ability to sound out words phonetically. As students become proficient decoders, they move to automatic word recognition. Comprehension skills begin with listening comprehension tasks. As students gain the ability to access text, they move toward the ultimate goal of reading, comprehension, or the ability to read and obtain meaning from text.

Both decoding and language comprehension are essential components and equally important for reading comprehension, as demonstrated through the

formula in the diagram above. In the table below, grade-appropriate skill is shown with a value of 1, while difficulty with that skill is shown with a value of 0. When something is multiplied by zero, the product is also zero. In this same manner, if a student lacks either decoding or language comprehension, then the student will not have success with reading comprehension.

Skill and Difficulty Calculations

Word Recognition		Language Comprehension		Reading Comprehension
1	X	1	=	1
0	X	1	=	0
1	X	0	=	0



The Simple View of Reading is a widely recognized framework that emphasizes the importance of both decoding and language comprehension in the reading process. For a comprehensive understanding of this concept, visit the detailed article available on [Reading Rockets](#).

Components of Effective Instruction Using the Reading Rope

Dr. Hollis Scarborough, a leading researcher in literacy, shares that fact of reading being a multifaceted skill gradually acquired through years of instruction and practice. Dr. Scarborough (2001) compares skilled reading to the many strands of a rope. [Scarborough's Reading Rope](#) illustrates how the strands of many skills, required to comprehend texts, are intertwined and how those skills become more complex. Each strand represents a separate skill that, when combined with the others, creates a strong, proficient reader. When any one strand (skill) is not acquired with fluency, it weakens the strength of the rope. The rope model includes two major categories:

language comprehension and word recognition.

Language comprehension skills become increasingly more strategic over time, while word recognition skills become increasingly more automatic. These skills enable a student to fluently read connected text and to coordinate word recognition and text comprehension.

Dyslexia impacts a student's learning in all strands of the Reading Rope. The Lower Strand and dyslexia are more interwoven due to the core deficit areas of dyslexia. The Upper Strands are often secondary impacts from dyslexia.

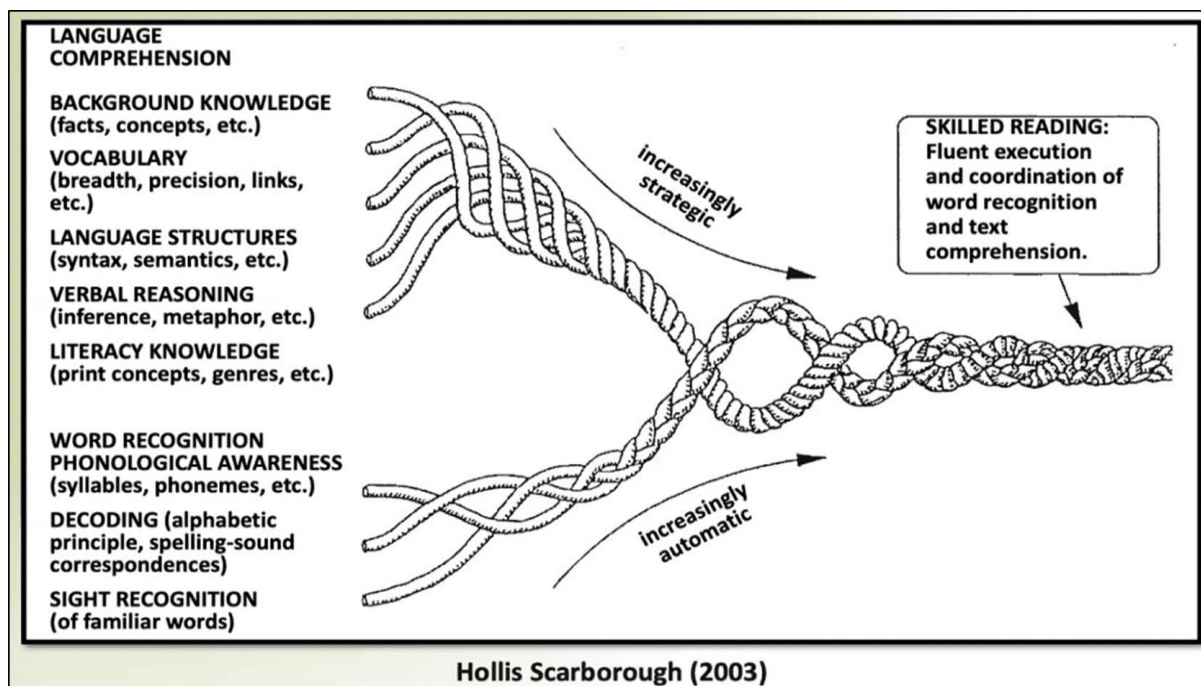


Image: Scarborough's Reading Rope with Oklahoma Academic Standards for English Language Arts

Word Recognition: The Lower Components of The Reading Rope

Dyslexia is a reading deficit that impacts a student's ability to engage with the Word Recognition strands of Scarborough's Reading Rope. While all children benefit from explicit, systematic instruction in phonological awareness, decoding, and sight recognition, children with dyslexia require more instruction, repetition, and strategic practice.

Decoding

Decoding is the process of using sound-letter correspondences to sound out

words. Interestingly, 84% of words in the English language can be decoded using phonics or word analysis ([Hanna et al., 1966](#)). Phonics is a systematic process for teaching sound-symbol relationships and their use in reading and spelling words. Systematic, explicit, and cumulative decoding instruction is critical for students with dyslexia and helpful for beginning readers.

Effective reading instruction must include the evidenced-based practice of explicit phonics instruction. This means instruction should progress from simple to more difficult tasks while employing the “I do, we do, you do,” model (explicit instruction through the gradual release of responsibility) (Pearson & Gallagher, 1983; [Webb et al., 2019](#)). Daily phonics and word study lessons should include repetitive, consistent procedures and cumulative instruction with individualized feedback in all environments that teach decoding. Students need access to decodable texts in order to manipulate and apply the learned skill in context.

Phonics instruction should include a scope and sequence that is systematic and cumulative, meaning that skills build from simple to more complex concepts in a logical manner with reviews built into lessons. The [Oklahoma Academic Standards \(OAS\) for English Language Arts \(ELA\)](#) includes a suggested sequence for decoding and encoding for kindergarten through 3rd grade in Standard 2: PWS and SE. Standard 2 is Phonics and Word Study (PWS) and Spelling/Encoding (SE) beginning with consonants and short vowels and moving through more advanced phonics such as syllables. See [Oklahoma Academic Standards \(ELA\) Vertical Progression](#).

Phonics and word study instruction should include explicit teaching in understanding and recognizing the six syllable types found in the English language to ensure that students can decode advanced multisyllabic words frequently found in text, especially content areas.



“There is no age where a student is ‘too old’ for phoneme awareness training, if the skills have not been mastered, the student should get training” (Kilpatrick, 2016).

- Dr. David Kilpatrick

Phonological Awareness

Phonological Awareness is the overarching term referring to the ability to attend to, discriminate, remember, and manipulate oral language units at the word, syllable, and phoneme (sound) level. Phonemic awareness is the ability to recognize and manipulate individual sounds.

Best practice within research recommends 10-15 minutes of instruction per day in phonemic awareness skills. This instruction will likely be provided as part of core instruction in kindergarten through grade 2. Even pre-kindergartners can engage in phonemic awareness instruction through guided activities including concept of a spoken word, rhyming, and eventually phoneme blending and segmentation. However, this instruction will continue to benefit students in later grades who have specific skill deficits in phonemic awareness through intervention.

A progression of phonological awareness skills leads to phonemic awareness (PA), a critical skill for beginning readers and often an area of weakness for students with dyslexia, including older students. Familiarity with the progression of phonological awareness is necessary to plan instruction for students who are dyslexic or who need intervention due to underdeveloped skills. Older students, even adults, can have skill deficits in phonemic awareness that can be remediated through intervention.

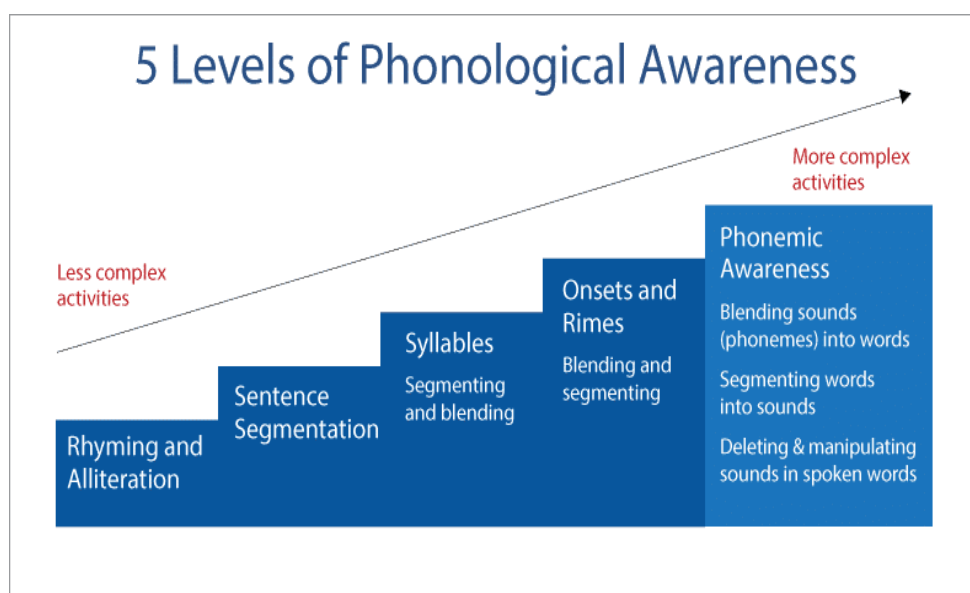


Image: Five Levels of Phonological Awareness Diagram

Sight Recognition

In this context, sight words are words you can recall automatically. This differs from high frequency words, which are found commonly in text, and irregular words which include one or more irregular sound/symbol correspondences.

A student must have strong phonological awareness/ analysis skills to efficiently build their sight recognition with orthographic mapping.

For a student to be successful at orthographic mapping, they must have a solid foundation in the following skills: automatic letter-sound associations, highly proficient phoneme awareness, and word study (Kilpatrick, 2016).

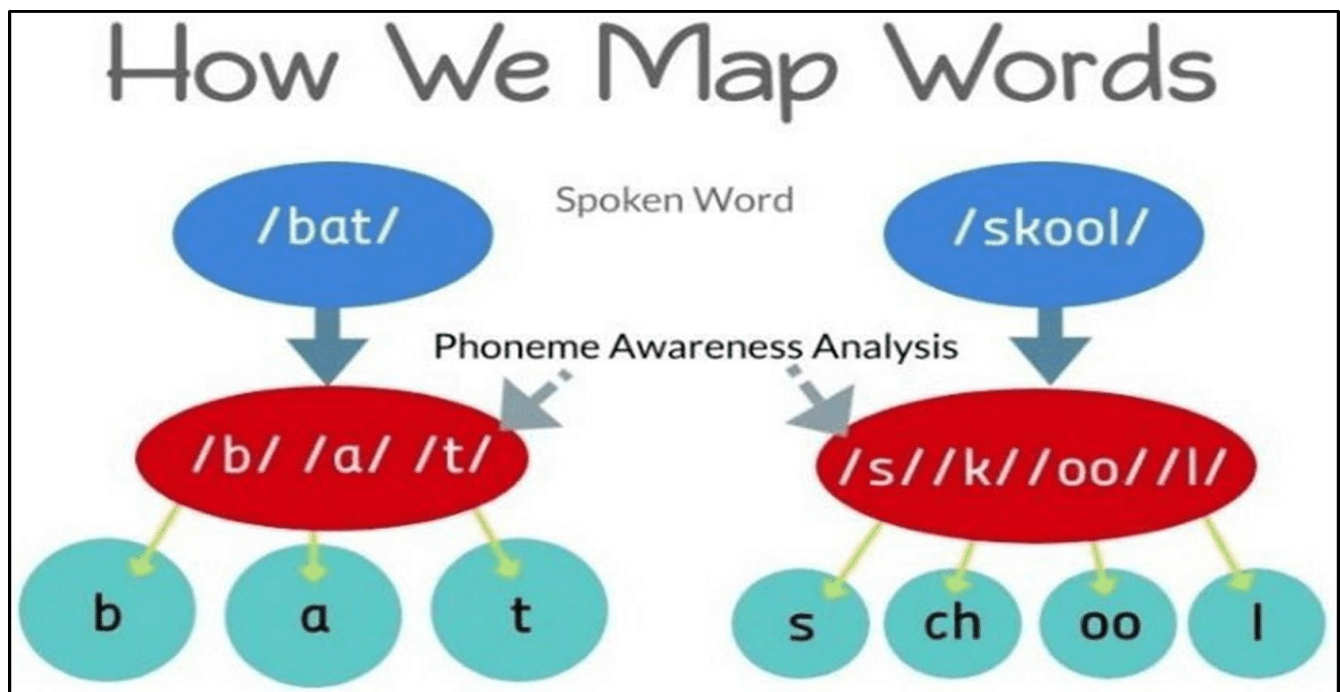


Image: How We Map Words Diagram

Orthographic mapping is the mental process of forming letter-sound connections to combine and recall the spelling, pronunciation, and meaning of words. It involves the critical process by which children are able to learn to read words at a glance, spell a word aloud from memory, and develop vocabulary knowledge. This cannot occur until a child has basic phonemic awareness and alphabet knowledge.

Language Comprehension: The Upper Components of The Reading Rope

Language comprehension is an overarching term to describe the ability to derive meaning from written and oral language. In order for students to be successful at this skill, they will need the ability to identify or decode words and understand the meaning of what they are reading. The components of language comprehension are represented on the upper strand of the reading rope.

Although students with dyslexia struggle primarily at the word recognition level, they are often successful with language comprehension. However, when language-learning activities require written responses, students with dyslexia may need to utilize classroom accommodations as they often struggle to get their thoughts on paper. It is also vital that students who are still mastering decoding skills be exposed to complex text to develop language comprehension. Simply put, students with dyslexia may have difficulty engaging in text that is at their independent level for comprehension because of their struggles with word recognition. The information provided below is important to note as students with dyslexia may have higher proficiency in these skills, or students may need direct support with one or more of these language components.

Background Knowledge

Providing students ample opportunity to activate or build background knowledge prior to listening or reading comprehension tasks will support all readers. It has been shown a student's knowledge about a topic has a direct effect on their ability to comprehend a text. The types of background knowledge are listed here.

- General world knowledge/cultural knowledge
- Specific topical knowledge (directly related to the text)
- Background knowledge and prior life experiences
- Knowledge of text structure
- Vocabulary knowledge

Vocabulary

Vocabulary is the knowledge of word meanings including morphology and semantics.

Morphology is the study of words, how they are formed, and their relationship to other words in the same language. Comprehensive morphology work includes the study of base words, common roots, prefixes, and suffixes, along with the derivations of Latin and Greek roots.

Semantics is the aspect of linguistics and logic concerned with meaning. Semantics differs from vocabulary, because it extends beyond the individual meaning of words. Semantics requires knowledge of vocabulary (a word's meaning, and perhaps its synonyms and antonyms) as well as syntax.

Effective reading instruction includes vocabulary instruction, which can include work with morphology and semantics. Because “About 80% of all words have one or more affixes, prefixes or suffixes,” (Cunningham, 1998), morphology work is essential to vocabulary instruction. Vocabulary, or knowledge of word meanings, plays a key role in reading comprehension. Research supports explicit, systematic teaching of word meanings through both direct and indirect methods of instruction. Repeated exposure to vocabulary is the most effective means of accomplishing learning. The [National Reading Panel Report](#) (2000) outlines a variety of vocabulary teaching practices or strategies.

Students acquire vocabulary knowledge best when a variety of engaging methods are used, including but not limited to being read to (including audio books), reading, direct instruction, and student-centered activities. The following list provides vocabulary guidelines for instruction, as defined by Judith Birsh in Multisensory Teaching of Basic Language Skills. (Birsh and Carreker, 2018).

- Provide rich and varied language experiences.
- Teach individual words.
- Teach word-learning strategies.
- Foster word consciousness.
- Use explicit instruction.
- [Apply cognitive and metacognitive strategies](#).
- Incorporate questioning approaches.
- Use collaborative engagement involving verbal interactions.
- Provide many opportunities for practice with teacher feedback

Language Structures

Language structures consist of discourse and syntax. Discourse can be defined as spoken or written language with a unified purpose and meaning. It is the organizational conventions in longer segments of oral or written language.

Syntax is a set of principles that dictate how words are ordered and combined to form phrases, clauses, or sentences. This includes grammar, sentence variation, and the mechanics of language.

Understanding the components of language structures is vital for both teachers and students, because proficient readers must process the meaning of sentences quickly in order to comprehend text successfully. This understanding of language structures is also important for effective writing, because a writer must manage a meaningful relationship between word order, sentences, and organizational conventions (Moats, 2020).

Components of Syntax

- Parts of speech.
- Rules for correct word order (e.g., active/passive voice).
- Sentence types (e.g., declarative, interrogative, exclamatory, and imperative).
- Sentence constructions (e.g., simple, compound, complex, and compound/complex).
- Sentence length.

Verbal Reasoning

Readers need the ability to make inferences and construct meaning from the text. That is, they need the ability to *think* logically about what they read if they are to understand it and its implications. Other indicators of verbal reasoning skills are understanding figurative language such as metaphors, words with multiple meanings, and inferences. This also extends to the combination of all the pieces of language comprehension. Students need to use their background knowledge, literacy knowledge, and vocabulary to think critically about the purpose of the text. Students need access to quality literature, in order to practice these skills; this access can be accommodated through read-aloud or audiobook accommodations.

Literacy Knowledge

Readers need to have knowledge of how printed text works, including familiarity with concepts about printed text, such as reading from left to right and top to bottom, etc. Literacy knowledge also includes an understanding of different genres, text structures and features, and the parts of books.

Examples of Text Features:

- Graphics and captions.
- The table of contents, appendix, and glossary.
- Headings and subheadings.



Discover a wealth of resources, instructional videos, and detailed information on the strands of the reading rope through these recommended links:

- [Teaching High-Frequency Words](#)
- [Sight Words and Orthographic Mapping](#)
- [Reading 101: Learning Modules](#)
- [Introduction to the ELAOK Framework](#)
- [Explore Teaching Topics](#)

Where Does Fluency Fit?



"Fluency is not seen as a separate reading subskill, but rather as a byproduct of having instant access to most or all of the words on the page" (Kilpatrick, 2015).

- Dr. David Kilpatrick

Fluent reading is, first and foremost, accurate reading. Accurate reading is a necessary precursor to becoming an efficient reader. Automatic word recognition frees a student's attention to comprehend the text. When students struggle with accuracy, phonics screening tools should be used to determine which skills require targeted intervention.

When students read accurately, fluency instruction should focus on reading with expression, proper intonation, and phrasing (prosody).

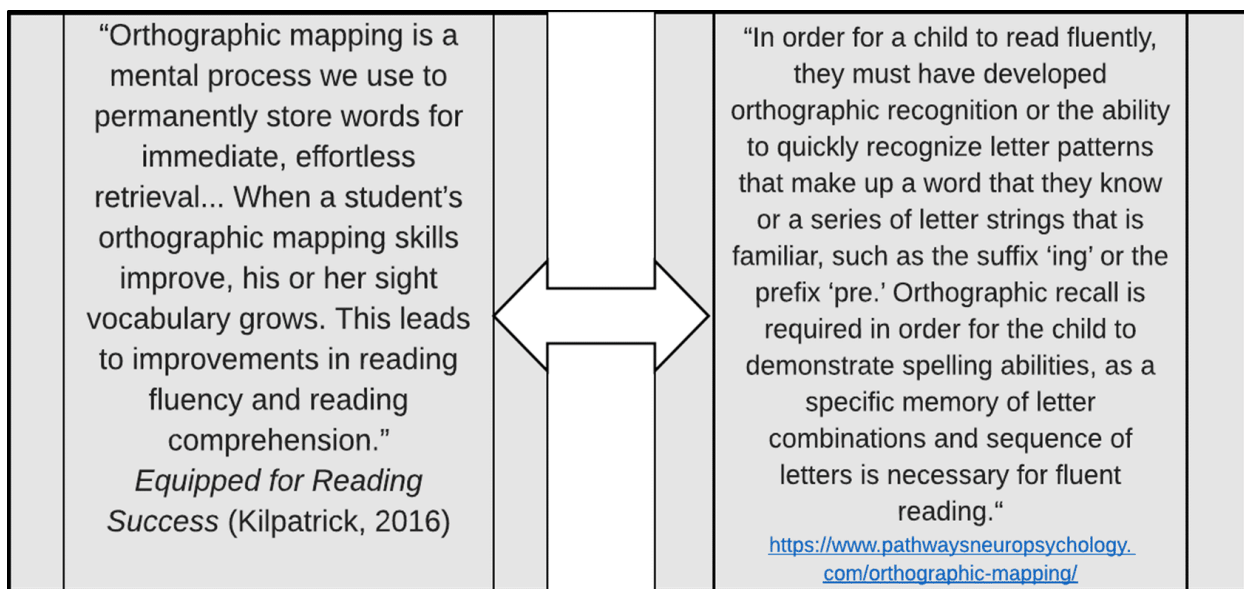


Image: Strand 3 - Sight Recognition

Efficient orthographic mapping skills lead to reading fluency. It is described in greater detail in this graphic.



Repeated reading is often provided as an intervention for students to practice fluency. However, inappropriate uses of this intervention do not show significant improvement. In *Essentials of Assessing, Preventing and Overcoming Reading Difficulties* (Kilpatrick, 2015), Kilpatrick reports, “the most exciting indirect evidence for orthographic mapping comes from subsets of intervention studies with weak readers. These studies produced improvements ranging from 12 to 25 points” (Kilpatrick, 2015).

Reading to practice fluency, with explicit instruction between reads, can be beneficial if the explicit instruction focuses on orthographic mapping, word decoding, and fluency skills. Additionally, repeated reading has a place during language comprehension instruction as students can practice revisiting text and engaging with background knowledge.

Inappropriate use of repeated reading includes attempts that eliminate explicit instruction and often request students to read the same text multiple times, timing each attempt, and labeling each attempt as a “cold” or “hot” read. These instances, Kilpatrick reports, “are only modest improvements of about 3 to 5 standard score points” (Kilpatrick, 2015).

It is imperative for classroom teachers, and others in the educational field, to understand these false assumptions about fluency. It is also imperative to understand and apply evidence-based practices to improve student reading fluency. The evidence-based practices that show the most improvement in a student’s fluency combine the following four skills.

- Phoneme manipulation tasks
- Phonics decoding training in areas of weakness
- Orthographic mapping
- The use of connected text

Reading Comprehension: The Product of Good Word Recognition and Language Comprehension

These “strands” all work together to create a skilled reader who comprehends text. The components under “Language Comprehension” become more strategic over time as a child learns and practices using different aspects of background knowledge, vocabulary, language structures, verbal reasoning, and literacy knowledge. The components under “Word Recognition” become more automatic with repetition and practice. All strands combine to create a knowledge and strategy base skilled readers use to read fluently and with good text comprehension. The overarching goal of instruction using the strands of the Reading Rope and the Simple View of Reading is to develop independent readers who can apply what they learn to independent reading.

[Tunmer and Hoover](#) (2019) further explain the product of reading comprehension as The Cognitive Foundations Framework in the chart below.

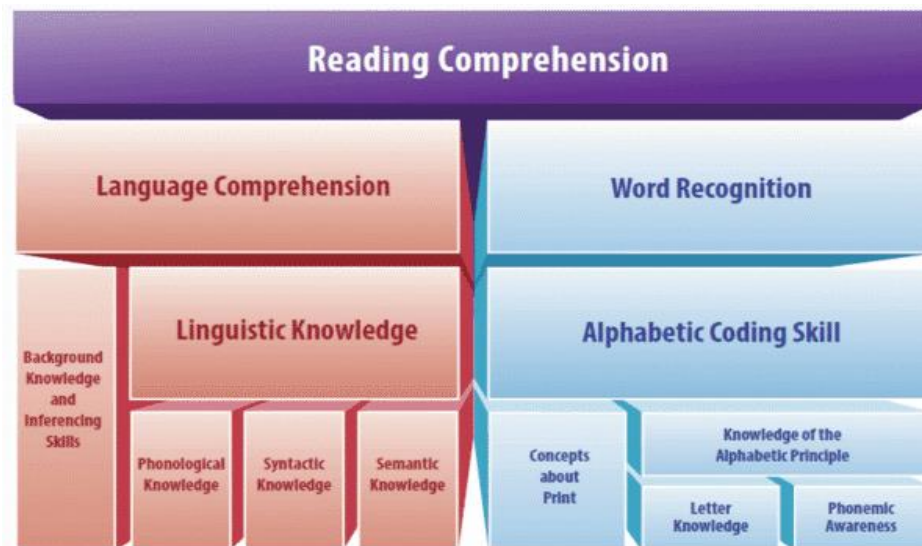


Image: The Cognitive Foundations Framework Chart

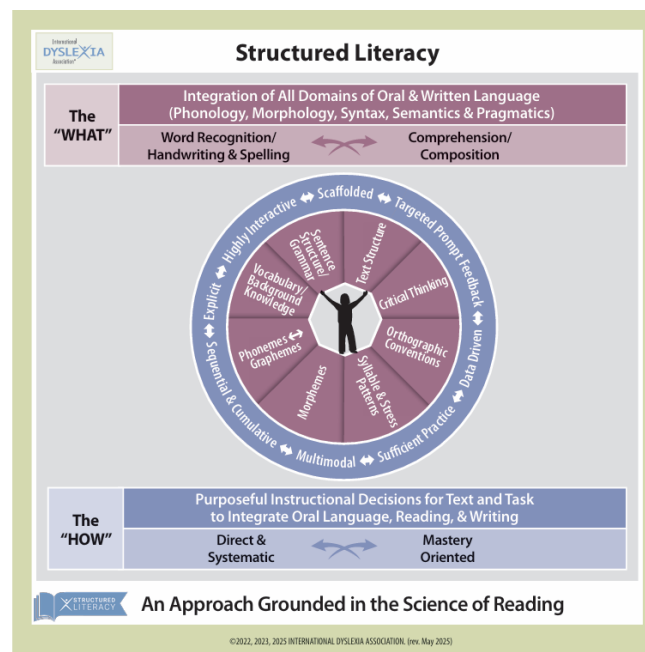
[The Cognitive Foundations Framework](#). Reprinted from Tunmer, W. E., & Hoover, W. A. (2019). The cognitive foundations of learning to read: a framework for preventing and remediating reading difficulties. *Australian Journal of Learning Difficulties*, 1-19. Reprinted with permission.

Knowledge and Practice Standards for Teachers of Reading

Included in the appendix is a **Knowledge and Practice Standards Self- Study Checklist**. This checklist is meant to be a tool for professionals to use during self- study through professional learning communities and other peer collaboration groups. Areas of strength can be identified to determine which staff can serve as coaches, model classrooms, and mentors. Areas of need in content knowledge can also be identified to create professional development opportunities for staff members at differentiated levels.

Structured Literacy

In 2014, the International Dyslexia Association (IDA) introduced the term "Structured Literacy" to distinguish research-based reading instruction from other methods like whole language and balanced literacy. The term gained widespread acceptance among educators, parents, and scientists. Over the following decade, IDA worked to promote understanding of Structured Literacy through presentations and publications. Structured Literacy is closely tied to IDA's Knowledge and Practice Standards, which outline the essential components and practices for effective reading instruction. To address concerns about potential misinterpretation of the term, IDA refined its Structured Literacy Wheel, created the Structured Literacy InfoMap, and developed a clear definition of Structured Literacy.

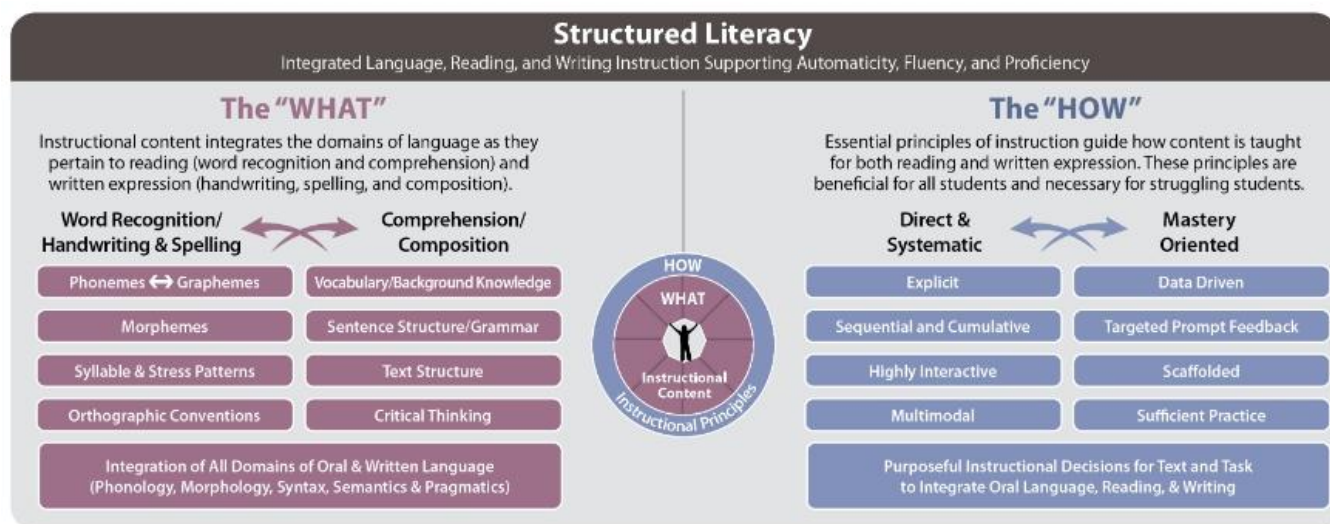


[Image: Teaching Structured Literacy](#)

IDA's Structured Literacy Working Definition

Structured Literacy is a comprehensive, integrated approach to reading and writing instruction that directly and systematically builds on and develops oral language while explicitly teaching the structure of written language. Using this research-based approach, educators integrate the teaching of the foundational and higher-order skill and knowledge needed to develop proficient reading comprehension and written expression (IDA, 2025).

Structured Literacy is a comprehensive instructional approach, not a single program, that systematically teaches oral and written language skills through direct, explicit, and mastery-based instruction. It integrates key language domains such as phonology, morphology, semantics, syntax, pragmatics, and orthography while using purposeful practice, carefully selected texts, and intentional teaching strategies. By combining what is taught with how it is taught, Structured Literacy builds strong reading and writing proficiency for all learners and is especially critical for students with dyslexia or those needing additional support.



[Structured Literacy Interactive InfoMap 2025](#)

The "What"

The "What" of Structured Literacy encompasses the integrated teaching of all domains of oral and written language, with a focus on how language is represented in print. Structured Literacy instruction combines essential components needed for reading, spelling, writing, comprehension, and composition rather than teaching them in isolation.

The content areas that support word recognition, spelling, and writing include skills such as phonology, sound-symbol relationships, syllable patterns, and morphology. Additional domains such as syntax, semantics, and pragmatics play a critical role in developing reading comprehension and written expression. While these components are often grouped by their primary purpose, they are highly interconnected and contribute to both word-level skills and understanding connected text.

A key principle of Structured Literacy is the integration of all language domains, phonology, morphology, syntax, semantics, and pragmatics. Effective instruction weaves these components together to help students develop strong decoding, spelling, comprehension, and composition skills, creating a comprehensive approach to literacy development.

The “How”

The "How" of Structured Literacy focuses on the instructional practices used to teach literacy effectively. It combines direct, explicit, and systematic instruction with practices that help students develop mastery and independence over time. An example While some instructional principles emphasize how skills are taught, others focus on how students practice, apply, and retain what they learn.

These principles are interconnected and should be integrated throughout instruction rather than taught separately. Structured Literacy instruction is beneficial for all learners and is especially critical for students who require additional support, including those with dyslexia.

The framework emphasizes intentional decisions about the texts selected, the learning tasks provided, and the integration of oral language, reading, and writing. By thoughtfully combining these elements, educators create cohesive instruction that supports the development of accurate word reading, language comprehension, written expression, and overall literacy proficiency.

Principles in Teaching Structured Literacy

While it is necessary that students are provided instruction in the above content, it is also critical that the way in which the content is delivered be consistent with evidence-based practices.

Explicit instruction is "An approach that involves direct instruction: The teacher demonstrates the task and provides guided practice with immediate corrective feedback before the student attempts the task independently" (Mather & Wendling, 2012). Explicit instruction means clearly explaining and demonstrating concepts rather than leaving them to a child's own learning through incidental encounters with information.

Systematic and Cumulative instruction requires that the sequence of instruction begin with the easiest concepts (that the student does not know) and progress to more difficult concepts. An example of an instructional sequence is shown in the Sample Scope and Sequence Chart located in the appendix of this manual.

Diagnostic Teaching to Automaticity: Diagnostic teaching requires continuous monitoring. Expert clinicians agree that when a Structured Literacy Lesson is calibrated to the student's true level of mastery, 80% of student responses in spelling and 90% in reading, or higher, will be accurate. A hallmark of properly planned and implemented Structured Literacy Lessons is students' consistent success.

To learn more about Structured Literacy, see the "[Linked InfoMap](#)," found in IDA's Digital Library, which provides information on implementation, research citations, and more.

A critical component of Structured Literacy instruction is the use of a scope and sequence (provided in the Appendix). A scope and sequence provides a carefully planned roadmap for instruction, outlining what skills will be taught and the order in which they will be introduced. Skills are presented from simple to more complex, ensuring that students develop a strong foundation before moving to advanced concepts. This cumulative progression allows students to continually review and apply previously learned skills while building new knowledge. A well-designed scope and sequence supports consistency across instruction, guides lesson planning, and helps educators monitor student progress toward mastery. While the pace may be adjusted based on student performance and data, the sequence of instruction remains systematic to ensure all critical literacy components are taught comprehensively.

In *Essentials of Assessing, Preventing, and Overcoming Reading Difficulties*, (Kilpatrick, 2015) Kilpatrick outlines Structured Literacy methods. Below is a brief summary of his findings.

“It is fair to assume that all reading methods were developed based on one factor: the desire to do what works best for children. But to address the needs of weak readers, good intentions are not sufficient...This research has shown that nearly all of the major assumptions underlying the three classical approaches to reading instruction do not accurately represent how reading works. Only the phonics approach to encountering unfamiliar words has research support” (Kilpatrick, 2015).

– Dr. David Kilpatrick

That is to say, if students do not have decoding skills, they will be ill-equipped to read and comprehend novel text. Phonics instruction must be combined with phonology, syllabication, morphology, syntax, and semantic knowledge in order to be effective. Additionally, quality reading instruction should engage students in learning and be differentiated to their needs.



For resources to Support Implementation of Structured Literacy visit:

[Rhode Island Department of Education](#)

Teaching All Students to Read in Elementary School: [A Guide for Principals By Center on Instruction](#)

[The Science of Reading Implementation Guide By EAB](#)

[Supporting a School-Wide Reading Initiative with Curriculum, Instruction, and Assessment, By Stan Paine \(Reading Rockets website\)](#)

Key Takeaways

1. Will children naturally outgrow dyslexia?

Dyslexia is neurobiological in origin and can impact students for their life. Evidence indicates that without early effective intervention and reading instruction, children with dyslexia continue to experience reading problems into adolescence and adulthood (Shaywitz, 2003). However, with early intervention, students who are indicated as having characteristics of dyslexia can show growth in their reading proficiency. Students with characteristics of dyslexia need explicit targeted intervention to support these changes.

2. Are the most prominent signs of dyslexia writing letters and words backwards or flipped?

Writing letters and words backwards may occur in any child prior to 2nd grade or prior to the age of eight or nine. Dyslexia does not cause children to see letters, numbers, and words backwards or inverted. However, some children with dyslexia may confuse letters, misread words, or have difficulty forming letters as a result of the lack of phonological skills (Moats, 1999).

3. Is dyslexia a visual problem that vision therapy and/or colored overlays will help to correct?

Dyslexia is not a problem with the eyes. Many children reverse their letters when learning to write regardless of whether they have dyslexia. For more information, visit the [Joint Statement](#) from the American Academy of Pediatrics, the American Academy of Ophthalmology, the American Association for Pediatric Ophthalmology and Strabismus, and the American Association of Certified Orthoptists along with the printable attachment [Vision Therapy and Reading Final.pdf](#).

4. If a child is read aloud to at night, will they be a good reader?

Simply being read to will not help a child sound out unknown words. Reading with a child is not enough to ensure a child becomes a successful reader. However, being read to between the ages of birth to five helps prepare the brain for becoming a reader. Reading to a child at any age promotes growth in vocabulary and background knowledge which can improve their comprehension.

5. Does lack of phonics instruction cause dyslexia?

Dyslexia, as previously mentioned, is a neurobiological disorder and is not caused by a lack of phonics instruction. In fact, increased phonics instruction alone will not help a child with dyslexia. Children with dyslexia are able to learn phonics once they have the underlying phonemic awareness abilities, although they may continue having trouble applying the phonics. This is why difficulty with phonics and word pronunciation is often a warning sign of dyslexia.

Chapter 7: Intervention for Students with Dyslexia

"Although dyslexia affects individuals over the life span and cannot be cured, reading skills can be increased with the right early intervention and prevention programs...It is clear from the consensus of scientifically based reading research that the nature of the educational intervention for individuals with reading disabilities and dyslexia is critical" (Birsh & Carreker, 2018).

- Dr. Judith Birsh

Knowledge Self-Check

1. Will a student with dyslexia only be instructed by specialists trained in dyslexia instruction?

When the 10-year-old student reviewer of this handbook (2023) was asked what helped her become a better reader, she stated:

"It's the way my Take Flight teacher teaches me. We go step-by-step and she doesn't move on until I have it. Before, my teacher would just have to keep going and then would try to come back later in a few days to show me again, but I was confused and never had enough time to understand. Now I know the rules and how it all works. It's like a puzzle and I was missing pieces before."

Early intervention and support for students with dyslexia ensures that all pieces of the puzzle are taught and mastered before increasing expectations. This chapter provides more information regarding effective intervention practices for students with dyslexia.

Why Is Reading Difficult for Students with Dyslexia?

A dyslexic brain processes print differently than that of a “typical” reader. This type of brain is characterized as having less efficient patterns of processing when reading. In the book *Essentials of Dyslexia Assessment and Intervention*, ([Mather & Wendling, 2012](#)) the authors identify the neurobiological characteristics of individuals with dyslexia. The list below outlines these findings.

Summary of Neurobiological Characteristics of Individuals with Dyslexia ([Mather & Wendling, 2012](#)).

- Less activation of posterior reading systems in the left hemisphere.
- Less temporoparietal activation.
- Less occipitoparietal activation.
- More activation in the left frontal, right frontal, and right occipitoparietal systems.
- Age-related differences between non-impaired readers and those with dyslexia.
- Tendencies for readers with dyslexia to rely on the memorization of words.
- Differences persist into adulthood, affecting development of reading fluency and spelling.

Like many other researchers interested in how a dyslexic reader’s brain works, Dr. Papanicolaou’s research conducted with the Texas Reading Institute showed the brain activity of dyslexic readers clusters disproportionately on the right side of the brain, rather than on the left side like that of effective and efficient readers. “It is like trying to paint with your toes,” explains Dr. Papanicolaou in the film, [Reading and the Brain](#), made available from WETA on Reading Rockets. “You are doing something using perfectly normal equipment, but not suitable for the purpose.” (Reading Rockets, n.d.).

In *Proust and the Squid: The Story and the Science of the Reading Brain*, Maryanne Wolf (2007) states, “When phonological skills play a more significant role in reading acquisition, as they do in less regular languages like English and French, phoneme awareness and decoding accuracy are often very deficient, and are good predictors of dyslexia.”

Maryanne Wolf (2007) also cautions:

“Children with any form of dyslexia are not ‘dumb’ or ‘stubborn’; nor are they ‘not working to potential’--three most frequent descriptions they endure. However, they will be mistakenly described in these ways many times by many people, including themselves. It is vital for parents and teachers to work to ensure that all children with any form of reading problems receive immediate, intensive intervention and that no child or adult equates reading problems with low intelligence. A comprehensive support system should be in place from the first indication of difficulty until the child becomes an independent, fluent reader, or the frustrations of reading failure can lead to a cycle of learning failure, dropping out, and delinquency. Most important, the considerable potential of these children will be lost to themselves and to society” (Wolf, 2007).

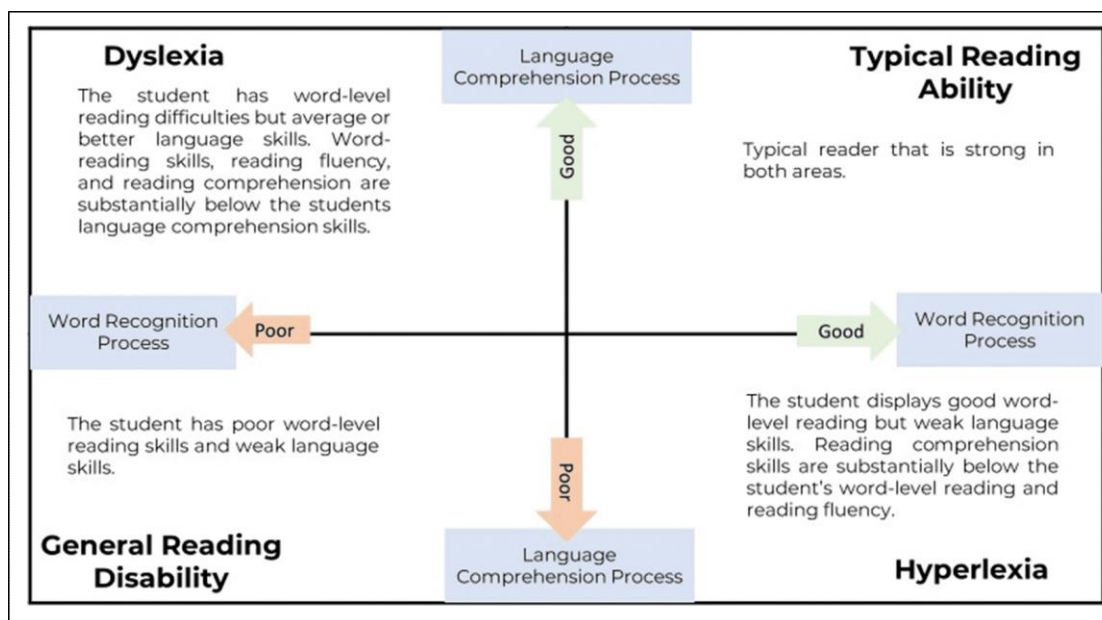


Image: Four Main Patterns of Reading Difficulties

Keeping Wolf's caution in mind, it is very important that parents and teachers understand the various patterns of reading challenges among struggling readers. Kilpatrick (2015) outlined the following four patterns of reading difficulties based on the Simple View of Reading.

Dyslexia exists on a continuum of severity, similar to autism or other disabilities, and a student's instructional needs will also be on a continuum. Intervention groupings must align with the level of intensity and areas of deficit needed to accelerate reading and writing growth.

Students with mild characteristics of dyslexia may find success with Tier 2 targeted interventions, while students with more significant deficits will need more individualized interventions through Tier 3. This continuum from mild to severe explains why intervention improves quickly for some students and slower for others. These different responses to intervention highlight the importance of data in individually supporting students.

Students with mild to moderate characteristics of dyslexia can often compensate for their weaknesses, thus keeping dyslexia “hidden or stealth” due to high oral language abilities. So some students may be older when intervention begins, as characteristics of dyslexia hide within the student's strengths. Because these students may not qualify for special education, interventions will be provided in Tier 2 in tandem with the general classroom.

More information on tiered systems of instruction can be found in Chapter 3: Introduction to Instructional Systems.

Students with moderate to severe characteristics of dyslexia have deficits in multiple areas associated with dyslexia. These students can be described as having double deficits, which refers to deficits in both phonological process and Rapid Automatized Naming (RAN). The rapid naming of letters and numbers is considered to be a measure of executive function. RAN is the processing speed of how students take in, store, and retrieve what they learn. “RAN speaks to the difficulty that some students will encounter in developing automaticity and their need for larger doses of instruction and practice as compared to other children with reading disabilities” (Ashby & Farrall, 2019).

The impacts of severe characteristics of dyslexia may limit a student’s ability to engage with print in general education without significant support. Interventions in multiple areas increase the time and intensity needed for a student to master the skills for proficient reading.

Delivering Tiered Dyslexia Intervention

Educators should use their students’ assessment data to plan effective, differentiated, small- group instruction and intervention. Chapter 5 describes the components of diagnostic assessments to identify specific skill deficits to target for intervention. When a student is identified as needing academic supports to target their deficits, the educator should consider methods to

provide the student access to differentiated small-group interventions based on the students' data and determined areas of need. Intervention should be provided to all students with needs in reading, including those who were "flagged" for characteristics of dyslexia, those who struggled without any identification of dyslexia, and those with an existing dyslexia diagnosis.



"Appropriate intervention provides startling results. Activation patterns were comparable to those obtained from children who had always been good readers. We had observed brain repair. And the children improved their reading" (Shaywitz, 2003).

- Dr. Sally Shaywitz

This statement was made after discussing patients' fMRIs after intervention.

Learning to read is a tremendous struggle for up to 20% of the population. The Yale Center for Dyslexia & Creativity indicates as many as **one in five** people are dyslexic. (Yale Center for Dyslexia & Creativity, n.d.). Data-driven early intervention services utilizing evidence-based instructional strategies are necessary for students with dyslexia to become efficient readers. Students with dyslexia benefit from structured language-based instruction. Using the MTSS structure, instruction can be provided to students with literacy deficits in a targeted approach based on student level data (National Center for Learning Disabilities, n.d.).

"Dyslexic readers need to learn how to apply the same strategies used by accomplished readers, but each strategy must be taught one at a time. After the introduction of a strategy, students must practice applying each strategy with authentic texts...The difference in teaching students with dyslexia and readers with dyslexia is not what is taught by how it is taught. Students with dyslexia require very explicit instruction and need more practice than do readers with dyslexia" (Smith, 2011).

- Mrs. Margret Taylor Smith

As discussed in Chapter 5, the Oklahoma State Department of Education supports an intervention process for students who are not meeting the expectations set forth from the Strong Readers Act in grades K-3rd. The Student Literacy Intervention Plan (SLIP) is a document outlining the intervention or support a student will receive due to performance on the universal screening assessment. With the addition of the screener for characteristics of dyslexia, SLIP documents may use an addendum form

to attach any additional interventions matched to additionally identified needs from characteristics of dyslexia found from the screener. The interventions for the SLIP under Strong Readers Act follow an MTSS framework to address the needs of all learners. Within this framework, student intervention should be matched to students' needs and skill deficits. The intervention is recorded, as required by Strong Readers Act, and the SLIP must meet all statutory requirements.

More information about the general MTSS framework can be found in Chapter 3: Introduction to Instructional Systems.

Tiered Instructional Considerations: The What not the Who Focus

Lesson planning to address the needs of the student should be the focus for educators. Students with dyslexia need systematic, explicit instruction across all components of the reading rope as discussed in Chapter 6. The [International Dyslexia Association](#) identifies the following critical and evidence-based components of dyslexia instruction:

- Phonology
- Morphology
- Syntax
- Semantics
- Pragmatics

The intervention should be matched to students' needs and skill deficits, and the intervention should ideally be provided as a dyslexia intervention to ensure all components of the instruction are given with fidelity by a trained educator. The Oklahoma Department of Education does *not* designate specific dyslexia programs for school districts.

Tier 2 - Targeted Instruction

Dyslexia exists on a continuum where not one instructional delivery works for all students. It is important that intervention grouping aligns with the level of intensity and the areas of deficit needed to accelerate each student's individual reading and writing growth.

Targeted, small group reading intervention should be explicit, direct, and systematic. A helpful tool for educators is the ***Components of a Structured Literacy Intervention Checklist***, which can be found in the appendix of this

handbook. The instruction should be cumulative to foster proficiency in decoding and encoding words with automaticity.

The targeted instruction can be provided as a pull-out by a reading specialist or other provider or as an in-class small group led by the teacher. Decisions on setting and provider should be made based on student needs. Records of interventions with notes of student performance, mastery, or needs documenting next steps must be kept for purposes of SLIPs and potential special education evaluations. Records provide valuable information when changes need to be made, especially at times when educators or students transition from buildings, instructors, and/or grade levels.

The Middle Tennessee State University Center for the Study and Treatment of Dyslexia developed instructional materials for teachers to use to support their efforts delivering effective literacy instruction to their students. These [Tier 2 frameworks](#) can assist educators in lesson planning.

Tier 3 - Intensive Intervention

Some students with dyslexia may require an intervention that would provide more intensity at an appropriate pacing to master the skills required for proficient reading. Intensive interventions should still utilize explicit instruction, appropriate sequencing of skills, and an educator with expertise in teaching the content. Tier 3 interventions are specifically designed lessons taught in 1:1 or very small groups (2-3) which provide intensive instruction. Tier 3 is prescriptive to students' needs and focused on needs for reading instruction.

Tier 3 may include students with Individualized Education Programs (IEPs) with instruction provided outside of special education. See the **Considerations for Interventions** section below for more information.

Increasing Intensity of Interventions

Chapter 3 provides foundational needs for the intensification of instruction across disciplines. For students with dyslexia, implementation fidelity of explicit, systematic, and cumulative instruction is critical. The main goal for the intensification of a dyslexia intervention is to accelerate learning so that the student can make adequate progress to ensure that they are on the right pathway to learn to read.

Before adapting or intensifying an intervention, always consider whether

the current intervention program has been implemented with fidelity and for a sufficient amount of time. The National Center on Intensive Intervention has several tools including *the [Intensification Strategy Checklist](#)* and the *[Intensifying Literacy Instruction: Essential Practices](#)* document to assist intervention teams in identifying ideas that will increase the strength of an intervention to benefit the student who needs additional support.

Effective Programs for Intervention

In addition to Core Tier 1 programs selected from the [OSDE's approved curriculum list](#), schools may consider additional intervention programs. Supplemental programs provide instruction in key areas of the components of [the Reading Rope](#). This supplemental instruction adds to the Core Tier 1 program by adding content where the core curriculum is not providing enough instruction or practice to meet the needs of students. Adding supplemental programs in Core Tier 1 or Tier 2 can strengthen instruction. These supplemental programs can vary in instructional time from 5 minutes to 30 minutes and are typically delivered in small groups.

Intervention programs are high-quality instruction that are evidence-based, systematic, and delivered in a small group setting of 1-3 students. Progress monitoring aligns the intensity of programming with the students' instructional needs. Intervention programs are provided in addition to the Core Tier 1 instruction. Programs for intensive intervention address the critical and evidence-based components of dyslexia instruction discussed above. Using a program with a clear, systematic scope and sequence that is aligned vertically across tiers of instruction provides opportunities for consistency of language and instructional routines. This consistency supports student access to the content by maintaining previously taught routines and practices.

It is important to note the cognitive demands needed for switching between programs and curriculum, particularly from one grade level to the next. Intervention may need to align with the core instruction's scope, sequence, and associated instructional routines. As an example, core instruction that utilizes the keyword "edge" for the short /e/ sound should also be used within an intervention, even if the intervention program uses an alternate keyword. Wherever possible, educators should ensure consistency and alignment in the language and routines between multiple programs to reduce the cognitive load for students participating in multiple instructional programs.

Selecting a supplemental or intervention program should be paired with professional development and coaching to support instructional quality and fidelity. OSDE does not have an approved list of supplemental or intervention programs for dyslexia at this time. Decoding Dyslexia Oklahoma provides a list of programs reviewed and approved by other state departments of education. The ***Components of Structured Literacy Intervention Checklist***, included in the Appendix of this handbook, can be used to guide decisions about appropriate intervention programs. The International Dyslexia Association (IDA) fact sheets on [Effective Reading Instruction for Students with Dyslexia and Dyslexia Assessment](#) can provide guidance on services for students.



If you need free supplemental resources for evidence-based instruction, in addition to your school's/district's high-quality program, please see these resources listed below.

<https://www.maroonneyfoundation.org/>

<https://fcrr.org/resource-database>

<https://ufli.education.ufl.edu/foundations/toolbox/>

<https://readinguniverse.org/explore-teaching-topics>

Considerations for Intervention

Dyslexia intervention should be provided by a professional specifically trained to provide explicit instruction to meet the student's needs, and the intervention should be tied to identified skill deficits that affect the student's ability to decode and encode text with proficiency. The educator providing intervention to a student with dyslexia should have a strong knowledge of dyslexia and its common co-occurring conditions, possess an ability to teach language patterns and word structure, and understand the integral skills required for reading proficiency. A student with an Individualized Education Program (IEP) can receive specially designed instruction from any educator or provider who has the necessary training and expertise to support a student's needs and defined IEP goals. The provider of direct instruction in reading does not have to be a certified special educator, but this direct instruction can include general educators, related service providers, or dyslexia therapists. Students not receiving services under an IEP should still receive intervention services that are most appropriate

to meet their identified needs and to remediate skill deficits. If the school identifies a dyslexia program for students, the dyslexia interventionist should be trained in the dyslexia program.

In addition, a dyslexia interventionist should understand and be fluent in the components and processes of Multi-Tiered Systems of Support (MTSS) and/or the processes for Response to Intervention (RTI). In addition, it is important for the dyslexia interventionist to have expertise in screening, analyzing, and interpreting data to assist the MTSS or RTI teams in determining appropriate interventions to address specific student needs.

Effective Dyslexia Intervention Considerations

- An evidence-based intervention that is effective for students who have dyslexia
- Implementation by a trained or certified instructor
- Taught with fidelity
- Extended time in small groups instruction (45-60 minutes daily)
- Professional development and coaching for staff to implement the intervention effectively
- Includes frequent assessment and progress monitoring
- Intense focus on phonological and phonemic awareness skills
- Explicit instruction of sound and symbol correspondences
- Decoding and encoding instruction and practice
- Focus on automatic word recognition through phonics and orthographic patterns
- Reading strategies for comprehension and fluency
- Multisensory approach for teaching and learning

Discontinuing Interventions

While students may meet benchmark levels or progress monitoring requirements before completing an intervention, it is generally not recommended to discontinue intervention

services prematurely. This is because students who exit interventions early may not receive the necessary repetition and reinforcement to fully address their learning needs.

For instance, a student who achieves grade-level reading accuracy but lacks fluency still requires ongoing, targeted instruction to ensure sustained improvement. Completing the full intervention program supports the student in achieving long-term academic success.

According to the [IRIS Center Peabody College Vanderbilt University RTI Module](#), it is essential to establish clear criteria for concluding interventions. Additionally, if a student is dismissed from an intervention, continued progress monitoring is recommended to ensure that their skills do not regress and that they maintain progress within the general education curriculum.

Computer Programs for Instruction

Popularity in computer-based instruction for teaching reading is increasing. Computer programs can provide the teacher information on areas of instructional need and can possibly assign activities for targeted instruction. Such programs can offer students with dyslexia the additional repetition they need to become efficient readers. Using computer-based programs as supplemental instruction may assist a student in retaining information learned and in accelerating overall growth.



Computer-based instruction should be utilized as a supplementary tool and not as a sole intervention method, especially when other tailored interventions are accessible. While these programs can offer valuable support, their effectiveness depends significantly on the specific program's design and the instructional expertise of the staff implementing them. Importantly, computer instruction does not replace the necessity for specially designed instruction in special education, which addresses the unique needs of each learner.

AT: Dyslexia Supports

Text to Speech/Audiobooks

Text to Speech (TTS) is the most common assistive technology used to allow a student to work independently. TTS can be referred to as “ear-reading.” For some students, ear-reading can be the first positive experience with reading, and it can change a student’s perspective from torture to interest. The use of TTS or Audiobooks can build students’

vocabulary, provide access to classroom content, and promote independence for students. Students will need time and support to build their stamina and find their best way of accessing text. As students become proficient, they may even access text in multiple ways.

As the table above indicates, multiple avenues are available to access TTS for students. TTS can be used as an accommodation to provide a student with Accessible Educational Materials (AEM). Some resources have Federal Legal Copyright requirements for eligibility by the student for the use of the resources. Below are some key features of the most popular resources for accessing audiobooks.

Text-To-Speech / Audiobook Resources				
Resource	Cost	Book Count	Voice Style	Access
Bookshare	Free	Over one million titles	Synthetic and human (limited)	Verified print disability
Learning Ally	Fee	80,000 titles	Human	Verified print disability
Overdrive/public library	Free	Varies by library	Synthetic and human	Anyone
Audible	Paid		Human	Anyone

[Audiopub.org](#) has additional information and resources on sound learning for educators and librarians.

Synthetic vs. Human Voice The integration of audio- assisted devices is growing in use in a wide variety of products in our home and work life. This growth is allowing those with disabilities to have improved quality in the devices they use to complete daily tasks.

Students will prefer a synthetic or human voice for accessing audiobooks. The preference of voice is personal and should be considered over the preferences of teachers and family. During AT evaluations, a student can be screened for their preference using screening tools, including uPAR and PAR. A student's flexibility between synthetic and human readers can provide a broader selection of text availability. Synthetic voices are available in a variety of styles and in some cases can be customized. Human-narrated textbooks can have multiple readers within the text, and that can be confusing for some students.

Applications using synthetically voiced text-to-speech often allow for customization in text formatting, and they have features to bookmark or take notes. According to the National Assistive Technology in Education Network notes, "Research indicates this enhances student engagement, interest, and motivations" (NATE Network).

Educators are sharing the impact of using various assistive technology resources, including Bookshare. A [November 2018 article](#) in Edutopia discussed the benefits of ear-reading including how students with dyslexia are becoming the Student-Led Tech Crew. The Tech Crew is delivering professional development to teachers, allowing the students to be recognized for their strengths and achievements.

Dyslexia Font

In the last few years, a lot of discussion has happened on the new dyslexia fonts. While reports have shared the success of students using the font, the research has indicated the, “Dyslexia font did not lead to improved reading compared to normal ‘Arial’ font, nor was it preferred by most students” (Kuster et al., 2018). Students will be presented with a wide variety of fonts over a lifetime, and they should not be dependent on a single one or a single source. If the font is used, it should be one of many the student is interacting with.

Students and teachers will need to work together to find the right tools to enable independence and will need training and ongoing support to ensure independence. They will need training and ongoing support to ensure successful implementation. Oklahoma ABLE Tech can provide guidance and trial devices to assist in matching student needs to the proper tool.

Key Takeaways

1. Will a student with dyslexia only be instructed by specialists trained in dyslexia instruction?

Dyslexia is one of the leading causes of reading difficulties among students. In a classroom of 25, one to five students could struggle with dyslexia ranging from mild to severe. Since students with characteristics of dyslexia can exhibit a variety of deficits related to their reading ability, their provider of supports and instruction may be a general education teacher. It is important for the education team to consider the needs of the student and provide information to the parent on who will be providing the needed supports to the student. See Chapter 3 for information on MTSS and how these supports are determined and provided to students.

Chapter 8: Adolescent Literacy

Knowledge Self-Check

1. When is it too late to teach reading skills?
2. How do students gain literacy skills beyond 4th grade?
3. Who is responsible for literacy instruction in grades 4th-12th?

Adolescent Literacy

Middle and high school students must be able to access and comprehend content in all classes, which is achieved when they decode text accurately and fluently. Understanding what they are reading, including vocabulary, background knowledge, and the text's complexities, requires significant effort for students with dyslexia. When students cannot access information due to a reading disability, they struggle with content in multiple classes beyond English Language Arts. Students who are not reading at grade level need support from teachers in most subjects and greater access to grade-level content. Structured Literacy, in the context of MTSS and RtI support, should not be limited to elementary school-aged students or the ELA/Reading teacher. Students of all ages can benefit from high-quality reading instruction focusing on the Structured Literacy principles.

Literacy instruction needs to continue beyond grades 4 through 12. Higher-level reading skills should be taught through direct, explicit instruction. For example, morphology should be taught in partnership with science classes, not as rote memorization but through embedded explicit instruction. After grade 4, it is often assumed that individuals who cannot read should be assisted with accommodations and technology aids rather than receiving direct reading instruction. While technology can help students access content, it must never replace targeted interventions. Students who need reading instruction must receive it to make meaningful progress. There is a common misconception that struggling readers should simply be provided with accommodations and technology tools instead of continued, direct reading instruction. For more information, explore [Adolescents and Adults](#)

"In an ever-evolving world, literacy stands as a cornerstone of personal and academic success, particularly during the critical adolescent years. It is critical that we continue to address literacy as a high priority issue, even as students reach the secondary grades" (Sedita, 2026).

~ Dr. Sharon Vaughn & Dr. Jade Wexler, from the forward to *Essentials of Adolescent Literacy*

Understanding Adolescent Literacy

Adolescent literacy spans from the fourth to twelfth grade, marking a critical transition in a student's educational journey. During this phase, students move from learning to read to reading to learn, a shift that requires the development of advanced reading and comprehension skills. This period is characterized by an increased focus on subject-specific literacy, where students engage with diverse disciplines such as history, science, and mathematics. Literacy becomes an integral part of these subjects, as students must not only understand the content but also analyze and interpret complex texts. Teachers across all subjects play a crucial role in fostering these skills, ensuring that students are equipped to navigate and excel in their academic pursuits.

Joan Sedita defines Adolescent literacy into three levels: basic literacy, content literacy, and disciplinary literacy. Basic literacy involves the basic skills of reading and writing, which are essential for understanding any text. Interventions on the basic level should include phonics, fluency, vocabulary, comprehension, and basic writing skills. Content literacy builds on these skills, focusing on the ability to comprehend using vocabulary and writing strategies specific to various subjects. Disciplinary literacy, the most advanced level, requires students to master the unique ways of thinking, reading, and communicating inherent to each academic field. For instance, understanding scientific texts involves interpreting data and grasping technical terminology, while analyzing historical documents requires contextual knowledge and critical thinking. By addressing these levels, educators can provide targeted support, enabling students to become proficient, critical readers and thinkers who are prepared for the challenges of higher education and beyond.

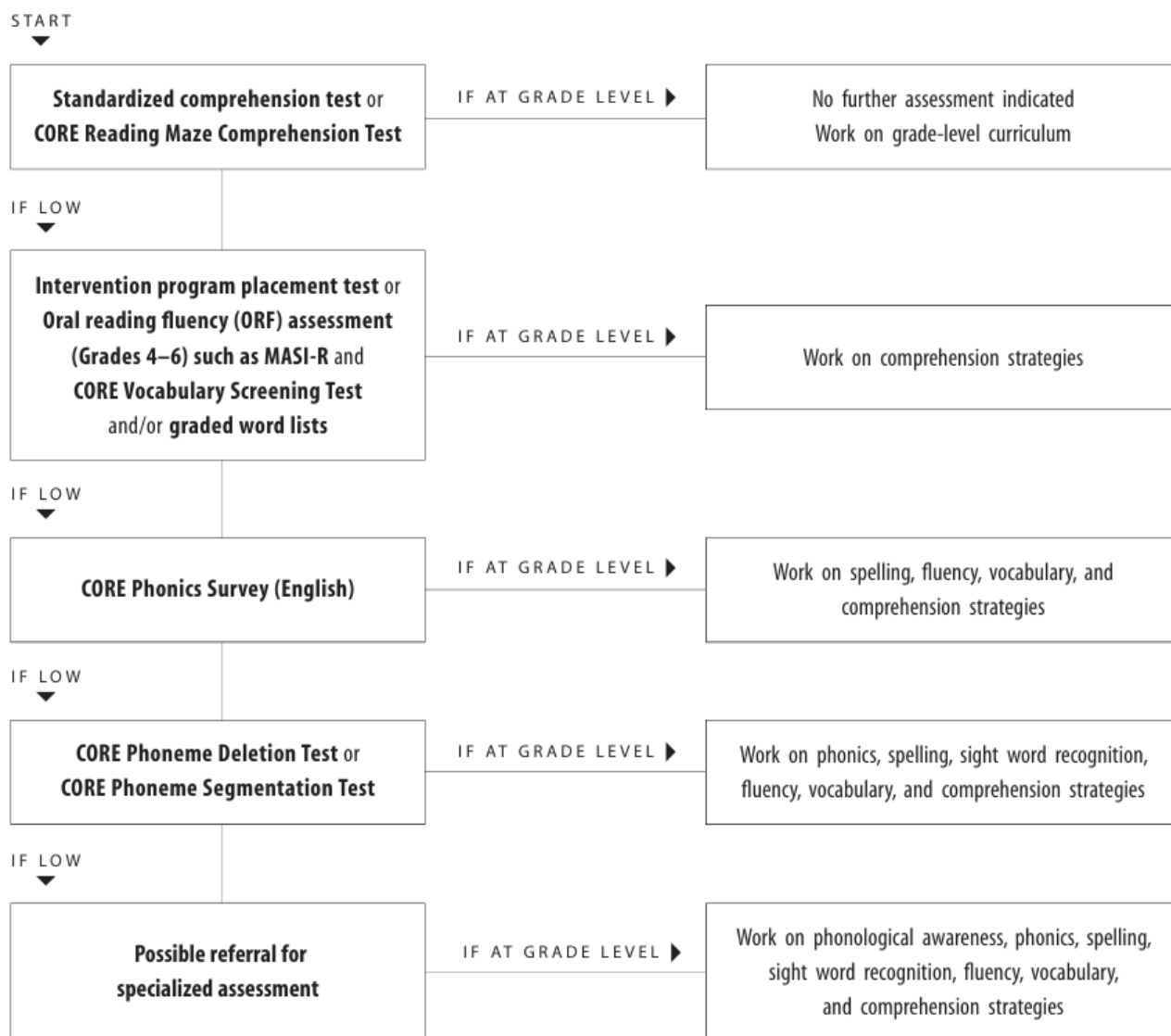
Levels of Adolescent Literacy Instruction

Disciplinary literacy	Advanced reading and writing to learn <i>specialized strategies unique to subject areas</i>	Tier 1 Instruction <i>provides accommodations, modifications, and scaffolds that ensure struggling readers and writers can access the same content knowledge as their peers</i>
Content literacy	Reading and writing to learn <i>vocabulary, comprehension, writing strategies used across all subjects</i>	
Basic literacy	Learning to read and write <i>intervention for basic skills, including phonics, fluency, vocabulary, comprehension, basic writing skills</i>	Tiers 2 and 3 Instruction <i>remediate to develop basic skills</i>

Screening and Assessments

Screening helps identify students who are behind and clarifies whether their needs are foundational (such as decoding) or discipline-specific. For adolescents, the process begins with advanced indicators, like fluency and comprehension, using tools such as group-administered comprehension screeners. Only if results show a need do teachers move to earlier skills, such as phonics. This approach, which is the reverse of early-grade screening (where simple skills are assessed first), ensures that screening for grades 4–12 remains efficient, targeted, and appropriate and prevents over screening (See CORE Learn Table 7.2.).

Diagnostic Plan for Students in Grades 4–12



Educators have access to a variety of tools designed to assess and enhance literacy skills among adolescents. These tools are essential for identifying students who may require additional support to achieve academic success. One such tool is the [Adolescent Assessment of Literacy \(AAL\)](#), developed by the National Center on Improving Literacy. This free, computer-based screening tool is tailored for students in grades 3 through 12 and provides educators with a comprehensive understanding of their students' literacy levels. By utilizing the AAL, educators can pinpoint specific areas where students may struggle and implement targeted interventions to address these challenges effectively.

Another valuable resource is the [Colorado Learning Disabilities Questionnaire–Reading Subscale \(CLDQ-R\)](#). This screening tool is specifically designed to identify the risk of reading disabilities, such as dyslexia, in school-aged children. The CLDQ-R combines parent-reported data with results from standardized reading assessments to provide a reliable and valid measure of a student's reading abilities. Research has demonstrated the effectiveness of the CLDQ-R in accurately identifying students who may benefit from further diagnostic evaluations. For more information visit

Following the initial screening process, it is crucial to conduct diagnostic assessments for students who exhibit significant difficulties. These assessments help educators determine precise skill gaps and develop tailored intervention strategies. For students who are substantially behind their peers and have not been previously identified, it is important to initiate child-find protocols and consider special education evaluations. By employing these tools and processes, educators can ensure that all students receive the support they need to thrive academically.

Instruction and Intervention

Basic Literacy/Foundation Skills

Older students who continue to struggle with reading should not be considered lost causes. These students deserve instruction from a knowledgeable teacher who can fill in their literacy gaps and, like younger students, older students need high-quality intervention. Closing the gap for older students will require an interventionist with considerable knowledge in

the components of reading, writing, and spelling. Students in middle school or high school will likely not receive services on the most foundational aspects of decoding text or word and sentence structure in the typical classroom. Instruction and intervention in the foundational skills of literacy are taught in elementary school, and it is assumed all students already have those skills mastered by the time they attend upper grades. Delivery of intervention for these older students needs to be based on their specific area(s) of deficits. See Chapter 6: Effective Core Reading Instruction and Chapter 6: Intervention for Students with Dyslexia for understanding the acquisition of foundational skills through interventions and support of these foundational skills.

Content Literacy

Accurate Word Reading and Morphology

Accurate word reading extends beyond foundational reading skills and students benefit from a recursive process for reviewing components of word patterns. As outlined in Oklahoma’s state standards, students benefit from continuously revisit, refine, and deepen skills rather than following a strict linear progression. The IES Providing Reading Interventions for Students in Grades 4–9 highlights the need to review vowel and consonant combinations introduced in elementary grades, but in grade-appropriate language, and stresses the importance of multisyllable routines (Institute of Education Sciences [IES], 2022). Teachers and students can connect classroom vocabulary to identify sounds and letter combinations with syllable routines. As students progress in school, words in texts become more difficult. Early grades include simple monosyllabic and multisyllabic words, while upper grades feature more complex multisyllabic words. Breaking down the words in a simple routine can help students sound out words.

Implementing a common routine across the school allows teachers of all disciplines to help students. Example 1.1 and 1.2 (IES, 2022) demonstrate an example of identifying prefixes, suffixes, and vowel combinations in a multisyllabic word. An important part of breaking down a word is to understand the interactions of morphology and the impact on decoding and the meaning of words. Dr. Lane, Gutlohn, and van Dijk identified the high-utility morphemes for instruction and provided a list of morphemes for teachers (Lane et al., 2019).

Automatic Reading - Fluency

Fluency allows students to move from sounding out words to building meaning from what they are reading. Fluency is the bridge from accurate word reading to broader comprehension and it focuses on pacing with expression with accuracy not speed. Benchmark fluency rates from

Hasbrouck and Tindal (2017) end at 6th grade, indicating a level of automaticity for proficient reading with older students needing a “rate of 145-150 WCPM with 95% or higher accuracy” ([Sedita, 2025](#); [Sedita, 2026](#)).

Students benefit from a wide variety of texts across the content areas, with complex texts to build their fluency as they continue through school. The interventions including repeated reading, prosody instruction, and opportunities to read a variety of texts, are included in the IES Guide recommendations.

A student identified with dyslexia may continue to lag behind their peers in fluency even after intervention and accurate word reading is achieved. Read alouds, audiobooks, or computer reading with the student reading along can model fluent reading to help build reading (Hasbrouck, 2020).

Building Comprehension

Comprehension is the goal of reading, but many students struggle to comprehend what they read, leading to frustration and avoidance of reading. Helping students grasp key ideas from information prevents them from missing essential opportunities to learn grade-level content. Students benefit from explicit instruction strategies and routines with teachers gradually releasing support as students become successful.

The IES Guide recommends four core elements. Recommendation 3A, improving both world knowledge and word knowledge and comprehension-building strategies for developing strong reading skills. Recommendation 3B, provide students with opportunities to ask and answer questions, including teaching them to ask questions while they read. Recommendation 3C, students need a routine for determining the gist of a section of a text, including making gist statements. Gist statements are important across content areas where text structures may differ. Finally, Recommendation 3D helps students understand harder texts through stretch texts. Working with stretch text needs careful planning and more support for struggling readers

as whole-class or group work.

Comprehension is a secondary consequence of dyslexia affecting academic performance. By implementing practices, as recommended in the IES Guide, students gain the tools necessary to read with understanding. Each part of the recommendations are essential, and together, they provide comprehensive support for improving student comprehension and academic success.



Students thrive in an environment where they feel safe and supported. Identifying challenges such as dyslexia can unlock essential resources, yet many students may have faced years of struggle before receiving help. Teachers play a pivotal role in fostering empathy and rebuilding confidence, creating a classroom atmosphere conducive to growth. Tailored interventions, aligned with individual needs, empower students to actively engage in their learning journey and achieve their full potential.

Tools for Teachers

A teacher can support students by communicating a plan of intervention, setting goals, and providing supports in subject area classes. “Students protect their self-esteem by resisting instruction. It has failed them in the past; why should this be different?” (Birsh & Carreker, 2018).

Connecting with these students will take time, and educators need to develop the student’s confidence and motivation, in addition to providing interventions to help them become effective readers. Teachers can provide effective evidence-based instruction to help grow the older student into a reader!

A teacher wanting to build on the knowledge from this chapter may be looking for more practice and resources for implementation. Below are resources to assist in building students’ skills and teacher knowledge.

[IES Providing Reading Interventions for Students in Grades 4–9](#) (2022). Detailed recommendation and recourse for each of the recommendations.

[The Meadows Center](#)

- Multisyllable Word Reading Routine for Science and Social Studies Classes
- Partner Reading: An Evidence-Based Practice – Teacher’s Guide
- [Promoting Acceleration of Comprehension and Content Through Text](#)

[The Reading League Compass – Adolescent Literacy](#)

[Word Connections](#) is a supplemental reading intervention program. 40 lessons focus on word reading and decoding, reading comprehension, spelling, and accurate reading of both isolated affixes and multisyllabic words.

Special Considerations for Students with Dyslexia/Persistent Reading Difficulties

Students with dyslexia, even after experiencing targeted interventions such as specialized reading programs, multi-sensory teaching methods, and ongoing support, may still need specific accommodations and assistance. The continued reading challenges can be due to various factors, including the severity of dyslexia, individual differences in cognitive processing, the adequacy of support strategies used, co-occurring learning disabilities, the quality of instructional support, and the student’s motivation levels. This requires a continued accommodations to bridge the gap between skills and the needs in the classroom. The goal of supports should be to prepare students to advocate for their needs by building self-advocacy skills and preparing to navigate life in adulthood. For more information on supporting students and self-advocacy, see Chapter 1.

AT: Dyslexia Supports for Adolescents

Adolescent students with dyslexia can benefit from assistive technology and accessible educational materials to bridge the gap between grade-level content and their reading level. Chapter 7, section AT: Dyslexia Supports, and Chapter 11, AT: Dysgraphia Supports highlight tools to help build this bridge. Adolescent students may use a combination of dyslexia and dysgraphia tools to complete assignments and build independence.

Students can use Bookshare and built-in text-to-speech tools to hear printed text, including proofreading their own work and speech-to-text to organize thoughts or submit

answers. Students and teachers will need to work together to find the right tools to enable independence and will need training and ongoing support to ensure successful implementation. Oklahoma ABLE Tech can provide devices for trial and guidance to help select the right tools.

Key Takeaways

1. When is it too late to teach reading skills?

It is never too late for a student to learn to read. Older students can make meaningful gains in reading with explicit, intensive intervention targeting word reading, fluency, vocabulary, and comprehension. Studies show improvements even for students with persistent difficulties.

2. How do students gain literacy skills beyond 4th grade?

Many adolescents still have decoding and word-recognition deficits; without addressing these foundations, teaching of comprehension skills alone is insufficient. Instruction in multisyllabic word reading, morphology, and fluency is often necessary.

3. Who is responsible for literacy instruction in grades 4th-12th?

Adolescent literacy is a shared responsibility of all teachers. Reading functions differently across disciplines; content teacher support literacy by teaching subject-specific vocabulary, text structures, and writing about reading.

Chapter 9: Defining Dysgraphia

Knowledge Self-Check

1. Can dysgraphia only be identified in a student with dyslexia?
2. Does dysgraphia only include handwriting?

Dysgraphia Definition

Oklahoma defines dysgraphia as:

“A specific learning disability that is neurological in origin. It is characterized by difficulties with accurate and/or fluent handwriting and letter formation. These difficulties typically result from a deficit in the orthographic component of language and motor difficulties that are unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in written expression.”

Students with dysgraphia can be served through a multi-tiered system of support (MTSS) in either the general education classroom or through targeted interventions in other settings. If the student meets eligibility under the Individuals with Disabilities Education Act (IDEA), they may receive intensive interventions through an Individualized Education Program (IEP). This will be explored further in Chapter 11.

Dysgraphia

A specific learning disability of written expression that is neurological in origin. It is characterized by difficulties with handwriting speed, legibility, and/or spelling

Key Characteristics	• illegible handwriting, • decreased writing speed, • difficulty with spatial awareness for letter sizing or spacing, • may or may not include poor spelling and/or working memory
Unexpected Difficulties	• Occurs despite effective classroom instruction
Secondary Consequences	• Avoidance of writing tasks • Negative impact on self-esteem • Problems in written expression including organization of thoughts and syntax



Important: Dysgraphia is a *neurological learning disability*, not a result of poor effort or lack of instruction.

Current evidence suggests that 10-30% of all children have difficulties with writing (Chung et al, 2022). The underlying processing difficulties related to dysgraphia include orthographic coding, working memory, motor planning, and language processing.

Underlying Processing Difficulties		
Area	What It Means	Classroom Impact
Orthographic Coding	Ability to store and recall letter patterns and written words in working memory	Poor spelling, slow writing, difficulty recalling letter sequences
Working Memory	Holding letters and words in mind while writing	Loses place, incomplete words, reduced written output
Motor Planning	Planning and coordinating finger movements	Fatigue, awkward grip, slow or effortful handwriting
Language Processing	Difficulty with phonology, spelling, organization of thoughts, and/or syntax	Difficulty getting thoughts on paper, poor spelling, short choppy sentences

Assessing dysgraphia can be challenging because current laws and assessments do not always capture the full nature of the difficulty. While federal law identifies **written expression** as an area of a specific learning disability, it does not clearly address the **handwriting and spelling (transcription) difficulties** that are often the underlying causes of dysgraphia. As a result, assessment data may overlook key areas of need or misrepresent a student's abilities.

Key challenges in assessing dysgraphia include:

- **Limited clarity in federal law**
 - Written expression is recognized as a learning disability.
 - Handwriting and spelling difficulties, which often drive writing challenges in dysgraphia, are not clearly defined or addressed.
- **No single assessment for dysgraphia**

There is no one test that identifies dysgraphia.

- Best practice involves an interdisciplinary team using multiple sources of information, including:
 - Functional classroom observations
 - Norm-referenced assessment data
 - Review of the student's prior instruction and learning opportunities

- **Limits of writing assessments**

- Many writing tests focus on written expression, such as total words written or sentence structure.
- Handwriting and spelling difficulties may not be scored, which can mask the true nature of the disability.

It is important to remember that a student's **ideas, language, and understanding may be intact**, even when written output is weak. For this reason, the absence of complete assessment data should never delay explicit instruction and targeted interventions in the general education classroom.

Key Takeaways

1. Can dysgraphia only be identified in a student with dyslexia?

Students with dysgraphia can have dyslexia, but dysgraphia can be found independently of dyslexia. Students with dysgraphia may have deficits in many areas of writing.

2. Does dysgraphia only include handwriting?

The Oklahoma definition of dysgraphia includes difficulties with accurate and/or fluent handwriting, letter formation, and secondary consequences in written expression.

Chapter 10: Characteristics of Dysgraphia

Knowledge Self-Check

1. Is dysgraphia characterized by messy handwriting?
2. What distinguishes handwriting illegibility from dysgraphia?

A common myth of dysgraphia is the primary sign being letter reversals or other letter production errors. While some children do make reversals (reversing the direction of letter faces along a vertical axis), inversions (flipping letters along a horizontal axis so the letters are upside down), or transpositions (sequencing letters in a word out of order), these alone are not markers of dysgraphia. These errors are symptoms rather than causes of handwriting problems.

Dysgraphia impacts overall handwriting, writing fluency (rate and accuracy), spatial organization of written work (line orientation, spacing, letter sizing), spelling, and/or higher-level written expression. Students with dysgraphia may have difficulty attaining the following skills:

- Forming letters/numbers accurately. They may appear to "draw" the letters instead of fluently form them from memory.
- Copying and/or forming words from memory. They may have difficulty spelling high frequency and/or grade level words.
- Copying simple sentences from a model using appropriate spatial organization. They may be inconsistent with line placement, use of margins, spacing between words, and/or letter sizing.
- Writing fast enough to keep up in class or being able to accurately transfer notes from the board to paper.
- Organizing thoughts on paper. They may be able to tell you what they want to say but then have a "block" of being able to put thoughts to paper.

- Using correct capitalization, punctuation, and/or word sequence when forming sentences.

Students with dysgraphia may be so focused on *how* they are writing that they can't focus on *what* they are writing. Dysgraphia can lead to poor spelling and difficulty writing age- appropriate sentences, paragraphs, stories, and reports. Recent studies report that 10-30 percent of all children have difficulties with writing (Chung et al., 2022). Dysgraphia often co-occurs with other specific learning disabilities such as dyslexia and dyscalculia; however, it is not caused by these processing disorders.

Signs and Symptoms of Dysgraphia

The University of Waterloo provides this visual example below of a 4th grade student with dysgraphia and dyslexia. Consider the characteristics above such as the spelling of “when,” “think,” or “pencil.” Also, note the *p* on the word “paper” and the student’s letters *t*, *d*, *l*, and *k*. This student is not bringing these letters to the top line or dropping letters like *p* in “paper” or “pencil” below the line.

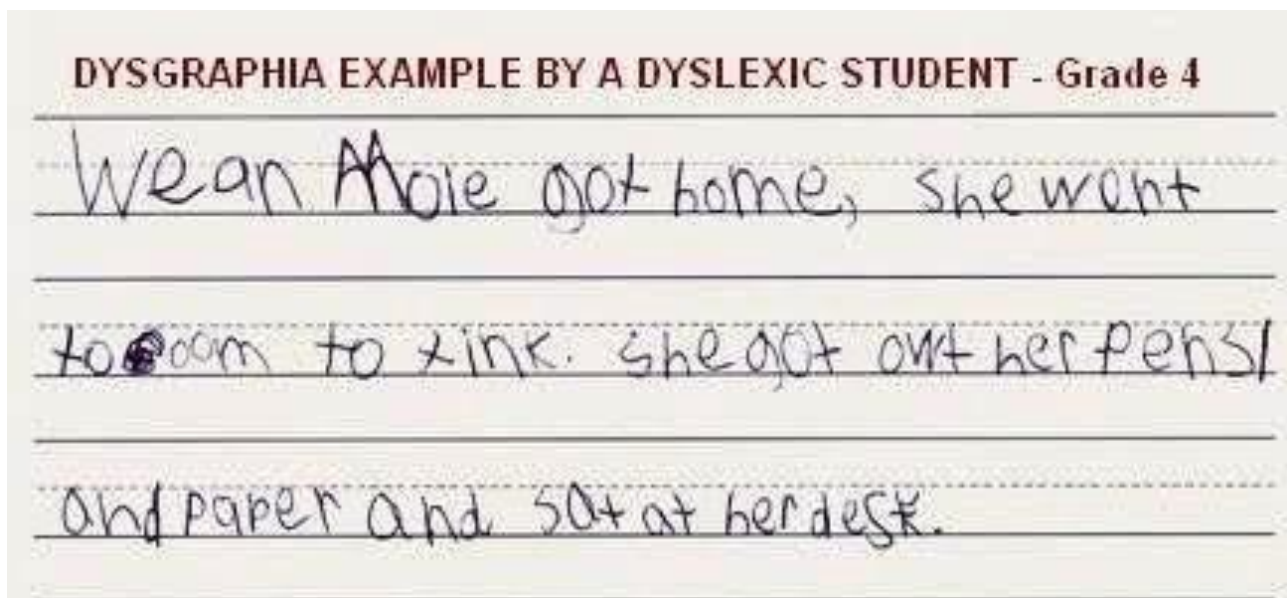


Image: Dysgraphia Example 1 by a student with dyslexia.

(<https://contensis.uwaterloo.ca/sites/courses-archive/1191/PSYCH-312/lecture-content/module-11/module-11a.aspx>)

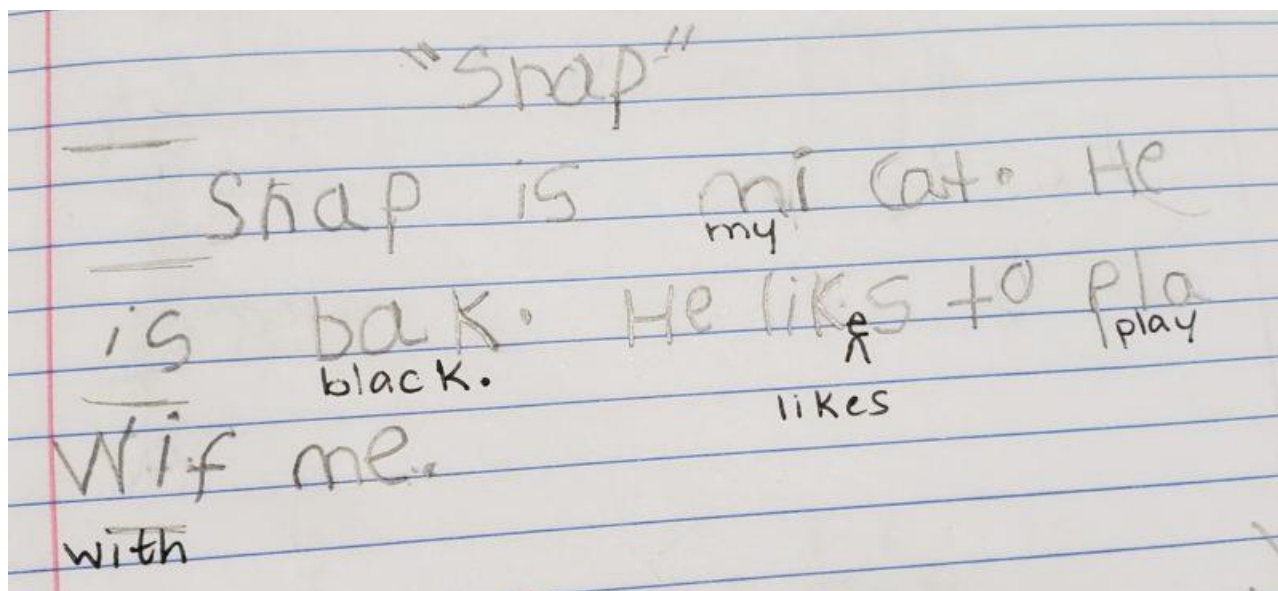


Image: Dysgraphia Example 2 by a student with dyslexia
<https://www.edublox.com/defeating-dyslexia-dysgraphia/>

What to notice in this writing sample:

- Letter height is inconsistent.
- There is little or no difference between capital and lowercase letters.
- The letter p shows awareness it should drop below the line, but the correction appears to happen after the word is written.
- Spacing between words is inconsistent.
- Words are not only too close together.
- There can also be too much space between words.
- Punctuation placement is incorrect.
- Periods are placed in the middle of letters instead of at the base line.

Dysgraphia: Teacher Observation Checklist

See the appendix for a Teacher Observation Checklist. This checklist is designed to assist educators in identifying students who may require additional support or professional evaluation for dysgraphia. It is not a diagnostic tool but serves as a guide to encourage collaboration with families and specialists for appropriate interventions or further assessment.

When a student is experiencing handwriting difficulties and/or a teacher recognizes characteristics of dysgraphia, implementing the MTSS/RTI framework, discussed in Chapter 3, can provide a timely and systematic response. Within this framework, support for students with suspected dysgraphia is delivered through increasingly intensive levels of instruction and intervention. Refer to Chapter 11 for recommended interventions for students.

Key Takeaways

1. Is dysgraphia characterized by messy handwriting?

Messy handwriting may be a visual sign of dysgraphia, although students with dysgraphia can have neat handwriting but struggle in the areas of spelling or written expression. A student can achieve accurate and fluent handwriting.

2. What distinguishes handwriting illegibility from dysgraphia?

Handwriting illegibility is a symptom of dysgraphia. While handwriting illegibility can be the result of lack of instruction, decreased motivation, or rushing through written work; dysgraphia is an identified processing disorder that impacts handwriting legibility, writing fluency (rate and accuracy), spatial organization of written work (line orientation, spacing, letter sizing), spelling, and/or higher-level written expression. It is important to note that dysgraphia is not a result of effort or lack of instruction.

Chapter 11: Effective Instructional Practices for Students with Dysgraphia Across the Continuum

Knowledge Self-Check

1. What areas need direct instruction for intervention for dysgraphia?
2. Will good handwriting come with time for students with dysgraphia?

With a nod to Hollis Scarborough's famous Reading Rope, Joan Sedita has created the [Writing Rope](#) (Sedita, 2019). The Writing Rope depicts the many strands that contribute to fluent, skilled writing acquired through instruction and practice. Each strand contains multiple skills that lead to confident writers. As with the Reading Rope, when any one strand (skill) is not acquired with fluency, it weakens the strength of the entire rope. The rope model includes five strands that can be used to group areas of instruction or intervention (Sedita, 2023).

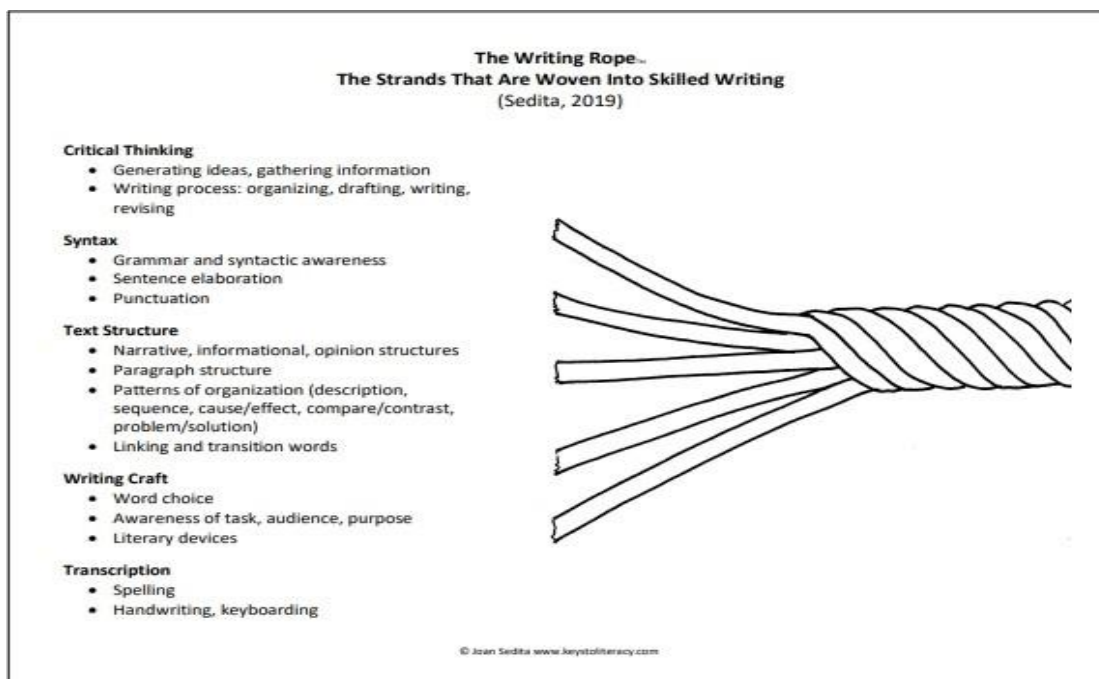


Image: The Strands Woven Into Skilled Writing

Educators wanting to learn more about The Writing Rope can learn from the author in this free webinar.

<https://home.edweb.net/webinar/literacy20221107/>

The work of Berninger, Vaughan, Abbott, Begay, Coleman, Curtain, Hawkins, and Graham (2002) on the nature of written expression deficits led to their model of the “Simple View of Writing,” which is represented by a group of nested triangles. Transcription skills (handwriting, keyboarding, and spelling) and executive functions (attention, planning, reviewing, revising, and self-regulation) represent the base of the triangle and serve as the foundation for writing. Transcription skills and executive functions, together, provide the necessary skills that allow students to translate language and ideas into written symbols for purposes of written expression. Text generation (words, sentences, discourse) forms the top of the triangle. All of these skills occur within short-term working and long-term memory environments. Students with disabilities struggle with some or all of these (Berninger et al., 2002).

Why is Writing Difficult?

Dysgraphia exists on a continuum of severity, similar to dyslexia, autism, or other disabilities. So a student’s instructional needs will also be on a continuum. Educators providing intervention in writing need to recognize students are utilizing both language skills and executive functions. “Writing is

the quintessential ‘mental juggling act’ and thus it takes the longest time to learn” (Moats & Tolman, 2019). Students who are struggling with dysgraphia or foundational writing skills may experience cognitive overload leading to more errors in writing. All skills within writing will need to be taught to automaticity before proficient writing can be expected.

Intervention groupings must align with the level of intensity and areas of deficit needed to accelerate a student’s reading and writing growth. Students who struggle with legibility, automaticity, or fluency may need additional direct instruction.



Check out these resources for Writing Instruction Scope and Sequence:

<https://keystoliteracy.com/wp-content/uploads/2024/07/The-Writing-Rope-Guidelines-for-Instruction-1.pdf>

https://www.pattan.net/getmedia/e2e9cca5-dcec-4d2b-8fc4-2f93efe3ae2e/31.Pattan_Scope_Sequence

Delivering Tiered Dysgraphia Intervention

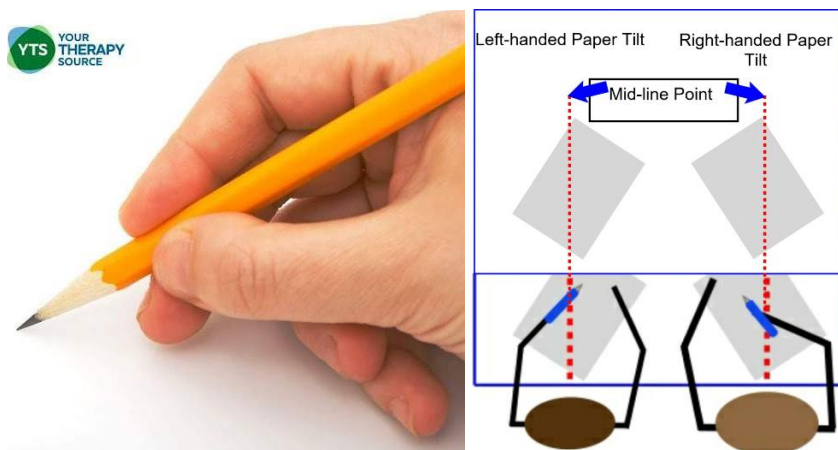
An Occupational Therapist (OT) may be part of the team providing consultation on Tier 2 or Tier 3 interventions in the MTSS model as discussed in Chapter 3. Interventions will be aligned to the student's skills and needs. The need for intervention must not be diminished due to the availability of assistive technology (AT); AT is not a substitute for skill acquisition. Because these students may not qualify for special education, interventions will be provided in Tier 2 or Tier 3 in tandem with the general classroom.

More information on tiered systems of instruction can be found in Chapter 3: Introduction to Instructional Systems.

As mentioned in Chapter 10, characteristics of dysgraphia can be found in a student with characteristics of dyslexia. We have provided information in this chapter on handwriting, spelling, and written expression. Intervention considerations for Tier 2 or Tier 3 will be called out in each area below.

Handwriting

Handwriting is a complex neuromotor skill in which the writer must integrate many cognitive and motor processes simultaneously (Limpo & Graham, 2020). Having control of motor skills includes correct pencil grip, efficient paper position, and even in our digital age, writing with pencil and paper is the predominant mode of writing in early schooling and, in some settings, throughout a school career (Santangelo & Graham, 2016). Pencil grip, or the way writers hold a pencil, contributes to the ease of the writing process, handwriting fluency, and stamina. Students should be encouraged and reminded to use a comfortable grip, such as the “tripod” method, that can be sustained for longer and longer periods of time. In the tripod method, the writer holds the pencil between the thumb and index finger, forming a triangle by resting the pencil against the top third of the middle finger, about an inch from the pencil point (Graham, 2010). Additionally, a variety of pens and pencils should be offered to find one that is most comfortable (e.g., triangle shaped pencils support a comfortable tripod grip, mechanical pencils support a lighter touch, etc.).



<https://teachhandwriting.blog/category/paper-position/>

Paper position also affects handwriting fluency and legibility. Right-handed writers should align the left side of their paper to the center of their body squarely in front of them for manuscript writing. As they learn cursive, they will rotate their paper 45 degrees counterclockwise. Left-handed writers should rotate their paper slightly clockwise and adjust their pencil grip slightly about one and a half inches from the pencil tip. If left handers position their paper like right handers, they may develop pencil grips that decrease their handwriting fluency, speed, and legibility (Graham, 2009). Correct paper position enables students to write comfortably and see what

they are writing. It also allows the non-writing hand to move the paper up so the writing hand elbow can stay in the same position. During writing, the paper should move up, rather than the writing hand moving down. Teachers should encourage proper grip and paper positioning for writing early, as it is difficult for students to unlearn inefficient motor patterns later.

Numerous complimentary resources are available at [Free Downloads – TPG Creations/The Pencil Grip, Inc.](#)

Interventions for Fine Motor Skills

Students with fine motor deficits will benefit more when intervention of fine motor skills are part of direct handwriting instruction. Students may benefit from activities that build on the overall fine motor skills and improve hand strength.

- Activities for fine motor skills include the following.
- Molding or rolling clay with hands.
- Using pegs or toothpicks to make designs in clay.
- Scrunching newspaper in one hand to form a ball.
- Picking up small objects with tweezers.
- Strengthening muscles with clamps or rubber bands.

Visual-spatial skills include not only the correct formation of letters, but also the alignment and spacing of letters and words, and the placement of letters on the page. The correct formation of letters not only enhances the efficiency of forming letters, but it can also help to improve handwriting speed and the readability of writing.

Letter Formation

Because manuscript text (print) most closely mirrors the print of the written page, careful teaching supports literacy development, particularly in learning letter symbols (James & Engelhart, 2012; Longcamp et al., 2005) and orthographic coding (Berninger et al., 1991).

Writing expert Steven Graham (2010) recommends four considerations for grouping letters for instruction, and these considerations can be used for both print and cursive. First, common formation and motor approaches such as:

1. Straight lines (l, i, t).
2. Curved lines (c, a, d, g, o, q, f).

3. Straight and curved lines (b, h, j, m, n, p, u, e).
4. Slant lines (v, w, x, y, z, k).

Second, letters that appear most frequently in print should be taught prior to those that are less frequent (like letters q and z). Third, introduce easier to produce letters prior to more difficult ones (k, s, or y). And fourth, do not group letters easily confused with each other in the same unit (separate b and d, and separate n and u). Additionally, teaching manuscript writing with a “one-stroke” (or continuous stroke) approach provides some of the same benefits of cursive, particularly reducing pencil lifting, which causes decisions about where to place the pencil for the letters in “ball” or “stick” (as in the letters b, d, p, q). These grouping considerations are similar for cursive. Lower-case cursive letters can be grouped by the “approach stroke” (the connecting line that leads up from the base line to the letter form) Such as “swing-up, stop” for cursive letters i, t, p, u, w, j, r, s. “Push up and over” letters m, n, v, x, y, z. “Curve up, over, and stop” letters c, a, d, g, o, q. and “Swing way up, loop left” letters l, h, k, b, f, e (Birsh & Carreker, 2018).

Graham also recommends integrating teaching handwriting with letter names, which is a multisensory approach. Handwriting warmups should include naming and identifying the focus letters. Teachers model the letter formations and refer to charts or cards with which number arrows show the order and direction of the strokes. Other multisensory approaches include verbal directions of the process. For example, when teaching the letter “m,” the teacher would demonstrate while saying, “m, /m/, pull straight down, push up over, push up over, /m/, m.” Students would echo while tracing a model, several times reinforcing the letter form, sound, and name. As children progress, they drop the formation narrative, because it may take up more working memory, but they continue naming the letters while writing them and circling their best efforts. Because of the additional cognitive load of the narration of letter formations, there is a debate on their effectiveness with some researchers advocating the narration (Gillingham & Stillman, 1997; Slingerland, 1971) and others finding no research-supported benefit (Graham, 2009; Santangelo & Graham, 2016).

As children work with lined paper and with the teacher’s guidance, they note and discuss the similarities and differences on how the focus letters are formed. Teachers can provide instructive feedback with highlighters to point out spots that may need more attention, such as an uncrossed ‘t’ or an ‘a’ or ‘o’ that is not closed. The teacher highlights these spots, and the writer corrects them by tracing the highlighted marks.

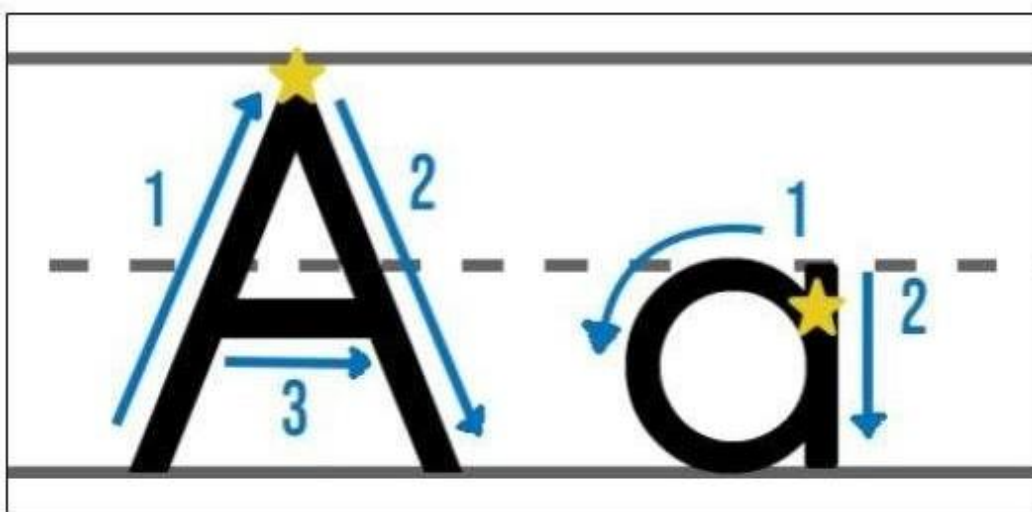


Image: Line Directions in Writing Letters

Highlighting the midline to the baseline on lined paper also supports letter positioning. Spacing between words is taught with finger spacings or popsicle stick types of manipulatives. Handwriting practice progresses from single letter practice to words, phrases, and sentences working on fluency to see how many words students can write correctly during a timing of three minutes. Ultimately, the best practice to develop writing fluency is frequent writing, self-evaluation of best efforts, and teacher feedback.

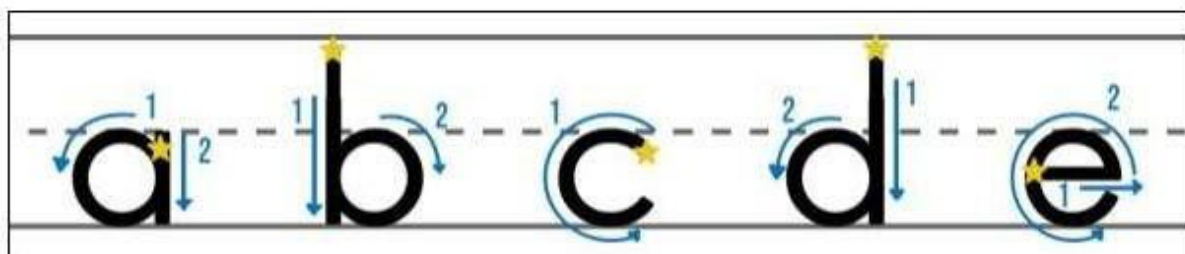


Image: Handwriting Lowercase Letters with Midline and Baseline

Interventions for Letter Formation

Students who struggle with legibility, automaticity, or fluency may need additional direct instruction. An Occupational Therapist (OT) may be part of the team providing consultation on Tier 2 or Tier 3 interventions. Intervention should be aligned to the instruction in the classroom with consistent terminology, verbal directions, and close supervision.

For students who are not successful after Tier 1 instruction, consider additional interventions like the ones listed below.

Letter Formation

- Practice writing letters, numbers, and shapes in the air with arm, hand, or finger movements and use other multi-sensory techniques and manipulatives to help with letter formation. Referred to as air writing or sky writing.
- Practice moving arm back and forth across a page without a pencil.
- Play with clay and other modeling materials to practice forming letters.
- Alignment of Letters and Use of Lines
- Trace letters using models that include numbered steps and directional arrows.
- Write letters independently after tracing.
- Use verbal directions to guide the directionality of the letter formation.
- Using lines allows for proper letter sizing and formation. This also includes an awareness of margins.

Spacing Between Letters and Words

- Use proper spacing between words and letters to produce easy-to-read and organized written material.
- Use paper with marks indicating correct spacing.
- Use small popsicle stick spacers.
- Have meaningful independent writing.
- Transcription
- Copy sentences containing targeted letters.
- Focus on fluency, not just letter formation.



[Literacy LIFTER | Iowa Reading Research Center - The University of Iowa](#) free tools for teacher and caregivers for supporting students with early writing and reading skills.

Transcription

Simply put, transcription is getting ideas onto the page or screen through handwriting, or typing, and spelling (Berninger et al., 1996; Cella, 2022). For developing writers, orchestrating handwriting and spelling is initially demanding as young writers contend with holding on to their ideas while

simultaneously considering both spelling and letter formation. This orchestration leaves little cognitive space for writing processes such as planning and revising (McCutchen, 1996). When children have difficulty with transcription skills, they may avoid writing and develop a negative mindset about themselves as writers (Berninger et al., 1996). Because dysgraphia is often identified as extreme difficulties with handwriting, it is critical that time for handwriting instruction is built into the school day, working toward fluent transcription so there is more cognitive space for composition.

Although there is no agreement in the research on the benefit of cursive or manuscript (print) (Schwellnum et al., 2012) text, there are identified advantages for each. Forms of manuscript letters most closely resemble the print readers see in books and other texts, so many people advocate its use as the first form of handwriting. Because cursive letter forms are more unique from each other, there are fewer reversals of letters such as 'b' and 'd' or 'u' and 'n'. Cursive also has fewer pencil lifts in its formation, so again, there are fewer instances of letter reversals. Whenever manuscript or cursive writing is introduced, direct instruction is needed until accuracy and fluency is achieved.

The Oklahoma Academic Standards (Standard 2) begins with handwriting instruction in print (manuscript) in grades PreK through Grade 2 and cursive beginning at Grade 3. Districts can choose to introduce cursive in PreK through 2. Handwriting needs to be taught to automaticity so writers can focus on extending ideas, planning, and revising. This teaching can be achieved with 10-20 minutes per day 3-5 times per week of excellent modeled and explicit handwriting instruction in the general classroom (Graham, 2009). Therefore, all students need to receive effective, explicit instruction in handwriting processes to develop control of motor skills while integrating visual-spatial and language processing skills, "to become skilled in accurate, legible, and automatic handwriting to complete writing tasks at school and outside school" (Birsh, & Carreker, 2018).

Note-Taking

Note-taking requires handwriting speed plus the ability to comprehend language simultaneously. "Handwriting automaticity is correlated with the quality of note-taking when listening to a lecture, and further that the quality of note-taking is a predictor of test performance" (Decoste, 2014). Students with dysgraphia will need direct instruction not only in handwriting but in efficiently taking notes. Students may benefit from guided notes or an outline with keywords. Graphic organizers, or note-taking templates, can assist students with organizing information. The skill of note-taking helps a student

consume knowledge and organize their information for studying or writing tasks.

Keyboarding

In the digital age, technology and computer use is becoming an increasingly in-demand skill. In Standard 8 of the Oklahoma Academic Standards Independent Writing Objectives for grades 2-12, students are given the option to type their writing. Students in grades 3-8 are expected to type some of their responses on the Oklahoma School Testing Program ELA assessment. Therefore, a suggested progression of keyboarding skills is included in the [OAS ELA Appendix](#).

Keyboarding requires direct instruction and is considered most appropriate in 3rd-5th grades. At these grades, students maintain fine motor and literacy skills and have sufficient attention for lessons. Students should participate for 30-40 minutes for 36 weeks (Decoste, 2014). However, keyboarding should not be seen as a replacement for high-quality handwriting instruction. While typing can make it easier to write by alleviating the frustration of forming letters, handwriting is a vital part of a person's ability to function in the world.

When designing instruction, educators should determine the appropriate method of response (handwriting or keyboarding) based on the skill to be measured and practiced. For instance, when we are seeking to evaluate students' compositional skills, keyboarding may be an appropriate response method. However, when we are seeking to measure student handwriting skills and spelling, paper-and-pencil writing may be the more appropriate response option.



For students needing keyboarding as an accommodation, instruction may need to happen at an earlier age. If handwriting is laborious, structured keyboard instruction may benefit the student. But access to keyboards without structured instruction will not provide a meaningful accommodation.

Spelling/Orthography Instruction

“Good spellers need only one of few exposures to a word to remember it. Unfortunately, students with dyslexia often lack this ‘fast mapping’ of sounds to symbols. Reading involves creating maps between written words based on visual inputs and spoken words, based on auditory inputs” (Beringer & Wolf, 2009).

-Virginia Beringer

Spelling is a complex process for students with dyslexia, dysgraphia, and other literacy difficulties. Struggling learners do not benefit from memorizing lists of words for weekly spelling tests, as this process largely relies on rote memorization and visual recall. Instead, all students, but especially those with dyslexia and dysgraphia, should be taught using factors governing spelling. “Approximately 50% of all English words can be spelled accurately by sound-symbol correspondence patterns alone, and another 36% can be spelled accurately except for one speech sound (usually a vowel)” (Moats, 2009).

The action of writing words is related to sound sequences, letter patterns, and morphemes (base words and affixes). Spelling involves knowledge about the sounds of the language, the most frequent and reliable letter patterns, and rules of English orthography, morphology, and word origins.

A Structured Literacy approach to spelling should teach students the common orthographic patterns of English (phonograms) as well as the use of affixes and spelling rules including etymology, morphology, and orthography. Structured Literacy approaches can be appropriately taught to very young students. “For young children, research clearly indicates that spelling supports learning to read, and for older children, it’s likely that learning about the meaningful relationships between words will contribute to vocabulary growth and reading comprehension” (Moats, 2005).

Principles of English Spelling – How Reading Supports Spelling (Moats, 2005)

A word's language of origin and history of use can explain their spelling.

A word's meaning and part of speech can determine their spelling.

Speech sounds are spelled with single letters and/or combinations of up to four letters

The spelling of a given sound can vary according to its position within a word.

The spellings of some sounds are governed by established conventions of letter sequences and patterns.

Putnam concludes in her article, *Using Research to Make Informed Decisions About Spelling Curriculum* (2017), "The research and support for using word study as part of an integrated spelling curriculum is significant and compelling, yet many classrooms are still using traditional spelling methods, emphasizing rote memorization and rule-driven instruction" (Fresch, 2003, 2007; Putnam, 2017; Schlagal, 2002).

Traditional Spelling Instruction	Recommended Spelling Instruction
• Familiar to teachers and parents. • Assigned weekly list of words. • Encourages memorization. • Weekly tests. • Does not generalize to their writing.	• Focuses on word study. • Students learn spelling patterns that can be generalized to other words. • Work knowledge can be generalized to students' writing.

Interventions for Spelling

Students who continue to struggle with spelling need intervention under the MTSS model. Spelling is closely related to reading instructions. If a student has poor spelling and reading, the spelling may be related to dyslexia identification. Students with dyslexia also benefit from direct spelling instruction integrated into their reading intervention. Spelling intervention enhances reading skills, but spelling is more difficult to learn than reading. Skills that have been solidified in reading may not be as concrete in spelling.

Analyzing the errors of spelling can help an educator identify the skills that need direct instruction. “Students’ spelling errors provide teachers with insights as to the progress of students’ understanding of the patterns of the language” (Birsh & Carreker, 2018). After the student completes a spelling task, teachers review the errors, not just for correct answers, but through error analysis. To support this analysis, educators should consider the following.

- Are all the sounds represented in the word?
 - e.g., if the word is “flip” and the student writes “fip,” not all sounds are represented. However, if the word is “flip” and the student writes “flib,” all sounds are represented, but one sound is incorrect.
- Are there phonological confusions?
 - e.g., the word is “train,” and the student writes “chrain.” There is phonological confusion in the /tr/ blend versus /ch/ phoneme.
- Are basic letter/sound connections made?
 - e.g., if the word is “cake,” but the student spells it “cak,” then all basic letter/sound connections are made, but conventions of the long /a/ are missed.
- Are spelling conventions in place?
 - Silent /e/ vowel teams and spelling rules (e.g. _ck and doubling rule, etc.).
 - e.g., if the word is “live,” and the student writes “liv,” the spelling convention of short /i/ is correct, but the spelling rule that no words end in ‘v’ is missed.
 - e.g., if the word is “badge,” but the student writes “baj,” errors in spelling convention are in place.

- Are meaningful parts represented?
 - e.g., if the word is “jogging,” and the student writes “joging,” then all meaningful parts are represented and the suffix is understood.

After analyzing errors, students can be grouped, based on the area of difficulty identified above, to provide instruction based on spelling proficiency. “Small-group instruction targets a need, whether that need is in developing phonological skills, learning a spelling pattern or rule, or applying orthographic or morphemic knowledge to spelling.” (Birsh & Carreker, 2018). Spelling is meaning driven and needs systematic, explicit instruction based on the following guiding principles.

- Phoneme-grapheme correspondence.
- Letter order and sequence patterns or orthographic conventions.
 - Syllable types.
 - Orthographic rules.
 - Irregular words.
- Position of a phoneme or grapheme in a word.
- Meaning (morphology) and part of speech.
- Language of origin (Moats, 2005).

Students will need explicit instruction and multiple opportunities to practice until the student masters the skill or pattern. Students need word practice and meaningful word applications in writing. Developmental spelling inventories can be used to determine where to begin explicit instruction. Consult your district for spelling inventories provided through professional development opportunities such as LETRS, AIM Pathways, or [Acadience Spelling](#).



Students cannot rely on spell checkers until they have achieved basic spelling skills. This achievement happens around 5th grade for typical students. Students who rely on spell checks will need additional proofreading help and instruction on implementing spell checkers.

Written Expression

Effective writing instruction addresses language processing skills, such as sentence structure, syntax and semantics. Expressing thoughts in writing is often stressful and overly complicated for a student with dysgraphia or dyslexia. It can be both taxing and time-consuming. Omissions, including

leaving out words such as conjunctions, plurals, and word endings, are common errors. Some students may resort to the use of simplified vocabulary in lieu of more complex vocabulary that is used orally.

Researchers have provided evidence that, “fluency in handwriting is strongly related to the ability to produce complex written text.” In *Handwriting Research: A Guide to Curriculum Planning* (Zaner-Bloser, 2009). Students struggling with written expression may need instruction in components of early writing skills in addition to support with written expression.

Feedback Strategies

Direct and immediate feedback on student work can support improvements in student learning. Some ideas for instructional strategies for feedback are provided below.

- **Compliments & a Wish** - Provide at least two compliments in relation to a student’s writing and one wish for how they can improve. Alternate the focus of writing assignments (e.g., neatness, spelling, grammar, organization, etc.).
- **Red Words + Current Focus (Ex: Transition Words)** - Red Words include spelling/sight words the student has already mastered. When providing feedback to students on spelling, focus on words the student has already mastered and is being held accountable for. Use misspelled words in a student’s writing to drive differentiated instruction.
- **Checklists and Visuals** - Visual rubrics, checklists for proofreading, or similar tools can be used by students to provide immediate feedback, monitor their own learning, and self- correct.

Interventions for Written Expression

Students with dysgraphia, or with a writing intervention, will need direct instruction in the writing process (planning, drafting, revising, and editing) and writing modes (narrative, informative, and opinion). Writing instruction in the classroom and intervention settings can be taught using text from science and social studies allowing students to engage with grade- level materials. The focus of intervention should be on quality, not the quantity, of the writing. Scaffolding and support can assist students in the cognitive load needed to “juggle” writing demands. One genre should be taught, modeled, or practiced at a time, needing coordination across the subjects.

After observation, writing samples for composition intervention will begin in one of three areas: sentence, paragraph, or longer compositions. The Oklahoma Academic Standards provides grade level expectations in the writing process (Standard 2) and writing modes (Standard 3). Older students with dysgraphia or writing deficits can make progress in written expression.

Instruction beginning at the sentence level is the foundation of the composition. “If a student is not proficient in crafting sentences, the student's ability to construct coherent, unified paragraphs and compositions will be significantly compromised” (Birsh & Carreker, 2018).

Sentence Activities

- Manipulate words and phrases on cards to build sentences.
- Complete sentence and sentence fragments.
- Expanding sentences.
- Edit run-on sentences.

As a student develops the proper sentence usage, their intervention transitions to skills for paragraphs.

Paragraph Activities

- Identify parts of paragraphs in mentor texts.
- Provide prompts that are specific and focused.
- Paragraph frames.
- Movable sentences.
- Graphic organizers.
- Color-coding sentences.
- Deconstructing paragraphs.

Students with proficiency at the paragraph level then transition to longer writing assignments. The activities for paragraphs overlap with **longer compositions**.

- Identify parts in mentor texts.
- Provide prompts that are specific and focused.
- Composition frames.
- Graphic organizers.
- Color-coding sentences.
- Deconstructing texts.

Considerations for Special Situations

Multilingual Learners

There is little research on bilinguals with dysgraphia who have two different writing systems, but writing systems are different from orthographies, and different writing systems reflect fundamental variations in writing-language relationships (Wilson et al., 2012). Therefore, educators will need to begin with foundational writing skills (as found in OAS Standard 2) when working with students from non-alphabetic languages.

For more on English Learners, please see Chapter 16: Special Population Considerations.

Twice Exceptional Learners

As a reminder, twice exceptional (2E) students are students identified as gifted and talented as well as identified having a disability. One consideration for this population is to ensure students receive both gifted services and services for the dysgraphia. Koifman described the potential for 2E students to be, “distinguished by motor disinhibition, inability to concentrate long, communication difficulties, and conflicts with their parents, teachers, and peers” (Koifman, 2022). Gifted students may think quickly, and if they also have characteristics of dysgraphia, will struggle with transferring thoughts on paper effectively. This can be very frustrating for students and may exacerbate the aforementioned behaviors.

Strategies for these students may include strength-based approaches, including when developing a Section 504 Plan or Individualized Education Program (IEP). Gifted students, “may feel stigmatized by deficit-focused accommodations” (pg. 202) such as, “coping with the disability,” rather than

focusing on students' talents and allowing the student to demonstrate mastery of the content in a variety of ways not including handwriting (Willard- Holt et al. 2013 in Millet & Rinn, 2015). If the standard addressed is handwriting specific, provide scaffolding for the student to first demonstrate their understanding of the topic being written, leading up to addressing the writing standard.

For more information on twice-exceptional students, see Chapter 16: Special Population Considerations.

AT: Dysgraphia Supports

Handwriting instruction also includes posture, pencil grip, tool selection, and positioning. To improve pencil grip, students and teachers can explore pencil grip tools to assist in improved finger positions. Proper position is important for automaticity and legibility contributing to better spelling, writing, note taking, and comprehension. It also contributes to stamina as proper grip is less fatiguing.

- Use of manipulatives to help with letter formation.
- Low-tech assistive technology examples:
 - Pencil grips
 - Paper with raised lines (for young learners).
 - Paper with large spaces between the lines or highlighting.
 - Graph paper for mathematics.
 - Slant boards.

Students with dysgraphia affecting their language processing additional assistive technology and accessible educational needs (AEM) needs. Graphic organizers will help students prepare their thoughts before beginning the writing process.

With the integration of computers in the classroom, students have access to many built-in tools for spell checking, grammar, and predictive text. Students struggling with dysgraphia or dyslexia may benefit from using these programs, but they will need instruction on them to be able to apply their use independently. Programs with additional support may be necessary for some students with greater needs.

Common Assistive Technology (AT) Tools to Support Students with Dysgraphia	
Low-tech	Pencil Grip Wide rule paper Whiteboards with dry-erase markers
Mid-tech	Speech to text Word prediction (built into the device) Digital typewriters (Neo 2) Pen scanners (C Pen Reader or IrisPen) Cursive wizard Handwriting wizard
High-tech	One Note Notability Scanning Co:Writer Grammarly Immersive Reader (picture dictionary and part of speech highlighting)

Students and teachers will need to work together to find the right tools to enable independence and will need training and ongoing support to ensure independence. They will need training and ongoing support to ensure successful implementation. Oklahoma ABLE Tech can provide guidance and trial devices to assist in matching student needs to the proper tool.

Key Takeaways

1. What areas need direct instruction for on intervention for dysgraphia?

Students will need intervention in fine motor, visual/spatial, and language processing areas based on the identification of needs. Some students will need support in all three areas while others will need isolated work.

2. Will improved handwriting for students with dysgraphia come with time?

Direct handwriting instruction is needed for all students, but students with dysgraphia will require additional, systematic, cumulative instruction and practice to achieve accuracy and fluency.

Chapter 12: Defining Dyscalculia

Knowledge Self-Check

1. Do children who reverse or confuse numbers have dyscalculia?
2. Will my local school diagnose dyscalculia?

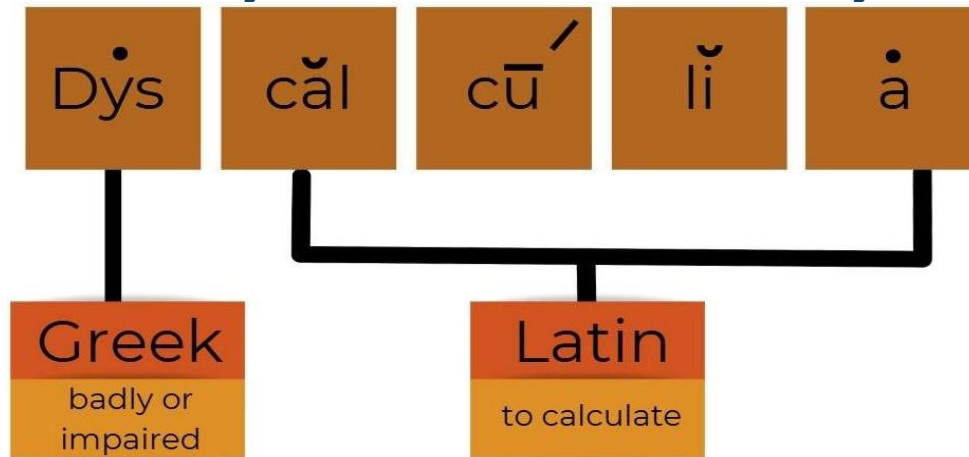
Dyscalculia Defined

The Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5), is a widely recognized handbook used by mental health professionals to diagnose mental disorders. It is published by the American Psychiatric Association (APA). In the DSM-5, dyscalculia is classified under Specific Learning Disorder (SLD) with impairment in mathematics (Code 315.1). It is a neurodevelopmental disorder of biological origin, characterized by persistent difficulties in understanding numbers, mathematical reasoning, and calculating, which are significantly below age level despite targeted intervention (American Psychiatric Association [APA], 2013). Dyscalculia is a specific learning disability in mathematics. The Individuals with Disabilities Education Act (IDEA) defines a specific learning disability as a disorder in one or more of the basic psychological processes involved in understanding or using language, spoken or written, which may manifest as difficulties in listening, thinking, speaking, reading, writing, spelling, or performing mathematical calculations ([34 C.F.R. § 300.8\(c\)\(10\), 2006](#)).

“Dyscalculia is a neurodevelopmental learning difference which can co-occur with a range of other specific learning needs. Dyscalculia can be described as a specific difficulty in understanding number and number processes which persists despite the provision of appropriate learning opportunities” (Education Scotland, 2022).

-Scottish Working Definition of Dyscalculia

What is Dyscalculia and How Do You Say It?



Video Link: [How do you say Dyscalculia?](#)

Analysis of the Word Dyscalculia	
Number of Syllables?	5
Number of Morphemes?	2
Stress or accent on which syllable?	3rd
Analysis of Syllable 1	Vowel Y sounds like short i, read as /d/ /i/ /s/
Analysis of Syllable 2	Closed syllable with a short vowel sound, read as /k/ /a/ /l/
Analysis of Syllable 3	Open syllable with a long vowel sound, read as /k/ /yu/ or /k/ /oo/
Analysis of Syllable 4	Open unaccented syllable with a short vowel sound, read as /l/ /i/
Analysis of Syllable 5	Schwa, unaccented syllable, read as /u/

“Dyscalculia is considered a neurocognitive developmental disorder, which implicates underlying cognitive processes-some math specific and other of a more general nature, which include linguistic and visuospatial functioning and/or visuomotor coordination, visual and verbal working memory, attention, and language functions. Not yet fully understood, these complex processes reflect ways that neuroscience currently accounts for varying profiles of math learning disabilities.”

-Butterworth et al., 2011

“The only agreed characteristic is a long-term persistence struggle to learn number facts” (Geary, 2011).

-Dr. David C. Geary

As technology becomes an increasingly important part of our lives, many jobs now require math skills. Students who struggle with basic math are more likely to face challenges and have fewer career options (The IRIS Center, 2023). Because of this, teachers need to know how to help students who have trouble with math and when to shift in strategies to support those learning with dyscalculia.



Identifying dyscalculia is complex and may be problematic across the lifespan of the individual.

Each student learns differently. Those with dyscalculia may exhibit a variety of traits that affect their performance in math, such as the following.

- Has trouble processing information.
- Has difficulty identifying key information in math in word problems.
- Finds it hard to turn information into a math expression or equation.
- Has trouble staying focused.
- Struggles to choose a good way to solve problems.
- Has weak reasoning and problem-solving skills.
- Solves problems but does not always verify that each step is complete.
- Solves problems but does not always question if the answer is reasonable.

- Has gaps in basic math facts and calculation skills.
- Struggles with memory and vocabulary.
- Finds it hard to solve problems with many steps.
- Has weak visual and spatial skills.
- Struggles to read about math.
- Has trouble understanding math language or vocabulary.
- Finds it hard to understand math concepts and make connections to procedures.
- Feels anxious about math.
- Shows learned helplessness: low motivation and passive behavior.
- Attributes outcomes to external factors beyond control, such as luck.

While number reversals are possible for children with dyscalculia, they are not a hallmark sign. Students learning with Dyscalculia demonstrate difficulty processing the meaning of mathematical relationships. Students with dyscalculia primarily have issues with math calculation, including foundational skills such as subitizing and estimation. Subitizing is the automatic recognition of a pattern, such as dots on dice or dominoes. Students who struggle with estimation lack a concept of magnitude.

Identifying dyscalculia and understanding how it impacts a child's educational experience can be very important to the learner's well-being and their family. The information gathered during the identification process forms part of the ongoing monitoring of the child's progress and the level of required support.

For more information explore Made for Math Podcast Episode: [Knowing the Signs of Dyscalculia](#)

Recognizing Dyscalculia

Educators and providers use several terms when referring to dyscalculia. The chart below shows how these terms relate to who can identify them, the services that may be provided to the student, and the potential tools available for identification.

What	Who	Services	How
Risk for characteristics of Dyscalculia	Certified Educator	General education and intervention supports	OSDE-approved screening Assessments
Identification of Specific Learning Disability (SLD) in Math (Dyscalculia)	Certified school psychometrist, certified school psychologist	Special education services provided through an Individualized Education Program (IEP).	Comprehensive evaluation provided by a qualified examiner and aligned to IDEA.
Diagnosis of Dyscalculia	Clinical/neurological psychologist	Clinical and or medical practice	Comprehensive evaluation provided by a licensed examiner and aligned to the DSM-V

In the chart above, risk and identification are terms used within the school setting. A student is not required to have an outside diagnosis for schools to use the terms “dyslexia, dysgraphia or dyscalculia” (see [#SayDyslexia in Schools](#)), to provide intervention supports, or to evaluate for special education services. Additionally, schools do not have the capacity or obligation to “diagnose” dyscalculia; rather, they will determine if the student meets key eligibility indicators to be identified as a student with a specific learning disability in Mathematics. Outside the school setting, a parent may seek assessments from a Certified Academic Math Practitioner (CAMP) or a Certified Academic Language Therapist (CALT) who has specialized training in Multisensory Math Instruction. These specialists may provide support for students with dyscalculia, conduct informal diagnostic assessments, or provide targeted interventions. Parents should first seek assessments and services from within their child’s school. Assessments from outside providers, including the specialists mentioned in this paragraph, may not be sufficient for determining eligibility for an Individualized Education Program

(IEP) or a Section 504 Plan.

For more information on the processes of mathematics and characteristics of dyscalculia, see Chapter 13: Characteristics of Dyscalculia.

The Math Brain

Effective identification and intervention for students at risk of math failure depends on matching targeted supports with individual students' neurological profiles. To do this successfully, educators should leverage the Oklahoma State Standards, District MTSS plans, and Math Proficiency Act Guidance, and understand how the brain processes math, particularly for students who are overwhelmed or have dyscalculia. By viewing behaviors and communication as part of a larger puzzle and taking a therapeutic perspective, educators can design interventions that truly build proficiency. Increasing the amount of ineffective intervention strategy does not yield progress and may increase student stress instead, matching methods to how the brain learns is key to success.

Researchers have confirmed, through brain imaging experiments, that there is a narrow strip in the right and left hemispheres, located in the parietal region, that is stimulated by numbers. Simple mental calculation is the best way to stimulate this region, and its activity occurs whether numbers are presented as dots, spoken as words, or written as Arabic numerals (Dehaene et al., 1998). This region is considered plurimodal and not tied to a specific sense for retrieval but lies in a neurological intersection where multiple routes can stimulate activation. When retrieval is not tied to a single sense, it is important to develop responses across multiple modalities when working on retrieving an abstract construct (Dehaene, 2011). This is why multimodal, simultaneous multisensory routines in mathematical learning are beneficial for all learners and are required for those with lower activation in this area. The specific region of the brain is referred to as the horizontal part of the intraparietal sulcus (hIPS) (Dehaene et al., 2003). Students with dyscalculia may have low activation in this region and, therefore, depend on distributed practice spaced over time and delivered through explicit, sequential, and multisensory methods to build linkages for successful automatic retrieval of numbers for recognition and simple mental calculation.

With regard to quantity, not merely number recognition, but the concept of mathematics allows children to explore the amount of a substance and relate it further to magnitude. Children in preschool can match numbers to other representations, such as a dice pattern, and begin talking about concepts of

more/less and big/small. Researchers discovered that some arithmetic calculations require focused attention on quantities, while others require only rote memorization of arithmetic facts (Dehaene et al., 1999). In the investigation, it was found that students can either retrieve calculations from verbal memory or compute them by manipulating quantities. Memorizing multiplication facts is an application of rote memory and verbal memory. Students learning math with dyscalculia or any student with a learning profile indicating a weakness in verbal memory or processing will not find success in drills for memorization but will depend on building a near point reference to leverage such as having a warm up of completion of the multiplication table to reinforce distributed practice and then allowing the student to think deeply about the new learning in a math class while using the tool they have created. As students practice skills, an area of the left hemisphere known for language processing is increasingly stimulated, while activity in the hIPS region decreases (Dehaene, 2011). Through intentional distributed practice, the student builds retrieval accuracy and increases automaticity as the angular gyrus is activated. Researchers discovered that fluent retrieval of facts, such as multiplication, depends on the strength of our language centers and that coordination across the brain is required for math calculation (Dehaene, 2011). This is why students at risk for math failure have many characteristics, and their support must be aligned with their weaknesses. If a child has low activation in the hIPS, they may appear not to understand that 6 is more than 5 and may require long-term support.

Students with dyslexia have demonstrated weaknesses in language-processing regions and often struggle to memorize multiplication facts or achieve automaticity in mental math calculations. With a known deficit in language and an understanding of the math brain, we now understand why. Educators can embrace multimodal opportunities and leverage near-point references to support access to grade-level learning in the math classroom. Also, when students have known struggles with executive functioning, it is understandable that they may become disoriented in procedural mathematics and require consistent language and multiple means of engagement to achieve fluency. For more information on the co-occurrence of learning differences across our population, see Chapter 16: Special Population Considerations.

By learning more about the brain and the science of how it learns, we can begin to connect the behaviors observed in mathematics learning and design environments where all children engage deeply with mathematics.

Universal design for learning and the exploration of multiple means of engagement and expression are important for supporting students from diverse populations. Students will leverage mathematical thinking in all classrooms as they reason in language courses, explore the magnitude of time in history and government, apply calculations in chemistry and magnitude in micro and macro sciences, apply geometry in angles in the gymnasium or statistics in sports, and music is mathematics shared through sound. Math learning must be designed to align with, support, and extend the architecture of our brain, because fighting against it is futile.

"The classroom should be our next laboratory."

– Stanislas Dehaene, Cognitive Neuroscientist

Math Proficiency Act

The Math Proficiency Act, [70 O.S. § 1210.901](#), is designed to identify students who have trouble with math, including those who might have dyscalculia. All public-school students in grades two through five will take math skill screenings at the beginning, middle, and end of each school year. These tests assess skills such as number sense, arithmetic, accuracy in math reasoning, and calculation fluency to identify whether a student might have difficulty with math. Teachers give these screenings three times a year: at the start, middle, and end of the school year. If a student is at risk for math difficulties, the school district must notify parents or guardians in writing. Students who are identified as at risk receive an Individualized Math Intervention Plan (IMIP) that explains the support they will receive and how their progress will be tracked. For more details about Oklahoma's Math Proficiency Act, visit [Math Achievement and Proficiency Act](#).

Risk vs Identification of SLD

Screening for risk of dyscalculia is casting a wide net into the elementary population and looking for any indication of math struggle. Students flagged as at risk are in need of additional support through the district's designed multi-tiered system of supports. Math is hierarchical and students are developing across a continuum leading to increasing expectations across the grades. In some grades a behavior may be developmentally on track but for that behavior to be carried into higher grades becomes an indication of a student being at risk for math failure or the development of math anxiety. For instance, counting using fingers is developmentally appropriate in the early

grades and serves as a concrete example for instruction but in high school a student using their hands to retrieve and navigate the nines times tables is a sign of a student at risk for math failure because developmentally we would expect automatic retrieval of the nines times table by middle school.

In 2025, the Oklahoma State Department of Education tried twice to find valid and reliable dyscalculia screeners that general education teachers could use, but neither effort was successful. No standalone screener met the needed criteria. However, we do know that students who struggle with basic math skills like counting, comparing quantities, recognizing patterns, and understanding number relationships may be at risk for math difficulties, including dyscalculia. These students often score below the 30th percentile. All students below this level should get high-quality, evidence-based instruction and interventions that fit their needs. Families of these students will receive information and resources to help with math at home and will be told that their child's progress will be tracked during the Individualized Math Intervention Plan (IMIP). Tracking progress helps teachers adjust instruction and interventions as needed to support the student's math development. The universal screener does not diagnose dyscalculia or any other math disability. Not all students who show risk for math difficulties, including signs of dyscalculia, qualify for special education services (Math Proficiency Guidelines, 2025).

A universal screener for 2nd graders is designed to find students who are having a hard time with the basic math skills expected for their age, especially number sense and basic operations, which could point to dyscalculia. Dyscalculia screening looks for possible problems in key areas of early math skills and thinking. The strongest sign of early arithmetic learning is being able to count fluently and quickly add numbers from 0 to 9 to make 10.

Geary and Hoard describe Procedural Math Disability as involving errors in numeracy and counting strategies. These mistakes may be caused by problems with attention, working memory, or self-monitoring. Common signs include double-counting objects or saying numbers out of order. Some students may stop and start over, unable to group and count on. Others may mix up the order of numbers, such as reading 84 but writing 804 (Göbel et al., 2025).

For more information about the identification process for Specific Learning Disabilities or SLD please see the [OSDE Special Education Services Policy & Procedures Manual](#) and Chapter 15 Special Education Services.

For more information about the identification risk in mathematics please see the [Math Proficiency Guidelines](#).

Related Conditions with Dyscalculia

Dyscalculia often happens alongside other conditions. While these aren't causes, they can be a clue to help providers recognize and diagnose dyscalculia. Math anxiety is real and can be serious, with signs such as increased heart rate, sweating, and panic.

Children with math anxiety have shown neural responses in brain regions that correspond to negativity and fear which manifest as distress or even shutdown (Birsh & Carreker, 2018). Conditions that often occur alongside dyscalculia include the following.

- Attention-deficit hyperactivity disorder (ADHD).
- Dyslexia, dysgraphia, or non-verbal learning disorders.
- Sensory processing disorders
- Autism spectrum disorder.

[\(The Cleveland Clinic's overview of dyscalculia\)](#)

For more information about co-occurring disabilities and disorders see Chapter 16 Special Population Considerations.

Key Takeaways

1. Do children who reverse or confuse numbers have dyscalculia?

No. Students with dyscalculia primarily have issues in math calculation, including foundational skills of subitizing and estimations. Reversals or confusion of numbers is not a hallmark of dyscalculia.

2. Will my local school diagnose Dyscalculia?

No, local schools will screen for risk and provide additional math learning support for any student who is not on track for math proficiency according to the Math Proficiency Act and OKMTSS. When students have many risk factors and are persisting in struggle despite intervention and appropriate classroom instruction students may be evaluated for additional needs. If determined to qualify for services under IDEA or accommodations under 504 then a team is formed including the families to ensure the child is supported. A medical diagnosis is not provided by an educational system however, according to the [Dear Colleague](#) Letter we say Dyslexia, Dysgraphia and Dyscalculia in Oklahoma. IEPs, 504's and supporting documentation can use the word Dyscalculia but this does not constitute a medical diagnosis. See the table Recognizing Dyscalculia in this chapter for more information.

Chapter 13: Characteristics of Dyscalculia

Knowledge Self-Check

1. Does everyone with dyscalculia have the same issues?
2. Is dyscalculia very rare?

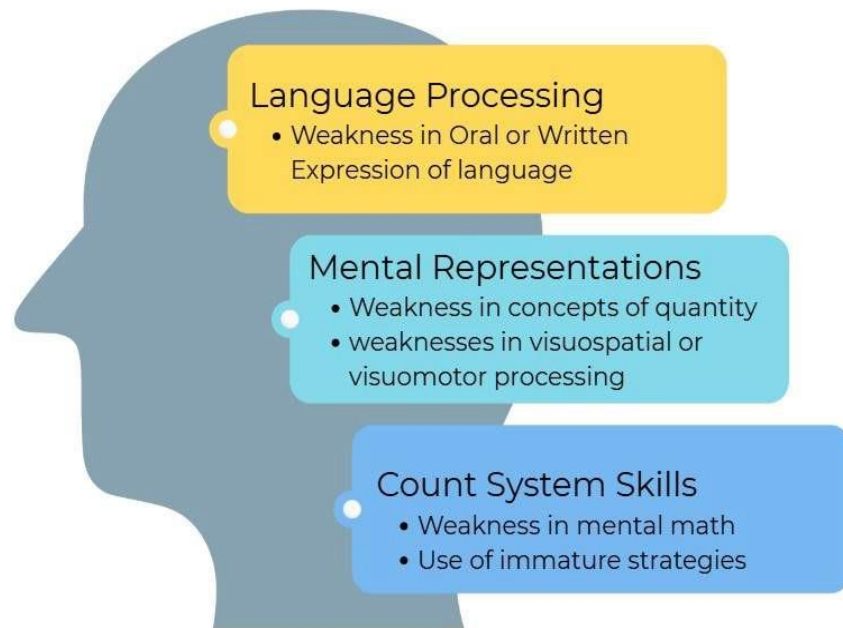
Dyscalculia symptoms often appear in childhood, especially when kids are first learning basic math. Even though it is often overlooked, dyscalculia affects 5% to 7% of school-age children (Butterworth et al., 2011). Still, schools rarely identify students as having a Specific Learning Disability based solely on math, even when they have clear and ongoing difficulties with it.

There are several reasons why dyscalculia often goes unnoticed. One reason is that another specific learning disability may already be diagnosed. For example, 40% of children who have trouble with reading are also reported to have math difficulties (Pedemonte et al., 2024). Because these challenges often happen together, it is important to pay attention to students' math needs.

Signs and Symptoms of Dyscalculia

Math disabilities implicate one or all of three broad math learning foundations, such as 1) language processing, 2) spatial and numeric concepts, and 3) facility with the count system. For students to be proficient in these skills and concepts, each of these realms must be well developed, and students must be able to intersect across them (Birsh & Carreker, 2018). Students must also be able to link their mental representations, count-system skills, oral language, and written math symbols to be proficient in mathematics. Mathematics is a language, and it is essential for children to learn to use its vocabulary, syntax, and symbols effectively in both oral and written forms. Connecting concrete models or experiences to representational pictures, sketches, or images requires language. Educators should simplify their speech to provide explicit instructions and encourage

children to engage in discussions with each other using mathematical language. Increasing mathematical conversations is the best way to develop the language skills needed to discuss concepts and guide students as they build their internal monologue. This will become the foundation for their problem-solving abilities as they progress to more abstract mathematics.



Math learning foundations implicated in math disabilities, language processing, spatial and numeric concepts, and facility with the count system (Birsh & Carreker, 2018).

The language that students bring to school should be leveraged and developed to support their growth in mathematical thinking. Difficulties in language processing, often associated with conditions like dyslexia, can affect the acquisition of math skills, especially those that rely on verbal number systems, such as counting and number naming. (Göbel & Snowling, 2010). A child's spoken numerical expressions can significantly influence how easily they learn the base-10 system. Weak language processing skills may hinder arithmetic fact fluency, verbal working memory, and the recall of sequential procedures. (Göbel et al., 2025).

For children with language-processing weaknesses, especially those receiving intensive language therapy, memorizing through flashcards or high-pressure fact-fluency assessments can be counter-productive to their mathematical development (Fulbright et al., 2000); (Kling & Bay-Williams, 2021). Flashcards and timed drills are supporting maintenance of skills and driving increased automaticity. Intentional alignment strategies with the child's skill development will lead to more productive practice.



Connect with your child's teacher to identify supportive practice strategies at home, dice and other math games may be more beneficial for your learner when they are not ready for timed drills and flashcards.

Developing foundational skills requires strong connections between numeric concepts, spatial reasoning and executive function. The concept of quantity develops over time and may be described in various ways depending on the learner's age and stage of mathematical development. It includes recognizing amounts, magnitudes, numbers, number-in-a-set, and numerosity. Number line estimation skills have been found to be significantly linked to executive function while mental arithmetic was significantly related to spatial skills (Whitehead & Hawes, 2023). Students with dyscalculia may struggle with quantity due to weaknesses in visuospatial or visuomotor processing. They may benefit from support in constructing quantity relationships by building with physical representations at the concrete level and using color coding to visually support quantity associations. It is crucial for students to transfer meaning from the concrete to the representational form as they develop a mental model and, at an appropriate pace while always connecting models to oral and written language (Powell et al., 2024).



Retrieving math facts beyond conceptual subitizing, or the brain's ability to automatically recognize known patterns, is essentially a matter of vocabulary retrieval (Dehaene, 2011). When students have known struggles with vocabulary retrieval, fluency may be built with games such as use of dice and dominos rather than timed drills.

Please refer to Chapter 14 for alternative activities that promote fact fluency through pattern recognition via conceptual subitizing. For more information view Understanding Dyscalculia: [Understanding Dyscalculia: Symptoms Explained](#)



Daily Barriers of Students Learning with Dyscalculia

Below are the areas students may experience challenges when mastering mathematics.

- Recognizing numbers and symbols.
- Fluidity and flexibility moving between numbers.
- Visualizing (mental number line).
- Counting (procedures and principles).
- Comparing quantities
- Understanding numerical relationships.
- Estimates (mental math).
- Measurements (length, weight, area, time, and temperature).

- Working with numbers (not understanding how numbers work).
- Recognizing Patterns.
- Number patterns (e.g., 3, 6, 9).
- Spatial relations (maps, routes, and sorting strategies).
- Rules (lining up numbers to work problems).
- Simultaneous Multisensory techniques (ring bell 7 times while counting).
- Graphs and charts.
- Remembering phone numbers and addresses.
- Math facts (remembering math facts).
- Quantitative reasoning (understanding word/story problems).
- Processing and memorizing information.

Mathematics and Language

Students' skill deficits in mathematics may be an inability to grasp math concepts as described in the bulleted lists above, but their difficulties may be from a deficit in language and language processing. If there are concerns the student has a language deficit, this should be addressed in addition to their math issues.

Additionally, proper use of mathematics vocabulary is essential to build each student's skills in mathematical understanding and communication.

Resources: The Importance of Math Vocabulary from PaTTAN Educational Consultant; [The Importance of Math Vocabulary + Some Helpful Resources](#)

Dyscalculia characteristics demonstrated as classroom behaviors grade band range

Preschool Speech -Language Delays • Word Retrieval Low Math Vocabulary: Struggles to recognize and verbalize quantity in terms of mathematics. • More/Less • Big/Small Confuses Directionality • Up/Down Pre-Numeracy • Counting Objects • Counting Verbally	Kindergarten & 1st grade Any Struggle Listed in PK that is persisting despite instruction. Numeracy • Producing errors when counting objects with restarts and loss of sequence • Struggles to recognize numbers and math symbols Low Math Vocabulary: Struggles to recognize and verbalize quantity in terms of gradual change. • Largest to Smallest • Tallest to Shortest • Sequencing 1st to Last Recognizing a number line • Linear quantity - counting on is a mechanical compliance skill not a conceptual skill • Understands the order of numbers but not the meaning. ○ Ex: 6 is to 5 what B is to A Recognizing Place Value • Recognizing Coins by name, size and color but are not able to connect quantities by placing them on a Place Value Mat.
2nd and 3rd grade Any Struggle Listed in PK-1st grade that is persisting despite instruction. • Dependency on strategies from lower grades ○ Counting on fingers ○ Counting on Dots • Struggles to use greater than vs less than symbols accurately • Low fluency in addends to 10 ○ Lack of automaticity, dependency on counting • Struggles to learn multiplication ○ No to Low fluency of recall of factors and products. ○ Dependent on series of addition and skip counting • Struggles with concepts of magnitude ○ Place value & Decimals	4th & Beyond Any Struggle Listed in PK-3rd grade that is persisting despite instruction. • Struggling to complete age appropriate mental math calculations • Struggles with multistep procedures for long division • Not recognizing relationships in math ○ Ex: $1+7=8$ and $8=7+1$ • Errors with Syntax of Math causing mistakes in word problems • Errors with measurement and conversion of units in math, science and social studies (Time and Timelines) • Struggles to understand fractions and conversions of fractions • Conversions of Money, exchanging bills or making change

Key Takeaways

1. Does everyone with dyscalculia have the same issues?

Dyscalculia results primarily in difficulties with math and number-related problems. But the way these problems manifest and show up in real life, and in the classroom, can be different for every individual.

2. Is dyscalculia very rare?

Dyscalculia is prevalent in 5-7% of the population (Butterworth et al., 2011) and has a 40% co-occurrence with reading difficulties (Pedemonte et al., 2024). When considering synonyms for the word rare, exceptional, sporadic, infrequent or uncommon are examples. When the frequency of occurrence in the population is 5-7%, educators should expect to see 1-2 children in every classroom who are learning with dyscalculia. Any subgroup of our learning community that is represented in every classroom is not categorized as uncommon, exceptional, sporadic, or infrequent in occurrence.

Chapter 14: Effective Instructional Practices for Students with Dyscalculia Across the Continuum

Knowledge Self-Check

1. Do students with dyscalculia just need manipulatives?
2. Do students with dyscalculia just need a calculator accommodation for all math tasks?

Understanding Math Difficulties

Not all students with math difficulties have a specific learning disability, but timely, focused instruction can make a significant difference for any student struggling to learn mathematics. Identifying where students struggle, whether it is understanding concepts, remembering steps, or applying strategies, helps schools tailor support and ensure students build a strong mathematical foundation. When implementing appropriate interventions for mathematics learners, teachers must possess a strong background in mathematical content knowledge, pedagogical content knowledge, and a wide range of instructional strategies (National Council of Teachers of Mathematics, 2011).

Grades K-2

When addressing math difficulties in early learners, it is useful to focus on number sense, a critical foundation that includes skills like counting, comparing quantities, recognizing patterns, and understanding numerical relationships. Students who struggle with early math skills often have gaps in these core areas, which can lead to broader challenges in arithmetic and problem solving as they move through school (Nelson & Powell, 2018).

Research shows that strong number sense in the early grades is a powerful predictor of later math success, while persistent difficulties can signal the need for targeted intervention. Students benefit most from explicit, systematic instruction that builds conceptual understanding alongside procedural fluency (Gersten et al., 2005). Tools such as number lines, manipulatives, and strategy-focused lessons are especially effective in supporting struggling learners.

Grades 3-5

As students progress from Grades 3-5, their mathematical learning shifts from basic arithmetic to more abstract thinking, including patterns, relationships, and generalized problem-solving. These skills are core components of algebraic reasoning and rely on a strong foundation in number sense for mastery. For students with math difficulties, this stage becomes a critical tipping point; delays at this level can significantly hinder future success in algebra and beyond (Jordan et al., 2006).

Research consistently shows that algebraic reasoning is a key predictor of success in secondary mathematics and STEM pathways (NMAP, 2008; Booth et al., 2014). Unaddressed difficulties in Grades 3-5 often lead to long-term learning gaps (Morgan et al., 2009).

Dyscalculia is a neurodevelopmental disorder that is treatable in children because their brains have not yet finished developing, making it possible for them to learn mathematical skills and develop algebraic reasoning abilities. Many students with serious math difficulties will need specialized foundation work to make progress. Some students will move on to middle school needing little support if they received targeted intervention and support in the earlier grades, while others will only require special instruction at advanced levels (Birsh & Carreker, 2018).

Due to the complex profiles of many learners struggling with mathematics, the supports that should occur are symptom-specific and should focus on what a child struggles with most. Instruction and intervention should also start as soon as possible. The sooner intervention occurs, the better the chances are for students to adapt to dyscalculia and limit the impacts of dyscalculia. Early, targeted intervention should not be disconnected from grade level learning. Due to the hierarchical nature of mathematics interventions should respond to the lowest skill deficit with subsequent lessons moving up a level of connection to or toward grade level instruction. Neglecting to connect to grade level work as quickly as possible will lead to students perpetually achieving at a below level standard (Zecher, 2023).

Grades 6-12

Students with persistent struggles in mathematics require increased intervention connected to their grade-level work, delivered in a format that enables acceleration across vertically aligned skills (Zecher, 2023). For more information, leverage the

[Oklahoma Frameworks](#). See Chapters 3: Instructional Systems & Chapter 15: Special Education Services.

Core Mathematics Instruction (Tier 1)

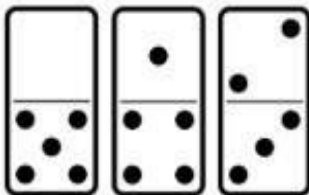
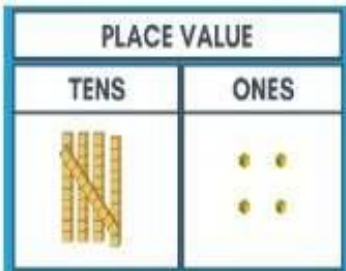
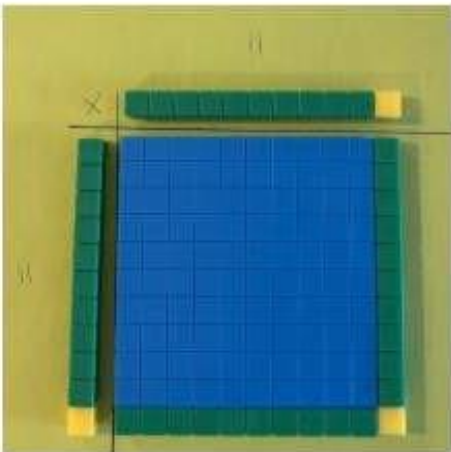
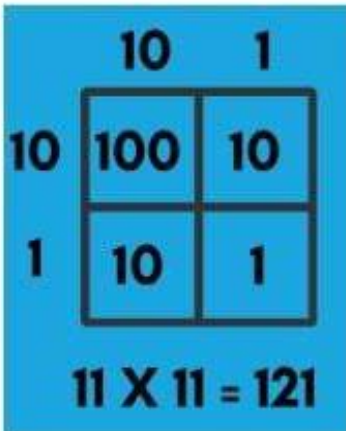
While dyscalculia is neurodevelopmental in origin, difficulties associated with this disability can be prevented through high-quality mathematics instruction. As with all subjects, core math instruction should provide opportunities for differentiated instruction, and lessons should intentionally use the Universal Design for Learning (UDL) to meet the needs of all students.

Additionally, math instruction should be conducted in a multisensory approach, particularly when new concepts are introduced. Methods for multisensory instruction in math include the use of manipulatives and concrete examples of the abstract concepts. These concrete examples might include money, blocks, and puzzles. As each student progresses in learning, instruction can move from concrete examples to representational examples (e.g., moving from base-ten blocks to drawings of the tens (flats) and ones (rods)), and finally to abstract examples (e.g., from drawings of the addition concept to using numbers).

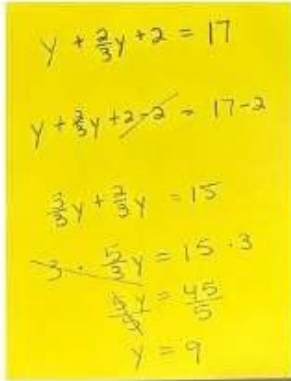
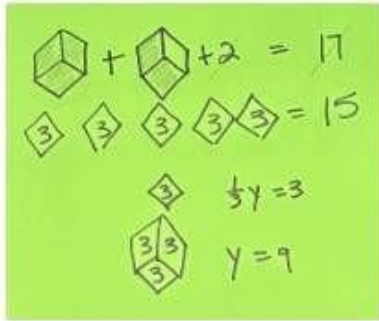
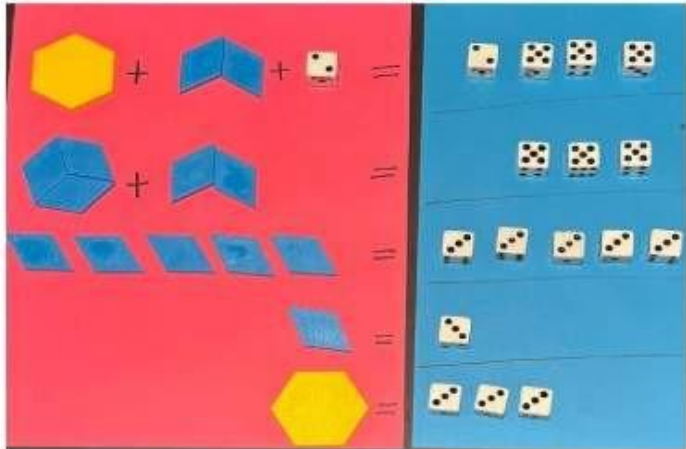


Universal Design for Learning (UDL) - Allow sketches as “written response” - Students struggling with language can express their reasoning in sketches and may be supported in labeling then connecting to a retell exercise. See Chapter 3 for more information about UDL.

Establish linkages between multiple representations of mathematical concepts with CRA-I

Universal Design for Learning (UDL) through Multi-Sensory Concrete, Representational and Abstract Learning Opportunities (CRA-I)			
	Concrete	Representational	Abstract
Addition, Addends of 5			$0 + 5 = 5$ $1 + 4 = 5$ $2 + 3 = 5$
Place Value			54
Two Digit Multiplication			

Establish procedures allowing students to answer through multiple means of expression.

Universal Design for Learning (UDL) through Multi-Sensory Concrete, Representational and Abstract Learning Opportunities (CRA-I) would have been used to introduce these concepts but students would be allowed access to solve using a variety of resources.	
	In the equation, $y + \frac{2}{3}y + 2 = 17$, Solve for y and prepare to explain your answer and strategy for solving the equation.
Use of Algorithm to solve	
Visual, Sketch, or Drawing to solve	
Demonstration of Concept with Manipulatives to solve	

For more information on the instructional sequence of concrete-representational-abstract, see [PATTAN's Instructional Sequence fact sheet](#).

Other instructional strategies to support student learning include “chunking” lesson content, using graphic organizers to structure student learning, and explicitly calling attention to new, important, and/or foundational concepts. Students should be provided with multiple opportunities to respond to the instruction through frequent practice, review, and feedback.

Math Intervention

Although intervention programs provide important road maps, students with dyscalculia will always need adjusting, because dyscalculia affects students who have differing strengths and diverse difficulties (Birsh & Carreker, 2018). As with all subjects, intervention should be directly matched to the student’s skill deficits and should allow for more opportunities for practice and support.



For children learning math with dysgraphia or dyscalculia, consider increased white space. For older children, consider larger than 8.5 x 11 paper may be needed to complete assignments if it supports their spatial reasoning. Consider ledger or even a roll of paper for advanced problems that may spill over onto multiple sheets of paper.

For more information on matching interventions to a student’s math needs, see this presentation from Dr. Amanda Van Der Heyden and PaTTAN Video link: [Making Intervention to a Student's Math Needs](#)

What works for whom and under what conditions?

Providing Instructional Support

The following is a list of instructional support options for assignments that can be implemented, in addition to quality instruction and intervention.

- Highlight or circle key words and numbers.
- Create separate worksheets for word and number problems.
- Provide near point reference charts as warm-up. Use mastered facts when teaching new concepts.
- Allow calculators when computation is not assessed.
- Explicitly teach calculator use for new concepts. Provide training for all

assistive technology. Never assume a student knows device input order.

- Give assignment rubrics for clear student expectations.
- Use paper to cover unused problems for focus.
- Give more space for problems and solutions.
- Increase white space on assignments. Use larger paper for older students. Use ledger or roll paper for complex problems.
- Provide sentence stems for discussions and responses.
- Allow sketches as written responses. Support labeling and retelling after sketches.
- Color-code related concepts for clarity.
- Match color-coding to received interventions.
- Use and encourage mathematical language frequently.
- Use graph paper for math problems alignment.
- Use graph paper with minimum $\frac{1}{2}$ inch squares, Free access at <https://print-graph-paper.com/details/1-2-inch>
- Use guidelines, not grids, for long division.



Teach students explicitly how to use the calculator for all new concepts if the child will have access to a calculator as an accommodation. Assistive technology should never be given without sufficient and documented training. See AT section for more information.

Assumption that a child understands the order to enter numbers and symbols into a device should not happen for any child but especially those learning mathematics with dyscalculia.

In addition to the support educators provide families and students, consider the following for struggling math learners.

- **Seek out resources.**

Education professionals and healthcare providers can maybe provide guidance and direction on more resources that can help. Take advantage of their expertise to help your student/child.

[National Center on Intensive Intervention Math Course](#)

[National Mathematics Advisory Panel](#)

[Adding it Up \(National Research Council\); see p. 117](#)

- **Find what works and use it.**

There are many strategies and approaches to pick from that might help a child with dyscalculia. Some children benefit from using games, music, or other approaches. Once you find something that works, use it. That will help your child learn in a way that works for them.

[Assisting Students Struggling with Mathematics: Intervention in the Elementary Grades](#)

[Teaching Strategies for Improving Algebra Knowledge in Middle and High School Students](#)

[Teaching Math to Young Children](#)

[Improving Mathematical Problem Solving in Grades 4 Through 8](#)

[Developing Effective Fractions Instruction for Kindergarten Through 8th Grade](#)

[Assisting Students Struggling with Mathematics](#)

[The Math Teacher's Toolkit](#)

- **Be patient.**

Children with dyscalculia have a recognized condition that disrupts their ability to do math like children without this condition do math. This condition isn't something they can help, but they can learn to overcome it. They're more likely to succeed at learning to overcome dyscalculia if they feel they have someone backing them along the way.

- **Be supportive and encouraging.**

It's important to offer support and encouragement to children who have this issue. Without that support, children are prone to having low self-esteem issues, and many struggle with anxiety or depression related to this condition. However, children who have encouragement and support are more likely to succeed and learn how to work through their condition, keeping it from limiting them in the future.

Working through a multi-step math problem can be disorienting these children. They may struggle to ensure all of the steps are completed sequentially. Students benefit from engaging the whole body in gestures which can be connected to the process for solving algorithms. Sufficient repetition is also required to develop accurate retrieval. Non verbal gestures become internalized and are powerful for eliciting retrieval of the order in multi-step equations completion (Zecher, 2023).

AT: Dyscalculia Supports

Supports for dyscalculia focus on improving manipulatives to help students engage with math. Manipulatives help illustrate a math concept to students. Manipulatives can be blocks or an abacus on a table or virtual renderings with technology. Calculators are a common tool for a student with dyscalculia, but they do not replace instruction in foundational math skills. Graphic organizers, although more commonly thought as a writing support, can help students maintain steps when working on longer problems. Computer integrations in the math classroom are limited, but Microsoft, Texthelp, and other organizations are building programs to make math more accessible for students.

Common Assistive Technology (AT) Tools to Support Student with Dyscalculia	
Low -tech	Manipulative blocks Rekenrek/arithmetic rack Abacus Math fact cards Graph paper
Mid-tech	Speech to Text/ Text to Speech Graphing tools Talking Calculators
High-tech	Talking scientific calculators Equatio Microsoft

Students and teachers will need to work together to find the right tools to enable independence and will need training and ongoing support to ensure independence. They will need training and ongoing support to ensure successful implementation. Oklahoma ABLE Tech can provide guidance and trial devices to assist in matching student needs to the proper tool.

Key Takeaways

1. Do students with dyscalculia just need manipulatives?

All students benefit from the introduction of a concept through a concrete manipulative, but no student should rely on them forever. Moving a student as fast as they can tolerate to the representational form as an image or sketch and then into the abstract algorithm is best for all learners. Educators who can notice math disorientation and shift back to representational or concrete examples as needed will develop strong mathematicians with decreased math anxiety.

2. Do students with dyscalculia just need a calculator accommodation for all math tasks?

Students benefit from learning how to build near-point references like a multiplication table on scratch paper, as this promotes independence and flexibility over time that cannot be achieved with an assistive technology device. When calculators are used in the classroom, all children require sufficient instruction to use the device. Children learning with Dyscalculia may struggle to enter the numbers into the device accurately.

Chapter 15: Special Education Services

Knowledge Self-Check

1. Does my school test for dyslexia, dysgraphia, and dyscalculia?
2. Do students with an outside diagnosis of dyslexia, dysgraphia, and dyscalculia need special education services?
3. If my student doesn't qualify for special education, what are the next steps?

Dyslexia, Dysgraphia, and Dyscalculia versus a Specific Learning Disability

These types of conditions, such as dyslexia, are found within the definition of a Specific Learning Disability (SLD). SLD is one of 13 categories of disabilities defined in the IDEA federal regulations at 34 C.F.R. §300.8. The SLD definition is found within §300.8(c)(10) and lists conditions such as perceptual disabilities, dyslexia, and developmental aphasia. Therefore, Specific Learning Disability is an umbrella term for dyslexia, dysgraphia and dyscalculia.

When a parent obtains an outside evaluation diagnosing their child as having dyslexia does not necessarily mean the child will automatically need special education services. It depends on the nature and severity level of the condition to determine if there is a need for specially designed instruction within a special education program. A child may need an evaluation under Section 504 of the Rehabilitation Act to determine if they have a physical or mental impairment that substantially limits one or more major life activities. If eligible, the multidisciplinary 504 team reviews the evaluation results to determine if the impairment requires accommodations to access the educational environment. In relationship to an evaluation under the IDEA, school districts are required to gather required components outlined in the Oklahoma Special Education Policies and Procedures; and therefore, will need to obtain the parent's consent to gather additional assessments and information in addition to the outside evaluation.

The meaning of the evaluation data will determine the nature and severity level to determine if the child is in need of special education and related services; or a Section 504 evaluation will determine if the student is in need of accommodation to access their education.

If the student does not qualify for special education or Section 504, then the student may need Tier 2 supports within the Multi-Tiered System of Supports (MTSS) framework. The district will provide monitoring of all students by administering a universal screening three times a year to determine which students are at-risk. Academic universal screening of all students within a grade level does not require parental consent (34 C.F.R. §300.300(d)). Based on the universal screening data of students who are considered at-risk will drive the decision of which specific skill to target using an evidence-based intervention matched to the student's skill deficit. For example, if a child in first grade struggles with phonemic awareness, then the child might receive an evidence-based intervention that targets phonemes (e.g., "Say it, move it, write it, spell it).



It is important to note the definition of a Specific Learning Disability (SLD) is slightly different under the IDEA compared to the medical diagnosis of a "Specific Learning Disorder" within the Diagnostic and Statistical Manual, 5th edition (DSM-5-TR). Outside evaluations may not include all the evaluation components required by the state of Oklahoma to determine eligibility for special education services, and the student's team may request parental consent to authorize the school to complete additional assessments, as necessary, to comprise a comprehensive evaluation. Similarly, a diagnosis of dyslexia, dysgraphia, or dyscalculia does not automatically determine eligibility under the IDEA as additional assessments may be necessary by the local education agency (LEA).

Evaluation

Students enrolled in a public school, reside in, or are homeless, are wards of the State, or attending a private school who are suspected of being a child with a disability are entitled to receive a comprehensive evaluation for special education services, at no cost to the family (34 C.F.R. §300.111). Anyone who is part of the student's educational team can request an evaluation for the student (e.g., parent, teacher, administrator, etc.). Schools should also use student-level data (e.g., classroom, district-wide, and state-wide assessment results, including universal screening and progress

monitoring data, etc.) to determine if an evaluation is warranted through the review of existing data (RED) process.

The following information discusses the process of a referral for, and completion of, a comprehensive evaluation to determine special education eligibility.

For more information, the [Oklahoma Special Education Policies and Procedures Manual](#) dives deeper into the topics of evaluation, eligibility, and subsequent special education.

Instructional Support and Early Identification Through MTSS

The school-based decision-making team is responsible for reviewing the universal screening data to determine which students are at-risk for a specific skill area. The team will also review the progress monitoring data to determine if the student's individual rate of improvement in alignment with the targeted goal is sufficient to remediate the specific skill deficit or if there is a need to adapt or change the intervention. In addition to the universal screening and the progress monitoring data, the team will review documents in the student's cumulative folders/permanent records (e.g., attendance, office discipline referrals, grades, vision and/or hearing screening, etc.), and other information such as a teacher checklist, family interview/parent input, and other areas of assessment (e.g., bell work, quizzes, unit tests, final exams, etc.) should be considered.

The school-based decision-making team uses available screening and instructional data to identify students who may need additional instructional support. The MTSS framework includes a data decision making component that should include data rules that assist teams in problem-solving areas of need (e.g., If data shows majority of students are not proficient in a skill area, then there may be a Tier 1 concern regarding the core instruction). Data rules assist teams in analyzing areas of need either district-wide, building-wide, grade level, or teacher level. The Data-Based Individualization (DBI) process assists teams in analyzing data for specific students to determine whether an evidence-based intervention is working to improve the student's skill deficit.

For students who may be evaluated under the suspected disability category of Specific Learning Disability (SLD), the school district must provide documentation that evidence-based interventions were implemented to address the student's instructional needs in reading, mathematics, and written expression, as appropriate. This documentation includes progress

monitoring data, which may impact the need to adapt the frequency and duration of intervention delivery, yet teams may need to conduct an intervention fidelity or collect integrity data check first prior to making any adaptations or changes to the prescribed evidence-based intervention (e.g., fidelity checklist verifying the intervention was implemented as designed or prescribed as intended).

Data used to inform initial special education eligibility decisions must be current and relevant, generally meaning the data are no more than one calendar year old. This includes classroom assessments, curriculum-based measurements, local or state assessments, classroom observations, and other standardized assessments provided by the LEA. Historical information such as educational history and cultural background, may be older than one calendar year and may be used to provide important context for the evaluation.

For more information on MTSS, please see Chapter 3: Introduction to Instructional Systems within this handbook.

When data collected through MTSS and instructional problem-solving indicate that a student may have a disability and may require special education services, a formal referral for a special education evaluation should be initiated.

Evaluation and Eligibility for Special Education Services

The Oklahoma Special Education Policies and Procedures Manual describe the evaluation and eligibility process for special education under the Individuals with Disabilities Education Act (IDEA). The information in this section is aligned with Chapter 5: Evaluation & Eligibility of the manual.

To be eligible for special education and related services, the group of qualified professionals and the parent determining eligibility must, based on evaluation data and consideration of required eligibility indicators, review together in a meeting if sufficient key eligibility criteria are met:

1. The student's educational difficulties are not primarily the result of environmental, cultural, or economic factors; visual, hearing, intellectual, motor, or emotional disability; or limited English proficiency. *(These factors must be considered and ruled out for the category of Specific Learning Disability and may be marked N/A if not applicable.)*

2. The evaluation was conducted in the student's primary language or other mode of communication, unless it is clearly not feasible to do so.
3. The student meets the criteria for one or more disabilities under the Individuals with Disabilities Education Act (IDEA), including Specific Learning Disability (which may include dyslexia, dysgraphia, and dyscalculia, as applicable).
4. Because of the disability and its adverse impact on educational performance, the student requires special education and related services, including specially designed instruction, in order to access and make progress in the general education curriculum.
5. The student's educational performance is not primarily the result of a lack of appropriate instruction in reading (including phonemic awareness, phonics, vocabulary development, reading fluency including oral reading skills and reading comprehension strategies), mathematics, or limited English proficiency.

If the student is not found eligible for special education services under the IDEA, the results of the evaluations conducted should still be used to provide feedback on the educational needs of the student, and the results should be incorporated within instructional and intervention planning. When a student is not eligible for special education services under the IDEA, but does have a disability, a referral for an evaluation under Section 504 of the Rehabilitation Act should be considered. A Section 504 plan can provide accommodations for the student, if eligible.



A parent and/or adult student has the right to obtain an Independent Education Evaluation (IEE) at public expense if they disagree with an evaluation obtained or conducted by the LEA. Parents can request the IEE only after the LEA conducts its own evaluation and shares the results. The LEA will provide the parents a list of qualified examiners, and parents may choose from the list or select their own qualified examiner to conduct the IEE based on the LEA's IEE criteria.

For more information on the process of an IEE, please see the OSDE Special Education Policies and Procedures Manual.

Comprehensive Evaluation

A comprehensive evaluation is required to determine whether a student meets eligibility criteria for Specific Learning Disability (SLD) under the Individuals with Disabilities Education Act (IDEA). The Oklahoma Special Education Policies and Procedures Manual establishes the required components of a comprehensive evaluation, including additional requirements specific to SLD. More detailed descriptions of these components can be found in the [Oklahoma Special Education Policies and Procedures Manual](#).

A comprehensive evaluation uses multiple sources of data and must be sufficiently thorough to identify all of the student's educational needs, whether or not those needs are commonly linked to the suspected disability category.

Components of a Comprehensive Evaluation for Specific Learning Disability	
REQUIRED	AS NEEDED
● Parent Input ● Teacher Input/Recommendations ● Academic Achievement ● Intellectual/Cognitive ● Adaptive Behavior ● Developmental History ● Background (Social or Cultural and Educational) ● Observation in Classroom/ Other Environment ● Other Intervention Documentation ● Physical Condition: ○ General Health/Medical ○ Vision Screening ○ Hearing Screening	● Health/Medical ● Vision Evaluation ● Hearing Evaluation ● Motor ● Communication/Language ● Perceptual Processing ● Psychological ● Social/Emotional ● Behavior ● Assistive Technology ● Other Intervention Documentation ● Vocational

Under federal law, the Individuals with Disabilities Education Act (IDEA), when a parent or school suspects that a student may have a disability, including dyslexia, dysgraphia, or dyscalculia, the school must carefully consider the concern and review available information about the student. As part of this process, the school team conducts a Review of Existing Data (RED) to examine current assessments, classroom performance, and other relevant information.

Based on this review, the district may determine that additional evaluation is warranted and proceed with a comprehensive educational evaluation at no cost to the family. In some cases, the district may determine that an evaluation is not warranted at that time. When this occurs, the district must provide parents with Written Notice explaining the decision and the reasons for declining to initiate an evaluation under IDEA.

Before seeking a private evaluation, families are encouraged to work with their child's school to review existing information and discuss available supports. It is also helpful to understand the differences between school-based evaluations and private evaluations, including how results may be used to guide services and supports in school. For more information about the differences among various assessments and evaluations, please see the table in Chapter 3: Defining Dyslexia, section titled "Recognizing Dyslexia."

Qualified Professionals

A variety of individuals comprise the group of qualified professionals, and the parent, who determine whether a child is a child with a disability under the IDEA ([34 C.F.R. §300.306](#)).

Eligibility for special education services cannot be determined solely by one, individual. Indeed, it is the responsibility of a multidisciplinary group of individuals such as at least one general education teacher, at least one special education teacher, and at least one parent, including qualified professionals who evaluate/assess and interpret the evaluation results or bring information to the team for consideration as the basis for determining eligibility, depending on the suspected disability (or disabilities) or concerns addressed in the RED. Within the context of comprehensive evaluations/assessments for special education services, different professional evaluators may contribute to the evaluation process by assessing the identified areas of concern within their professional competency. Please note that an individual professional may have additional certifications and/or training in an area not listed.

Identifying the Characteristics of Dyslexia Within a Comprehensive Evaluation

When dyslexia is suspected, the evaluation must include professionals who are knowledgeable about the development of literacy skills and the characteristics of dyslexia across age and grade levels.

A comprehensive evaluation for suspected dyslexia typically includes measures of phonological processing, decoding, word recognition, spelling, oral reading fluency, and reading comprehension, as well as a review of instructional history and response to intervention.

Assessments may include additional information such as:

Components of an Effective Evaluation	
<u>BACKGROUND INFORMATION</u> Family Survey -History of learning difficulty -Behavior Medical History -Speech-language delays -Developmental delays -Language development milestones, speech/language therapy history -Hearing and vision screening or records -Medical conditions that may affect learning, Ear infections Activities/Interests -Art -Dance -Music -Drama/Speech -Athletics	<u>COMPONENTS FOR READING/DYSLEXIA</u> Word Recognition Decoding -Real word reading (accuracy and automaticity) -Pseudoword/nonword decoding — isolates - phonics skills from memorized sight words -Sight word recognition Oral Reading Fluency (Rate/Accuracy) Spelling (Words, Dictation, Connected Text) Phonological Processing -Phonological Awareness (taking sounds apart, blending sounds, manipulating sounds) -Phonological Memory? (digits and nonword repetition) Phonological Memory -Rapid Naming Oral Language -Oral/listening comprehension -Receptive/expressive vocabulary Reading Comprehension Observation in General Education Classroom Setting or Assessment Setting
<u>PREVIOUS EVALUATION INFORMATION</u> Educational -Speech-Language -Occupational -Physical Therapy -Attention/Focus -Mental Health -School Records (report cards, assessment data)	<u>COMPONENTS FOR MATH/DYSCALCULIA</u> Math Reasoning Math Calculation/Computation Math Fluency Math Problem Solving
<u>DOCUMENTATION OF PREVIOUS INTERVENTION</u> -RTI, IEP, Private services -Type, length, outcome	<u>COMPONENTS FOR WRITING/DYSGRAPHIA</u> Fine Motors Skills Transcription Encoding/Spelling Written Expression
<u>COMMON COMPONENTS</u> Cognitive/Intelligence Verbal or non-verbal problem-solving -Concept formation -Critical thinking General Knowledge Assistive Technology	



It is important to note, school districts are **not** required to “diagnose” dyslexia, dysgraphia, or dyscalculia under the IDEA federal regulations. Instead, the IDEA requires each State Education Agency (SEA) to adopt, consistent with 34 C.F.R. §300.309, “**criteria**” for determining whether a child has a specific learning disability as defined in §300.8(c)(10), and the LEA must use the State’s criteria adopted (34 C.F.R. §300.307). In 2032-2033 school year, the State will be adopting the use of a process based on the child’s response to scientific, research-based intervention (i.e., Response to Intervention-RtI within the MTSS framework).

The term, “characteristics of dyslexia, dysgraphia, and dyscalculia,” may be used by the multidisciplinary team to assist in identifying sufficient key eligibility indicators through the comprehensive evaluation.

Considering Co-Occurring Learning Differences

It is important for evaluation teams to recognize that learning differences such as dyslexia, dysgraphia, and dyscalculia may co-occur. Students may demonstrate characteristics of more than one learning difference, as these areas often share underlying cognitive and language processes related to memory, processing speed, executive functioning, and language development. During the Review of Existing Data (REDS) and comprehensive evaluation process, the school-based decision-making team should carefully analyze patterns of strengths and needs across reading, writing, and mathematics to determine the student’s full learning profile. Identifying co-occurring learning differences helps ensure that instructional planning, interventions, and supports are appropriately targeted to address all areas of educational need. When these characteristics are present, instruction and intervention should be aligned with evidence-based, explicit, and systematic practices matched to the student’s individual learning needs.

Using Evaluation to Design an Individualized Education Program (IEP)

Once a student has been determined eligible for special education services under the IDEA, the IEP team develops an Individualized Education Program (IEP) based on the student’s identified areas of educational need as determined through the evaluation and eligibility process. Evaluation data serves as the foundation for all IEP decisions, including the determination of goals, services, accommodations, and supports.

The IEP team should consider the students’ strengths, needs, and parental

input to design a program that provides specially designed instruction and related services tailored to support meaningful educational progress. The IEP must be individualized and reasonably calculated to enable the student to make progress appropriate considering the student's circumstances.

Required Components of an IEP

An Individualized Education Programs (IEPs) includes information necessary to support the provision of specially designed instruction and services. Required components include, but are not limited to, the following.

- **Student demographic information**
- **Statement of eligibility and educational need**, including a clear connection between the student's disability category and the impact on access to and progress in the general education curriculum, with consideration of the student's strengths and areas of need.
- **Current assessments Data** (within the past year) used to inform instructional planning
- **Present Levels of Academic Achievement and Functional Performance (PLAAFP)**, including:
 - academic and function strengths
 - educational needs
 - parental concerns related to the student's education.
- **Consideration of special factors**, as required, to ensure the IEP addresses the students' unique needs.
- **Measurable annual goals** (and short-term objectives when applicable that):
 - identified area(s) of educational need
 - are aligned with evaluation data
 - are directly linked to the services and supports provided
- **Progress monitoring procedures**, including how progress towards each goal will be measured and will be communicated to parents
- **Special education and related services**, including:
 - Supplemental aids and services
 - Program modifications and/or supports

- **Accommodations**, including classroom accommodations and those required for state and district assessments.
- **Least Restrictive Environment (LRE)** determination, including documentation of the extent, if any, to which the student will not participate with nondisabled peers
- **Extended School Year (ESY) determination for the provision of FAPE**, when applicable
- **IEP team participation and signatures**
- **Informed parental consent**, including documentation that parents have been informed of their rights and relevant procedural safeguards

Each component of the IEP should be directly informed by evaluation results to ensure that instruction, services, and supports are targeted, intentional, and individualized. When evaluation data indicate specific skill deficits (e.g., phonological processing, written expression, or mathematical reasoning), IEP goals and services should explicitly address those needs using evidence-based instructional practices.

Together, these components ensure the IEP provides a cohesive plan of support designed to promote student growth and access to educational opportunities in alignment with IDEA and Oklahoma Special Education Policies and Procedures.

For additional information regarding IEP development and required components, refer to the [Oklahoma Special Education Policies and Procedures Manual Chapter 6](#).

Section 504 Evaluation

Section 504 of the Rehabilitation Act of 1973 is a federal civil rights law that prohibits discrimination based on disability in programs and activities that receive federal financial assistance from the U.S. Department of Education. Section 504 ensures that students have equal access to education school-related activities, and requires schools to provide appropriate aid, services, and accommodations to meet the individual needs of qualified students. Some students with dyslexia, dysgraphia, or dyscalculia may qualify for services under Section 504. The Office for Civil Rights (OCR) oversees compliance with Section 504.

The Americans with Disabilities Act (ADA) is another federal civil rights law that prohibits discrimination based on disability. Several areas include employment, transportation, public accommodations, communications, and access to state and local government programs and services. For students attending K-12 public schools, the provisions of Title II of the ADA are interpreted consistently with Section 504 requirements. The OCR also oversees public school compliance with Title II of the ADA.

For more information, visit the Office for Civil Rights and the OSDE Section 504 webpage.

Who Qualifies Under Section 504

A student is considered a qualified individual with a disability under Section 504 if the student has a physical or mental impairment that substantially limits one or more major life activities.

Major life activities include, but are not limited to, caring for oneself, walking, seeing, hearing, speaking, breathing, working, performing manual tasks, and

learning. Examples of impairments that may substantially limit major life activities, even when medication, aids, or devices, are used may include attention deficit hyperactivity disorder (ADHD), asthma, allergies, blindness or visual impairment, deafness or hearing impairment, diabetes, dyslexia, dysgraphia, dyscalculia, epilepsy, heart disease, and mental illness.

With the passage of the ADA Amendments Act in 2008, Congress expanded the scope of "major life activities" and clarified a disability determination under Section 504 and the ADA should not require extensive analysis. The ameliorating effects of mitigating measures (other than ordinary eyeglasses or contact lenses) are not considered when determining whether a student has a disability.

Section 504 Evaluation Process

An evaluation is necessary to determine whether a student has a physical or mental impairment that substantially limits one or more major life activities. The group responsible for reviewing evaluation data and determining eligibility and services consist of knowledgeable individuals regarding the student's disability and educational needs.

These may include, as appropriate:

- school nurses
- teachers
- counselors
- certified school psychologists
- school administrators
- social workers
- other health care professionals

This group carefully reviews and analyzes information collected from multiple sources. Which may include:

- medical or pediatric report
- aptitude and psychological test results
- grades and classroom performance
- teacher observations
- information about the student's social, cultural, and educational background
- family input.

Developing a Section 504 Plan

If a student is determined eligible, a Section 504 Plan is developed by a group of knowledgeable people.

The Section 504 Plan describes:

- the education and related aids and services a student needs
- Any program modifications or accommodations required
- the appropriate setting in which the student will receive those services and supports will be provided.

In addition to providing required services and supports, school districts must maintain written procedures governing the administration of Section 504 services.

These procedures include procedural safeguards such as:

- notice of Section 504 rights
- the opportunity for parents and adult students to review relevant records
- an impartial hearing with the opportunity for representation by counsel
- a review or appeal process

Section 504 Plan or IEP

Both, a Section 504 Plan and an IEP, may support students with disabilities; However, they serve different purposes and are governed by different laws.

- an IEP, developed under IDEA provides special education and related services for students whose disabilities adversely impact educational performance and who require specially designed instruction.
- a Section 504 Plan provides accommodations and supports to ensure a student with a physical or mental impairment that substantially limits one or more major life activities, has access to the educational environment (29 U.S.C. § 794).

A student is not required to have one plan before the other, and neither document supersedes the other. Eligibility is determined separately under each law. Any student under IDEA is also protected by the procedural safeguards (aka, rights) under Section 504; however, students only eligible under Section 504 are not protected under the procedural safeguards of IDEA.

Transitioning Between an IEP and a Section 504 Plan

Because an IEP is determined through the IDEA, which covers services for students ages three through the school year in which the student turns 22. The student's right to services ends at the point the student turns 22 on or before September 1st of that school year, or in which the student earns a high school diploma, whichever occurs first. By contrast, a student's right to protection from discrimination, based on disability under Section 504 and the ADA, may continue into postsecondary education. However, at the postsecondary level, it is important to note the student will need to self-disclose their disability and advocate for supports and tools since they do not automatically apply to all post-secondary educational options. Services and supports available to students with Section 504 Plans at the K-12 level are not necessarily available at the post-secondary level.

If a K-12 student already has a Section 504 Plan, and their parents (or the adult student if they are 18 or older) determine an IEP may be necessary, the parents/adult student would need to request an initial comprehensive evaluation under IDEA special education. The evaluation process would begin as described above in this chapter.

If a student already has an IEP, and their parents (or the adult student if they are 18 or older) have determined the student no longer qualifies for IDEA through a reevaluation process or the parent/adult student revoked consent to all special education and related services, then a Section 504 Plan may be necessary.

Therefore, the district may consider offering the parent or adult student an initial evaluation under Section 504.

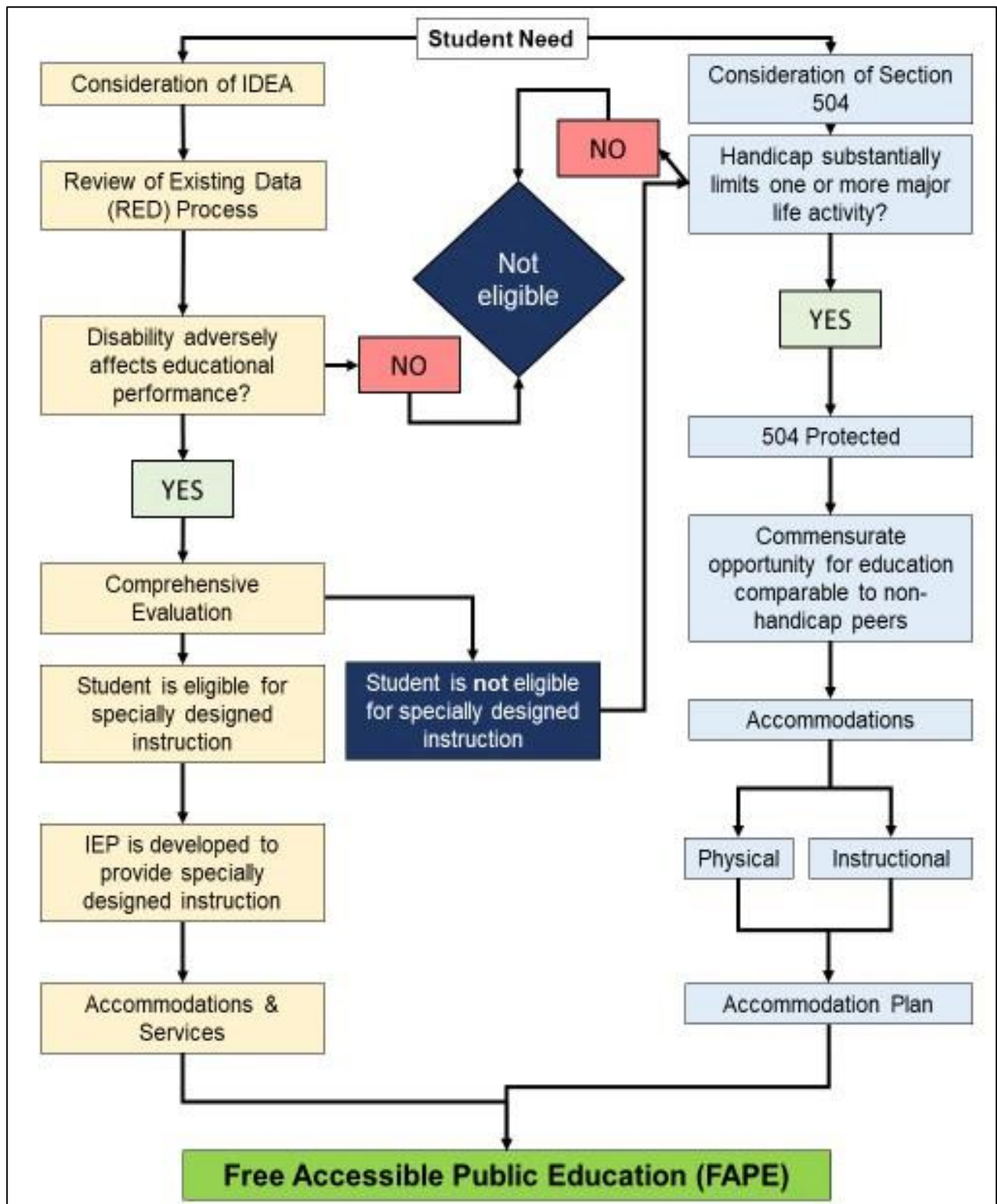


Image: Evaluation Processes for an IEP or Section 504 Plan



Least Restrictive Environment (LRE)

LRE/FAPE Knowledge Check and FAQs

Under 34 CFR §300.114, school districts must ensure that students with disabilities are educated with nondisabled peers to the maximum extent appropriate, and removal from the general education environment should occur only when the nature or severity of the disability prevents satisfactory education in that setting, even with the use of supplementary aids and services.

- How does assistive technology support a student's Least Restrictive Environment?
 - Assistive technology can reduce barriers that interfere with a student's ability to access instruction, materials, and classroom participation. By providing tools such as text-to-speech or speech-to-text, students with dyslexia may be able to participate more fully in general education settings alongside their peers.
- Should students with dyslexia and other reading disabilities automatically be placed in the special education setting across multiple content areas?
 - No. A student's disability category does not drive placement. Removal from the general education setting occurs only when the nature and severity of the disability is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily.
- Is assistive technology a replacement for evidence-based dyslexia instruction?
 - No. Assistive technology is not a substitute for structured literacy instruction or other specialized instruction. Rather, it works

alongside instruction to provide access to grade-level content while the student develops reading and writing skills. Many students benefit from both assistive technology and specially designed instruction. The IEP team determines the appropriate combination of supports based on the student's individual needs.

- Can assistive technology help prevent unnecessarily restrictive placements?
 - Yes. When accessibility tools effectively address barriers, they may allow students to remain in the general education environment while receiving appropriate supports and services.
- When should accessibility and assistive technology be considered?
 - Accessibility supports and assistive technology should be considered during the IEP development process [34 CFR §300.324(a)(2)(v)] and whenever barriers to participation, curriculum access, and progress in the general education environment are identified prior to considering more restrictive placements.

Key Takeaways

1. Does my school test for dyslexia, dysgraphia, and dyscalculia?

Oklahoma schools are required to screen students in K-3 for dyslexia. For all students, special education Child Find obligations are still expected to be met by all schools in Oklahoma. Parents and families seeking a test for dyslexia, dysgraphia, and dyscalculia will follow the guidance to request a comprehensive evaluation under the disability category of a Specific Learning Disability. See the Oklahoma Special Education Policies and Procedures to find out more information on requesting an evaluation, the responsibilities of the school to conduct the evaluation, or the responsibilities of the school to provide reasons for not conducting the comprehensive evaluation.

2. Do students with an outside diagnosis of dyslexia, dysgraphia, and dyscalculia become automatically eligible for special education services?

Parents and families can seek a private diagnosis if they choose to do so (See Chapter 3 for the qualifications of a provider who can diagnose). Parents should then bring the evaluation results to the school, and the school must consider the results. However, during the consideration process the school may or may not determine the student needs a comprehensive evaluation. If the school determines a comprehensive evaluation is warranted, they will then need to seek informed parent consent to conduct the remaining components of the evaluation at school to determine the student's eligibility. Therefore, even with an outside diagnosis, a student may not receive a comprehensive evaluation or may be determined ineligible. See the Oklahoma Special Education Policies and Procedures to find more information on outside evaluation results.

3. If my student doesn't qualify for special education, what are the next steps?

It can be difficult to watch your student struggle and not receive support in the form of special education. The Oklahoma Special Education Policies and Procedures has procedures parents and families can follow if they believe an evaluation was in error. However, if a student is determined ineligible for special education, parents and families still have many options to support their student. The student may be eligible for a Section 504 Plan, which has different eligibility criteria and services provided.

A student may also be able to receive supports through a Student Literacy Intervention Plan (SLIP) or through their school's Multi-Tiered Systems of Support (MTSS). The district with the MTSS framework provides small group Tier 2 instruction for students struggling with a specific skill deficit using evidence-based

interventions and strategies. These supports are for any child who scores at-risk on the grade level universal screening for academic skills. Therefore, districts who are implementing the MTSS framework provide progress monitoring three times a year for all students within a grade level.

Chapter 16: Special Population Considerations

Knowledge Self-Check

1. Can a student be identified as gifted and have dyslexia, dysgraphia, and/or dyscalculia?
2. Can an English Learner have dyslexia, dysgraphia, and dyscalculia?
3. Can students with dyslexia, dysgraphia, and dyscalculia have other co-occurring disabilities?

Giftedness and Twice-Exceptional Students

"What's not often well-known or well-understood is that students who are gifted may also have a special need or disability just as students with disabilities may also be gifted. The term 'twice exceptional', also referred to as '2e', is used to describe gifted children who have the characteristics of gifted students with the potential for high achievement and give evidence of one or more disabilities as defined by federal or state eligibility criteria. These disabilities may include specific learning disabilities (SLD), speech and language disorders, emotional/behavioral disorders, physical disabilities, autism spectrum, or other impairments such as attention deficit hyperactivity disorder (ADHD)."

-National Association for Gifted Children

According to OK State Law Title 70 O.S. 1210.301:

1. "Gifted and talented children" means those children identified at the preschool, elementary and secondary level as having demonstrated potential abilities of high- performance capability and needing differentiated or accelerated education or services. For the purpose of this definition, "demonstrated abilities of high-performance capability" means those identified students who score in the top three percent (3%) on any national standardized test of intellectual ability. Said definition may also include students who excel in one or more of the following areas:

- a. Creative thinking ability.
- b. Leadership ability.
- c. Visual and performing arts ability.
- d. Specific academic ability.

Therefore, educators can provide gifted and talented services for students who demonstrate gifts and/or talents in areas that may not be recognized by standardized assessments of cognitive ability. Educators should consider offering multiple types of assessments in an inclusive environment (potentially offering assessments to an entire grade level).

For more information on giftedness, visit the [Oklahoma Gifted and Talented Website](#).

Twice exceptional, or 2E, is a term used to describe students who are both intellectually gifted (as determined by an accepted standardized assessment) and learning disabled, which includes students with dyslexia. The National Association for Gifted Children (NAGC) describes three types of students who could be identified as 2E.

1. Students identified as gifted and talented as well as identified with a learning disability (including dyslexia).
2. Students whose learning disability has been identified but is potentially taking precedence over a gifted identification. These students are required to have their needs met and should have gifted services offered as soon as possible.
3. Students who have a learning disability and are gifted and talented, but neither are addressed due to their average school performance.

“Masking” is a term used when gifted traits and characteristics make it seem like a student does not have a learning disability that needs to be addressed OR when a learning disability overshadows or is addressed more readily than a student's gifted and enrichment needs.

When considering a gifted student with dyslexia, these considerations should be remembered.

- Cognitive measures must be administered when 2E is suspected.
- Dyslexia or giftedness may be overlooked.
- Oral language and background knowledge compensate for weak

decoding, masking the dyslexia, OR severe decoding and spelling challenges mask the giftedness.

Therefore, educators must be vigilant in looking for characteristics that could indicate giftedness, dyslexia, or both.

Some characteristics (such as, but not limited to, those in the bulleted list below) observed in students may prompt educators to administer a cognitive assessment. Educators should consider multiple areas of cognitive assessment or non-cognitive assessment, depending on the student's strengths.

It is important to note that students are required by law to receive services that address their giftedness, as well as receive services to address their dyslexia (or other specific learning disability) (70 O.S. 1210.307).

Characteristics of Twice-Exceptional Students

- Superior oral vocabulary.
- Advanced ideas and opinions.
- High levels of creativity and problem-solving activity.
- Extremely curious, imaginative, and questioning.
- Discrepant verbal and performance skills.
- Clear peaks and valleys in cognitive test profile.
- Wide range of interests not related to school.
- Specific talent or consuming area of interest.
- Sophisticated sense of humor.

(International Dyslexia Association, Gifted and Talented: Identifying and Instructing the Twice-Exceptional Student [Fact Sheet], 2018).

This bulleted list is not provided as a fully comprehensive checklist, nor should it be used to identify 2E students. While many schools screen students for giftedness at regularly scheduled intervals, when that is not possible or a student has missed an interval, the school should consider students with these characteristics to determine if an evaluation for giftedness is warranted. This consideration is only provided as guidance when screening large groups of students is not possible, and when educators want to ensure students who have learning differences, such as dyslexia, are assessed and considered for gifted programming properly.

English Learners (ELs)

English Learners (ELs) represent a diverse and growing population in schools. ELs are doing double duty all the time; their cognitive workload is continually high as they navigate and make connections between languages while simultaneously learning content. EL students may experience language differences related to second-language acquisition, language disorders, dyslexia, dysgraphia, or a combination of these factors. This section provides guidance on distinguishing language differences from disability and on delivering evidence-based literacy instruction that effectively and equitably supports multilingual learners.



What This Section Covers

This section will help you understand who EL students are, how to tell the difference between language learning and a reading disability, and what evidence-based practices — grounded in the science of reading — look like for multilingual learners in your classroom.

Definitions

For the purposes of this handbook, an English Learner (EL) is a student whose primary language is not English and is developing proficiency in listening, speaking, reading, and writing in English. Multilingual learner is a broader term that recognizes students who use or are developing proficiency in more than one language.

It is important to note that language differences resulting from second language acquisition are not disabilities. However, English Learners can also experience dyslexia, dysgraphia, or other language-based learning differences. Careful evaluation is required to distinguish between typical language development and persistent literacy difficulties.

Diversity Within the EL Population

English Learners are not a homogeneous group, and language proficiency status alone does not fully describe their learning profiles. EL students differ widely in:

- Cultural backgrounds and prior life experiences
- Prior to schooling, some students have strong literacy in their home

language

- Some students have had limited or interrupted formal education (sometimes called SIFE Students with Interrupted Formal Education)
- Levels of English language proficiency
- Levels of literacy skills (e.g., phonemic awareness, prior general content knowledge) in their first language.
- Content knowledge and academic background

These differences influence how students learn to read and write in English and may affect how literacy difficulties appear. Understanding this variability is essential for distinguishing typical language development from potential learning disabilities, and for providing appropriate instruction and support (Vaughn et al., 2019).



A Note on SIFE Students (Students with Interrupted Formal Education)

Some EL students have had little or no formal schooling before arriving in U.S. schools. These students may lack foundational literacy skills in any language. For SIFE students, difficulties in reading and writing in English should always be considered in light of their educational history; and their current stage of second language acquisition. Absence of literacy skills does not indicate a disability. These students need intensive foundational instruction, including oral language development, basic print concepts, and phonics, before conclusions about disability can be drawn. Teams must gather thorough background information and allow sufficient time and high-quality instruction before referral.

Cultural, Educational, and Experiential Considerations

Evaluation teams must carefully consider the educational, linguistic, and cultural backgrounds of English Learners. Some EL students may have experienced varied schooling contexts, including interrupted or limited formal education. Differences in prior instructional methods, literacy exposure, and academic expectations may influence classroom performance.

Additionally, some EL students may be navigating adjustment to a new cultural environment, experiencing culture shock, or progressing through a "silent period", a common stage in second-language acquisition during which students listen and process language before actively speaking. This is normal and expected, not a sign of a problem.

Trauma, displacement, or migration-related stressors may also affect attention, engagement, or academic performance. These factors do not indicate disability but must be considered when interpreting academic data. Thorough evaluation requires examining these contextual variables to avoid misattributing environmental or experiential factors to a learning disability.



What This Means in the Classroom

A student who is quiet, hesitant to participate, or performing below grade level may be in a silent period, adjusting to a new culture, or still developing English – not necessarily showing signs of a disability. Observe over time, provide supportive instruction, and document what you see before drawing conclusions.

Differentiating Language Difference from Disability

A central concern in evaluating ELs for dyslexia is the risk of both overidentification and under identification:

Overidentification

- Occurs when typical patterns of second-language acquisition, such as developing vocabulary, grammatical errors, or emerging English reading skills, are mistaken for signs of a disability.

Under identification

- Occurs when persistent reading difficulties are attributed solely to English language development, delaying needed evaluation and support.

Both patterns lead to inequitable outcomes. Federal guidance is clear: students must not be identified as having a disability based primarily on limited English proficiency, nor should EL status be used to delay or deny evaluation when a disability is suspected (34 C.F.R. §300.304; OSEP, 2021).

What Looks Like a Language Difference vs. What Might Signal a Disability

Language differences typically affect vocabulary, grammar, and

comprehension in English — especially early in language learning. In contrast:

- Dyslexia primarily affects word-level reading skills, including decoding, spelling, and accurate word recognition.
- Dysgraphia affects written expression, spelling, handwriting, and the organization of ideas.
- A key indicator of disability is the persistence of difficulties despite high-quality, evidence-based instruction and adequate opportunities to learn.

ELs are just as likely to have dyslexia as their native-English-speaking peers. The difference is that dyslexia might not appear as vividly in English because some of the same warning signs, such as phonological awareness difficulties, are often attributed to learning a new language (Sandman-Hurley, 2021). This is why some ELs are identified later in life, after years of missed opportunities for early intervention.

Evaluation teams should consider:

- The student's performance in both English and the home language, when possible
- Educational history and response to evidence-based instruction
- Language proficiency data and literacy development in the home language
- Family history

Because transparent (predictable) languages reveal phonological patterns more clearly, native language assessments that show fluency and orthographic difficulties can be immediate indicators of dyslexia across languages (Snowling, 2000).

For more information: [IDA Fact Sheet on English Learners and Dyslexia](#)

Evaluation of English Learners

Evaluation of ELs for dyslexia or dysgraphia must be comprehensive, culturally and linguistically responsive, and consistent with federal requirements for nondiscriminatory assessment. No single test or score should determine eligibility. Instead, teams should use multiple sources of information, including:

- Language proficiency data
- Educational history and home language literacy skills (when available)
- Classroom performance and teacher observations
- Response to evidence-based instruction

Federal regulations require that assessment tools not be discriminatory on the basis of race or culture and must be provided in the child's native language or mode of communication whenever feasible (34 C.F.R. §300.304). A comprehensive evaluation helps distinguish between difficulties related to language acquisition and those indicative of a language-based learning disability (IDA, 2022; Intensive Intervention Center, 2024; NCELA, 2023).

Screening and Early Identification

Early screening is essential for identifying EL students who may be at risk of reading difficulties. Because some risk factors for dyslexia such as phonemic awareness difficulties and slow naming speed overlap with typical early-stage English acquisition, it can be easy to miss warning signs or wrongly attribute them to language learning.



IES Recommendation: Establish Screening Procedures

The Institute of Education Sciences (IES) recommends that schools and districts establish consistent procedures and provide staff training to screen English Learners for reading problems and language delays. Screening should begin early and should not be delayed simply because a student is new to English.

For ELs who are identified as at risk through screening:

- Collect progress monitoring data more frequently than the standard three times per year.

- For students at moderate risk, monitor every two to four weeks.
- For students at high risk, monitor weekly or bi-weekly so instructional decisions can be made quickly.

Frequent data collection helps teams determine whether a student is responding to instruction or needs additional support without waiting until the end of a school year to find out.

Evidence-Based Practices for Equitable Support

Accurate identification is only one part of equitable support for ELs. Students also need instruction that is both linguistically responsive and grounded in the science of reading and writing development. Without systematic, evidence-based practices, ELs remain at risk for academic difficulty regardless of eligibility status.

Tier 1 Core Instruction

ELs who struggle to read require the same access to effective, evidence-based Tier 1 core instruction as their native-English-speaking peers. This means explicit instruction and modeling across all strands of Scarborough's Reading Rope, as outlined in Chapter 4 of this handbook. ELs must also have access to English Language Development (ELD) instruction and scaffolds.

Fortunately, many of the strategies used to support students with dyslexia are already embedded in good ELD instruction, including instruction on speech perception, phonemic and phonological awareness, and sound-symbol connections. Both groups benefit from:

- Instruction delivered in multiple modes: reading, writing, listening, and speaking
- Explicit, systematic, cumulative literacy instruction
- Diagnostic teaching based on ongoing data

Intensive Small-Group Intervention

When Tier 1 instruction is not enough, struggling readers should receive intensive small-group reading intervention. Research consistently shows that small, targeted groups with a skilled teacher or interventionist produce stronger outcomes than whole-class instruction alone for students with significant reading needs.



IES Recommendation: Small-Group Intervention

The IES practice guide recommends providing regular, intensive small-group instructional intervention to ELs who are struggling with literacy and English language development. These groups should be small enough to allow for frequent teacher-student interaction and immediate feedback.

Small-group intervention for ELs should:

- Target specific skill gaps identified through assessment data
- Use explicit and systematic structured literacy approaches
- Build oral language and vocabulary alongside decoding and fluency skills
- Be delivered consistently and with fidelity
- Explicit instruction in comprehension

Academic Vocabulary Instruction

Vocabulary is one of the most important factors in reading comprehension and one of the biggest challenges for ELs. Simply encountering a word once is rarely enough. Students need repeated, meaningful exposure to key words across multiple days and contexts.



IES Recommendation: Intensive Vocabulary Instruction (Strong Evidence)

IES identifies intensive academic vocabulary instruction as a high-priority, strongly-evidenced practice for English Learners. Effective vocabulary instruction involves teaching a targeted set of academic words in depth over several days using a variety of activities that include reading, writing, speaking, and listening.

Effective vocabulary instruction for ELs looks like:

- Selecting a small set of high-utility academic words to focus on each week (rather than a long list of words introduced briefly)
- Consider pre-teaching new vocabulary to give students time to activate background knowledge, process word meanings, and place them within the context of the current learning. Students are more likely to participate in the larger group when they've had time to activate, process, and place lesson-specific vocab.

- Introducing words with student-friendly definitions, visuals, and examples- (Real, physical, everyday objects brought into the classroom to add connections)
- Revisiting those same words across multiple lessons and content areas
- Providing structured opportunities for students to use the words in speaking and writing
- Connecting new words to words students already know in their home language, when possible

Structured Writing Development

Writing is often underemphasized for ELs, but developing written English is a critical skill that supports both language acquisition and literacy. Students need regular, structured opportunities to practice writing, not just fill-in-the-blank responses, but sentence-level and paragraph-level writing that builds their ability to communicate ideas in English.



IES Recommendation: Structured Writing Practice

IES recommends providing regular, structured opportunities for ELs to develop written language skills. This includes sentence construction, paragraph organization, and extended writing all taught with explicit models, guided practice, and feedback.

Practical classroom approaches include:

- Sentence frames and sentence starters to scaffold early writing
- Explicit teaching of paragraph structure with visual models
- Regular short writing tasks tied to content vocabulary and topics
- Teacher modeling of the writing process (think-alouds)
- Provide gradual release model- I do, We do, You do
- Specific, constructive feedback on writing that is focused on both meaning and form

Peer-Assisted Learning

Structured peer learning is one of the most practical and effective tools for building both language and literacy skills in ELs. When students work with a

partner in a purposeful, structured way, they get more practice time, more exposure to language, and more opportunities to use English in a low-stakes setting.



IES Recommendation: Peer-Assisted Learning

IES recommends scheduling regular, structured peer-assisted learning opportunities for English Learners. Peer activities should be carefully structured, not simply free partner time, with clear roles, routines, and language supports so that all students participate meaningfully.

Effective peer-assisted learning for ELs includes:

- Partner reading and retelling with assigned roles (reader and listener/coach)
- Structured vocabulary activities where partners quiz or define words together
- Peer sentence-sharing and discussion using academic language frames
- Think-pair-share with scaffolded prompts that give students language to use

Note: For peer activities to be most effective, teachers should thoughtfully pair students, provide clear sentence frames or structures, and teach the routine explicitly before expecting students to work independently.

Providing Effective Feedback to ELs

ELs benefit from meaningful, specific, and immediate feedback from trusted adults. This allows students to develop new skills accurately without confusion or incorrect learning (Carnine et al., 2004). The three feedback types below are research-supported and easy to use during everyday instruction:

Type	Description	Example
Recasting	Do not focus on what is wrong, nor use this as a corrective measure. Instead, give a recap of the student's response with appropriate pronunciation, grammar, or usage while adding additional information if appropriate.	Teacher: Tell me about how an animal can survive in its habitat. EL Student: He survived with camivloge. Teacher: es, animals can survive by using camouflage to blend in with their surroundings.
Change the Mode of Response	This technique give the EL a choice when answering. It helps reduce the language demand but also allows for formative assessment of the student.	Teacher: What state of matter is coffee? Is it a solid or liquid? EL Student: A liquid. Teacher: You are right. Coffee is an example of a liquid. It can take the shape of its container.
Reteaching	This technique is used in response to a student with a misunderstanding of previously taught material. The teacher determines the intensity of reteaching, then provides an explicit instructional opportunity to reengage the student.	Teacher: What state of matter is coffee? EL Student: A solid. Teacher: A solid takes up a defined shape. A liquid takes the shape of its container like coffee. Coffee is a liquid. Let's say it together. EL Student and Teacher: Coffee is a liquid. Teacher: Now you say it. EL Student: Coffee is a liquid.

EL Feedback Types

*Modified from Teaching English Learners: A Supplementary LETRS Module (Arguelles, Baker, & Moats, 2011, pgs 13–18)*Key Principles from Current Research

According to Cárdenas-Hagan (2023), educators working with ELs should:

- Be knowledgeable about first and second language and literacy development (L1–L2)
- Capitalize on first language literacy to explicitly develop the second language
- Explicitly teach language and literacy goals across content areas
- Use cross-linguistic features of language and implement word-learning strategies
- Be culturally and linguistically responsive in all instructional decisions

Progress Monitoring and Data-Based Decision Making

Ongoing progress monitoring is essential to ensure that ELs receive timely, appropriate, and effective support. Systematic data collection helps educators determine whether students are responding to high-quality instruction and targeted interventions before considering referral for special education.

For ELs, progress monitoring must be both academically rigorous and linguistically responsive, using multiple data sources:

- Curriculum-based measures
- Classroom performance and work samples
- Language proficiency growth data
- Observational data from teachers and specialists
- Ensure that English Language Academic Plans (ELAPs) are in place and accommodations are followed by all teachers

Interpretation of results requires careful consideration of the student's stage of English language development, prior educational experiences, and, when available, home language literacy skills (National Academies of Sciences, Engineering, and Medicine, 2017; Vaughn et al., 2019; NCELA, 2023).



IES Guidance on Monitoring Frequency

For ELs at risk of reading difficulties, collect progress-monitoring data more than 3 times per year. For students identified as high risk, monitor weekly or bi-weekly to allow timely instructional adjustments. Frequent data collection is not about paperwork, it's about catching problems early and responding quickly.

Decisions should never rely on a single score or short-term trend. Teams should examine patterns of growth over time and responsiveness to evidence-based intervention delivered with fidelity. Consistent with IDEA requirements, data-based decision making helps ensure that students are neither referred prematurely due to limited English proficiency nor denied evaluation when persistent, language-independent literacy difficulties are evident (34 C.F.R. §300.304; OSEP, 2021).

WIDA in Oklahoma: What Educators Need to Know

Oklahoma is a WIDA member state. WIDA ACCESS for ELLs is the required annual English language proficiency assessment for all identified EL students. Students must achieve a Composite score of 4.8 or higher to exit EL services. A student's current WIDA proficiency level is essential context when interpreting literacy screening data and making decisions about dyslexia evaluation.

The table below provides practical guidance on how to interpret reading difficulties at each WIDA proficiency level:

WIDA Level	What It Means	Dyslexia Screening Guidance
1–2 (Entering/Emerging)	Very limited English proficiency; reading/writing difficulties are expected	Difficulties almost certainly reflect language acquisition. Gather home language data before drawing any conclusions about disability.
3 (Developing)	Emerging reading and writing in English; errors are common	Overlapping zone — both language acquisition and dyslexia are possible. Use cross-linguistic data and response to instruction to guide decisions.
4–5 (Expanding/Bridging)	Increasing independence in English literacy	Persistent decoding, fluency, or spelling difficulties at this level warrant evaluation. Language acquisition alone is less likely to explain ongoing struggles.
6 (Reaching)	Comparable to native English-speaking peers	Language is no longer the primary factor. Evaluate reading difficulties as you would for any student.



Dually Identified Students (EL + IEP)

Students who are both active ELs and eligible for special education are dually identified and must receive both EL services and special education services simultaneously — neither can replace the other.

Beginning in 2025–2026, Oklahoma IEP teams must document WIDA ACCESS accommodations in EdPlan for all qualifying K–12 dually identified students. Any accommodations must be grounded in the student's disability and reflected in the IEP or 504 Plan.

Federal guidance is clear: a student's EL status cannot be used to delay or deny a special education evaluation when a disability is suspected (34 C.F.R. §300.304).

For more information: [OSDE Office of English Language Proficiency](#) | wida.wisc.edu

Cross-Linguistic Transfer and Intervention Considerations

Research indicates that foundational literacy skills, particularly phonological awareness and decoding, can transfer across languages. Students who demonstrate phonological processing weaknesses in their first language may experience similar challenges when learning to read in English.

When feasible, strengthening literacy skills in the home language can support the development of English literacy. However, intervention does not need to be delayed until first-language remediation occurs. Evidence-based literacy instruction can be delivered in English while simultaneously supporting home-language development when possible.

The presence of phonological weaknesses across languages strengthens the likelihood of a language-based learning disability such as dyslexia, rather than a difference related solely to English acquisition (IDA, 2022; National Academies, 2017).

The Importance of Home Language and the Benefits of Multilingualism

Maintaining and developing a child's home language is not a barrier to English acquisition, it is a foundation for it. Research consistently shows that school readiness and long-term academic success for dual language learners are directly tied to mastery of their home language. A strong foundation in one language supports the learning of additional languages, including English (Head Start Early Childhood Learning and Knowledge

Center, 2026).

Educators and families should understand that using a child's home language at home does not cause confusion or slow down English development. On the contrary, exposure to rich language experiences in any language: reading, storytelling, singing, and conversation builds the underlying cognitive and linguistic skills that transfer across languages.

Benefits of multilingualism are well-documented. According to the American Speech-Language-Hearing Association (ASHA), multilingual individuals tend to demonstrate advantages in learning new words and languages, understanding mathematical concepts, problem-solving, perspective-taking, and sustaining focused attention. These are assets that benefit students academically and beyond school.

Educators can honor students' multilingualism by:

- Encouraging families to read, sing, and tell stories with their children in the home language
- Connecting new English vocabulary to words students already know in their home language
- Using multilingual books, music, and materials in the classroom when possible
- Affirming students' multilingual identities as strengths, not deficits

It is also important to remember that multilingual children develop speech and language skills just as other children do. When difficulties arise, they appear across all languages not just in English. This cross-language pattern is a key indicator that can help distinguish a language-based learning disability from typical second-language acquisition (ASHA, 2025).

Family Engagement and Collaborative Practices

Equitable support for ELs must include meaningful family engagement and interdisciplinary collaboration. Families hold essential knowledge about a child's language history, early literacy development, cultural context, and prior educational experiences, information that cannot be gathered from tests alone.

Federal regulations require that parents be active participants in evaluation

and eligibility processes and that communication occur in the family's native language or preferred mode whenever feasible (34 C.F.R. §300.304; OSEP, 2021).

Effective collaboration involves:

- General educators, ESL specialists, reading interventionists, and special education personnel working together within an MTSS framework
- Regularly sharing data and observations across roles
- Actively inviting and incorporating family input not just informing families of decisions
- Using qualified interpreters or translated materials to ensure genuine communication

Such partnerships reduce the risk of misidentification, strengthen intervention planning, and promote shared accountability for student outcomes.

Professional Resources

The following resources provide practical guidance for supporting literacy development across languages:

American Educator - https://www.aft.org/ae/summer2026/cavazos_goldenberg

ASHA-American Speech-Language Hearing Association-
<https://www.asha.org/public/speech/development/learning-more-than-one-language/>

Center for the Success of English Learners - csecenter.org

Colorín Colorado - [Literacy instruction for multilingual learners](#)

Headstart Culture and Language - <https://headstart.gov/culture-language/article/importance-home-language-series?redirect=eclkc>

IES Practice Guide - [Teaching Academic Content and Literacy to English Learners](#)

International Dyslexia Association - [English Learners and Dyslexia](#)

Meadows Center - [Structured literacy for multilingual students](#)

MTSS4ELs - [Frameworks for supporting ELs in tiered systems](#)

WELLS (Working with English Language Learners with Speech Sound Disorders) - [Valley Speech](#)

WIDA Oklahoma-

<https://wida.wisc.edu/about/consortium/okhttps://oklahoma.gov/education/services/english-language-proficiency/wida-eld-standards.html>

English Learners represent a diverse and dynamic population whose linguistic assets enrich schools, yet whose needs require careful, informed, and equitable professional practice. Effective support begins with clear definitions and an understanding of the heterogeneity within the EL population, followed by critical attention to the risks of overidentification and under identification in special education.

Distinguishing between language difference and disability demands comprehensive, nondiscriminatory assessment practices, thoughtful analysis of language and literacy development across contexts, and adherence to federal guidance that prohibits identification based primarily on limited English proficiency.

Equitable practice extends beyond accurate identification to the implementation of evidence-based, linguistically responsive instruction, including intensive small-group intervention, academic vocabulary development, structured writing practice, and peer-assisted learning, all delivered within a Multi-Tiered System of Supports framework. Systematic progress monitoring, meaningful family engagement, and interdisciplinary collaboration complete the picture.

Ensuring that EL/multilingual learners receive appropriate, timely, and high-quality instruction and services is not only a matter of compliance, it is a matter of educational equity and professional responsibility. These practices align with Oklahoma's commitment to equitable literacy outcomes within a Multi-Tiered System of Supports framework.

Co-Occurring Disabilities

It is not unusual for someone with a learning disability to also be identified with a co-occurring disability (often referred to as a co-morbidity in medical settings). These difficulties vary in severity from mild to profound and will impact each person differently. Some neurodevelopmental conditions have an overlap in symptoms which can increase the impact for an individual. It is more common for students to have co-existing conditions than not. This should be taken into consideration during the referral and evaluation process.

Dyslexia

Description of Condition: Dyslexia is a specific learning disability that affects an individual's ability to read and spell. It involves difficulties in areas such as phonological and orthographic awareness, memory, rapid naming, and perceptual speed.

Possible signs/Characteristics: Individuals with dyslexia may experience difficulty learning letter names and sounds, slow and labor-intensive reading, poor spelling, and reading errors that do not correlate with the text. They may also confuse similar words.

Prevalence: Dyslexia is estimated to affect 15-20% of the population, making it a common learning disability.

Co-Occurring Rates: Dyslexia often co-occurs with other conditions. Up to 40% of individuals with ADHD may also have dyslexia. Among children diagnosed

with dyslexia, 50% meet the criteria for another diagnosis. Additionally, dyslexia and dyscalculia co-occur in approximately 50% of cases. Emotional symptoms, such as anxiety, are frequently reported by adults with dyslexia.

Dysgraphia

Description of Condition: Dysgraphia is a Specific Learning Disability (SLD) that affects how children acquire and use written language, impacting their ability to express thoughts effectively through writing.

Possible Signs/Characteristics: Dysgraphia can manifest in motor processing difficulties, such as trouble forming letters, awkward or painful pencil grip, improper letter spacing, and messy handwriting. Additionally, it

may involve information processing challenges, including difficulty organizing thoughts and expressing them in written form.

Prevalence: Research indicates that 10-34% of children experience difficulties with writing, highlighting the significance of this condition in educational settings.

Co-Occurring Rates: Dysgraphia often co-occurs with other learning disabilities, with approximately 70% of individuals affected by multiple conditions. Furthermore, 30-40% of children with writing difficulties also face challenges with reading.

Dyscalculia

Description of Condition: Dyscalculia is a learning disability that affects an individual's ability to understand and apply mathematical concepts and skills.

Possible Signs/Characteristics: Individuals with dyscalculia may experience difficulty connecting numbers to quantities, comparing amounts, recognizing quantities without counting, recalling basic math facts, making sense of money and estimating, sorting out directions, and reading time on an analog clock.

Prevalence: Dyscalculia affects approximately 5-7% of the population. (Butterworth et al., 2011).

Co-occurring Rate: Dyscalculia has a reported co-occurrence rate with dyslexia of up to 40% (Pedemonte et al., 2024). It is also thought to frequently co-occur with ADHD, although specific rates are not well established.

Developmental Language Disorder

Description of Condition: Developmental Language Disorder (DLD) is a neurodevelopmental condition that affects the ability to learn, understand, and use language. These difficulties are not attributable to other conditions.

Possible Signs/Characteristics:

- *In Younger Children:* Delayed sentence formation, difficulty understanding spoken instructions, and frequent grammatical errors.
- *In Older Students/Adults:* Limited use of complex sentences, challenges

in word retrieval, disorganized storytelling or writing, frequent grammatical and spelling errors, and difficulty interpreting figurative language.

Prevalence: Approximately 7.5% of individuals are affected by DLD (Norbury et al., 2016).

Co-occurring Rates: Over 50% of children with DLD also have dyslexia (Adlof and Hogan, 2018). Additionally, individuals with DLD are six times more likely to experience reading difficulties and four times more likely to struggle with mathematics (Young et al., 2012).

Attention-Deficit/Hyperactivity Disorder (ADHD)

Description of Condition: Attention-Deficit/Hyperactivity Disorder (ADHD) is a chronic condition characterized by patterns of inattention, hyperactivity, or impulsivity that interfere with functioning or development. It is categorized into three subtypes: predominantly inattentive, predominantly hyperactive-impulsive, and combined type.

Possible Signs/Characteristics: Individuals with ADHD may exhibit difficulty completing tasks, overlooking details, making careless mistakes, struggling with sustained attention, being easily distracted, forgetfulness in daily activities, fidgeting or squirming while seated, feelings of restlessness, and misplacing items needed for tasks.

Prevalence: ADHD affects approximately 7.2% of children worldwide, according to research by Thomas et al. (2015).

Co-Occurring Rates: There is a 30-40% comorbidity rate with dyslexia, and up to 60% of children with ADHD may also have a learning disorder.

Anxiety

Description of Condition: Anxiety Disorder is characterized by excessive and persistent worry about various everyday issues, lasting for a period of six months or more.

Possible Signs/Characteristics: Individuals with anxiety may exhibit symptoms such as persistent fear or worry, irritability or anger, physical symptoms like stomach aches, headaches, or fatigue, and difficulties with sleeping.

Prevalence: anxiety affects approximately 1-3% of children and adolescents, highlighting its impact on younger populations.

Co-Occurring Rates: Research indicates that nearly 29% of students with a specific learning disability (SLD) also experience an anxiety disorder, demonstrating a significant overlap between these conditions.

Understanding Developmental Coordination Disorder (DCD)

Description of Condition: Developmental Coordination Disorder (DCD), also known as Dyspraxia, is a neurodevelopmental disorder that primarily affects physical coordination and motor planning. It is important to note that DCD is not classified as a learning disability.

Possible Signs/Characteristics:

- Difficulties with coordination and clumsiness.
- Challenges in performing gross motor movements such as jumping, skipping, catching, and kicking a ball.
- Struggles with fine motor tasks, which may include writing, buttoning, or using utensils.

Prevalence: Research indicates that at least 5% of school-aged children are affected by DCD.

Co-Occurring Rates

- Approximately 50% of children with dyslexia also have dyspraxia (Kaplan et al., 1998).
- Half of the students diagnosed with dyspraxia are also diagnosed with ADHD.
- DCD frequently co-occurs with other neurodevelopmental disorders, including ADHD, dyslexia, Developmental Language Disorder (DLD), dysgraphia, and autism.

Understanding Twice Exceptional Students

Description of Condition: Twice exceptional (2E) students are individuals who are both intellectually gifted, as determined by standardized assessments, and have a learning disability.

Possible Signs/Characteristics: These students often exhibit superior oral vocabulary, extreme curiosity and imagination, clear peaks and valleys in diagnostic profiles, and advanced ideas and opinions.

Prevalence: It is estimated that 2-5% of children are considered twice exceptional.

Co-Occurring Rates: Research indicates that up to 14% of gifted children may also have a learning disability.

Autism Spectrum Disorder

Description of Condition: Autism Spectrum Disorder (ASD) is a neurological and developmental condition that affects individuals' abilities to interact socially, communicate effectively, learn, and exhibit typical behavioral patterns.

Possible Signs/Characteristics: Individuals with ASD may experience challenges in communication and social interactions, difficulty adapting to changes in routine, exhibit restrictive or repetitive behaviors such as echolalia or intense focus on specific topics, and display stereotypical movements.

Prevalence: According to the CDC, the incidence of ASD is approximately 1 in 36 children aged 8 years in the United States.

Rate of Co-occurrence: Autism and reading disorders co-occur at rates ranging from 6% to 30%, with variability depending on whether the conditions are comorbid or if symptoms overlap.

Oppositional Defiant Disorder (ODD)

Description of Condition: This condition is characterized by recurrent patterns of defiance and hostile behaviors, which can range from mild to severe.

Possible Signs/Characteristics: Common indicators include frequent temper tantrums or anger outbursts, arguments with adults or authority figures, active defiance to follow requests, and intentionally upsetting others.

Prevalence: Prevalence rates vary between 2-16% among children, with community sample estimates ranging from 1-3% according to the NIH.

Co-occurring Rate: There is a high co-occurrence with ADHD. Additionally, behavioral challenges can impact learning abilities, such as reading, which in turn can exacerbate behavior problems.

Ongoing research is happening in the areas of dyslexia and co-occurring disabilities with an emphasis on family history and stacking of multiple identifications. Researchers are highlighting family history as a priority indicator. In asking for family history, it is important to note parents may not have been formally identified with dyslexia, and this may note a family member's struggles with reading in school.

Individual Differences

It is important to remember each child is different. Dyslexia, dysgraphia, and dyscalculia occur across a spectrum. Identify each child's unique strengths and challenges and support the child's personal learning style (the way the child learns best). Help them continue to develop their strengths and allow them to engage in activities they enjoy (e.g., sports, art, music, etc.). Acknowledge their ability to learn despite their challenges. Encourage ways of teaching and learning that optimize the child's abilities.

Key Takeaways

1. Can a student be identified as gifted and have dyslexia, dysgraphia, and/or dyscalculia?

Students can be gifted and have dyslexia at the same time. To succeed, both their giftedness and their challenges need to be addressed. They need to be challenged in areas in which they're gifted. They also need support in the areas where they struggle, just like any other student with learning or attention issues.

2. Can an English Learner (EL) have dyslexia, dysgraphia, and/or dyscalculia?

Dyslexia appears in all cultures and languages in the world with a written language, including those that do not use an alphabetic script such as Korean and Hebrew (Ziegler & Goswami, 2005). Dysgraphia and dyscalculia can also appear with ELs as they are deficits that would be present in their native language as well as in English.

3. Can students with dyslexia, dysgraphia, and/or dyscalculia have other co- occurring disabilities?

Yes, students with dyslexia, dysgraphia, and/or dyscalculia can have other co- occurring disabilities, such as ADHD, dyspraxia, oppositional defiant disorder, anxiety, and challenges with organization and executive function. It is important to remember these challenges impact each student differently, and their specific deficits should be addressed on an individual basis.

Appendix

FAMILY QUESTIONNAIRE

Administration

The classroom teacher responsible for the student's reading instruction should orally administer or request the questionnaire be completed by a family member.

Note: Additional informal classroom diagnostics should not be postponed if this teacher is unable to complete the family questionnaire.

Student Information

Student	Teacher
Grade	Date

Family Questionnaire

Please mark **Yes** or **No** for each question and provide additional information when applicable.

Question	Yes	No	If Yes, Explain
Do you have any concerns about your child's work at school?	☐	☐	
Has your child received any special instruction or tutoring at school or privately?	☐	☐	
Has your child repeated a grade?	☐	☐	
Has your child had a speech or language problem?	☐	☐	
Has your child ever been critically or chronically ill?	☐	☐	
Does your child have any physical problems that you feel may cause difficulty in learning?	☐	☐	
Does your child seem to have difficulty following directions?	☐	☐	
Does your child seem to have more difficulty in reading, writing, and spelling than in most other subjects?	☐	☐	
Does your child need a significant amount of help to complete homework?	☐	☐	
Does your child enjoy being read to by adults?	☐	☐	
Does your child hesitate to read to you?	☐	☐	

Question	Yes	No	If Yes, Explain
Is reading difficult for any family member (Parent, Grandparent, etc.)?	☐	☐	

Additional Comments

Questionnaire Completion Information

Completed by	Relationship	Date

Components of Structured Literacy Intervention Checklist

This rubric is designed to help educators evaluate intervention programs. It identifies the necessary components of structured literacy interventions and will help to identify areas that may need to be supplemented with additional evidence based instructional practices.

Intervention Name:**Date:**

Does the intervention program include all components and principles of structured literacy instruction?

Y	N	Phonemic Awareness
		Identifying Sounds in Words
		Segmenting Sounds in Words
		Blending Sounds in Words
		Manipulating Sounds in Words

Y	N	Sound-Symbol Association
		Connecting Sounds & Letters for Both Reading (visual) and Spelling (auditory) to Mastery
		Blending of Sounds & Letters into Words to Mastery
		Segmenting Whole Words into Individual Sounds to Mastery

Y	N	Syllable Instruction
		6 Basic Syllable Types: Identifying the Sound of the Vowel Within a Syllable
		Syllable Division Patterns: Enhancing Accuracy for Reading Unknown Words to Mastery

Y	N	Orthography
		Focusing on Spelling Patterns as well as Word Meanings, Parts of Speech and Word Origins
		Providing Explicit Instruction in Letter Formation

Y	N	Morphology
		Analyzing Roots, Base Elements, Prefixes, and Suffixes in Words

Y	N	Grammar/Syntax
		Focusing on Grammar & Sentence Variations
		Analyzing Mechanics of Language & Function of Word Order to Convey Meaning

Y	N	Vocabulary
		Teaching Words Explicitly in Multiple Settings
		Integrating Synonyms, Antonyms and Multiple Meanings into Discussions
		Providing Visual Representations for Concepts Identified During Discussions
		Discussing Idioms When Appropriate to Situations

Y	N	Fluency
		Integrating Accuracy, Rate and Prosody
		Using of Normative Data to Ensure Adequate Progress

Y	N	Reading Comprehension
		Establishing a Coherent Mental Model of the Text's Content to Derive Meaning
		Integrating Ideas Within Text and Between Texts
		Using Text Structure to Accomplish a Goal (i.e., explaining main idea or recalling details)
		Teaching Strategies Related to the Purposeful Use of Text Structure with Opportunities to Apply in New Situations
		Accessing Background Knowledge & Identifying Language in Text that May be Problematic (indirect meanings, figurative language, complex sentences, pronoun referents, new vocabulary)
		Using Graphic Organizers

Y	N	Delivery of Intensified Instruction
		Defines Training Standards and Fidelity of Implementation Measures
		Provides for Explicit Instruction in One Language Concept at a Time
		Sequences Systematic and Cumulative Instruction
		Provides Multimodal Instructional Practices
		Includes Assessments for Diagnostic Teaching (Pre/Post Tests, Mastery Checks)
		Establishes Guidelines for Student Grouping (Size, Homogenous Needs)

Notes

Knowledge and Practice Standards Self-Study Checklist

Aligned to the IDA Knowledge and Practice Standards for Teachers of Reading, this checklist can assist teachers in assessing their current knowledge base about the science of reading in order to develop meaningful professional development plans.

Name:

Date:

Rating Scale: This simple rating scale may help teachers evaluate the amount of knowledge they possess for each of the competencies and identify areas where they may benefit from professional development.

3 – I Know It Well Enough to Use It: I have sufficient understanding and experience to operate at a full professional level with this information and I can generalize basic principles to effectively function in both predictable and new situations with my students.

2 – I Have Some Knowledge: My knowledge is newly developing in this area. I have a general understanding of key principles but limited or no applied experience using this with my students. I am capable of using this with coaching and support, in simple situations.

1 – I Have No Knowledge: I have no understanding of this information and will need to learn more.

Level Identification: Many of the competencies are followed by the designation of Level 1 or Level 2. These designations indicate whether a competency should be met by:

Level 1: teachers or any staff member whose responsibilities include general reading instruction for all students, such as a classroom teacher

Level 2: specialists or any staff member whose responsibilities include delivering reading interventions to struggling readers, such as a therapist, a reading specialist, an intervention teacher, a basic skills instructor, a Learning Disabilities Teacher-Consultant, a special education teacher, etc.

Foundation Concepts of Oral and Written Learning

Rating			Content Knowledge	Application
3	2	1		
			1. Understand and explain the language processing requirements of proficient reading and writing • Phonological (speech sound) processing • Orthographic (print) processing • Semantic (meaning) processing • Syntactic (sentence level) processing • Discourse (connected text level processing)	a. Explain the domains of language and their importance to proficient reading and writing (Level 1). b. Explain a scientifically valid model of the language processes underlying reading and writing (Level 2).
			2. Understand and explain other aspects of cognition and behavior that affect reading and writing • Attention • Executive function • Memory • Processing speed • Graphomotor control	a. Recognize that reading difficulties coexist with other cognitive and behavioral problems (Level 1). b. Explain a scientifically valid model of other cognitive influences on reading and writing, and explain major research findings regarding the contribution of linguistic and cognitive factors to the prediction of literacy outcomes (Level 2).
			3. Define and identify environmental, cultural, and social factors that contribute to literacy development (e.g., language spoken at home, language and literacy experiences, and cultural values).	Identify (Level 1) or explain (Level 2) major research findings regarding the contribution of environmental factors to literacy outcomes.
			4. Know and identify phases in the typical developmental progression of • Oral language (semantic, syntactic, pragmatic) • Phonological skill • Printed word recognition • Spelling • Reading fluency • Reading comprehension • Written expression	Match examples of student responses and learning behavior to phases in language and literacy development (Level 1).
			5. Understand and explain the known casual relationships among phonological skill, phonic decoding, spelling, accurate and automatic word recognition, text reading fluency, background knowledge, verbal reasoning skill, vocabulary, reading comprehension, and writing.	Explain how a weakness in each component skill of oral language, reading, and writing may affect other related skills and processes across time (Level 2).

Rating			Content Knowledge	Application
3	2	1		
			6. Know and explain how the relationships among the major components of literacy development change with reading development (i.e., changes in oral language, including phonological awareness; phonics and word recognition; spelling; reading and writing fluency; vocabulary; reading comprehension skills and strategies; written expression).	Explain how a weakness in each component skill of oral language, reading, and writing may affect other related skills and processes across time (Level 2).
			7. Know reasonable goals and expectations for learners at various stages of reading and writing development.	Given case study material, explain why a student is/is not meeting goals and expectations in reading or writing for his or her age/grade (Level 1).

Knowledge of the Structure of Language

Rating			Content Knowledge	Application
3	2	1		
Phonology (The Speech Sound System)				
			1. Identify, pronounce, classify, and compare the consonant and vowel phonemes of English.	a. Identify similar or contrasting features among phonemes (Level 1). b. Reconstruct the consonant and vowel phoneme inventories and identify the feature differences between and among phonemes (Level 2).
Orthography (The Spelling System)				
			2. Understand the broad outline of historical influences on English spelling patterns, especially Anglo-Saxon, Latin (Romance), and Greek.	Recognize typical words from the historical layers of English (Anglo-Saxon, Latin/ Romance, Greek) (Level 1).
			3. Define grapheme as a functional correspondence unit or representation of a phoneme.	Accurately map graphemes to phonemes in any English word (Level 1).
			4. Recognize and explain common orthographic rules and patterns in English.	Sort words by orthographic “choice” pattern; analyze words by suffix ending patterns and apply suffix ending rules (Level 1).
			5. Know the difference between “high frequency” and “irregular” words.	Identify printed words that are the exception to regular patterns and spelling principles; sort high frequency words into regular and exception words (Level 1).
			6. Identify, explain, and categorize six basic syllable types in English spelling.	Sort, pronounce, and combine regular written syllables and apply the most productive syllable division principles (Level 1).
Morphology				
			7. Identify and categorize common morphemes in English, including Anglo-Saxon compounds, inflectional suffixes, and derivational suffixes; Latin-based prefixes, roots, and derivational suffixes; and Greek based combining forms.	a. Recognize the most common prefixes, roots, suffixes, and combining forms in English content words, and analyze words at both the syllable and morpheme level (Level 1). b. Recognize advanced morphemes (e.g., chameleon or assimilated + prefixes) (Level 2).
Semantics				
			8. Understand and identify examples of meaningful word relationships or semantic organization.	Match or identify examples of word associations, antonyms, synonyms, multiple meanings and uses, semantic overlap, and semantic feature analysis (Level 1).
Syntax				
			9. Define and distinguish among phrases, dependent clauses, and independent clauses in sentence structure.	Construct and deconstruct simple, complex, and compound sentences (Level 1).
			10. Identify the parts of speech and the grammatical role of a word in a sentence.	a. Identify the basic parts of speech and classify words by their grammatical role in a sentence (Level 1). b. Identify advanced grammatical concepts (e.g., infinitives, gerunds) (Level 2).
Discourse				
			11. Explain the major differences between narrative and expository discourse.	Classify text by genre; identify features that are characteristic of each genre, and identify graphic organizers that characterize typical structures (Level 1).

			12. Identify and construct expository paragraphs of varying logical structures (e.g., classification, reason, sequence).	Identify main idea sentences, connecting words, and topics that fit each type of expository paragraph organization (Level 2).
			13. Identify cohesive devices in text and inferential gaps in the surface language of text.	Analyze text for the purpose of identify the inferences that students must make to comprehend (Level 2).

Structured Language Teaching: Phonology

Rating			Content Knowledge	Application
3	2	1		
			1. Identify the general and specific goals of phonological skill instruction.	Explicitly state the goal of any phonological awareness teaching activity (Level 1).
			2. Know the progression of phonological skill development (i.e., rhyme, syllable, onset-rime, phoneme differentiation).	a. Select and implement activities that match a student's developmental level of phonological skill (Level 1). b. Design and justify the implementation of activities that match a student's developmental level of phonological skill (Level 2).
			3. Identify the differences among various phonological manipulations, including identifying, matching, blending, segmenting, substituting, and deleting sounds.	Demonstrate instructional activities that identify, match, blend, segment, substitute, and delete sounds (Level 1).
			4. Understand the principles of phonological skill instruction: brief, multisensory, conceptual, and auditory-verbal.	a. Successfully produce vowel and consonant phonemes (Level 1). b. Teach articulatory features of phonemes and words; use minimally contrasting pairs of sounds and words in instruction; support instruction with manipulative materials and movement (Level 2).
			5. Understand the reciprocal relationships among phonological processing, reading, spelling, and vocabulary.	a. Direct students' attention to speech sounds during reading, spelling, and vocabulary instruction using a mirror, discussion of articulatory features, and so on as scripted or prompted (Level 1). b. Direct students' attention to speech sounds during reading, spelling, and vocabulary instruction without scripting or prompting (Level 2).
			6. Understand the phonological features of a second language or dialect, such as Spanish, and how they may interfere with English pronunciation and phonics.	Explicitly contrast first and second language phonological systems, as appropriate, to anticipate which sounds may be most challenging for the second language learner (Level 2).

Structured Language Teaching: Phonics and Word Recognition

Rating			Content Knowledge	Application
3	2	1		
			1. Know or recognize how to order phonics concepts from easier to more difficult.	Plan lessons with a cumulative progression of word recognition skills that build one on another (Level 1).
			2. Understand principles of explicit and direct teaching, model, lead, give guided practice, and review.	Explicitly and effectively teach (e.g., information taught is correct, students are attentive, teacher checks for understanding, teacher scaffolds students' learning) concepts of word recognition and phonics; apply concepts to reading single words, phrases, and connected text (Level 1).
			3. State the rationale for multisensory and multimodal techniques.	Demonstrate the simultaneous use of two or three learning modalities (to include listening, speaking, movement, touch, reading, and/or writing) to increase engagement and enhance memory (Level 1).
			4. Know the routines of a complete lesson format, from the introduction of a word recognition concept to fluent application in meaningful reading and writing.	Plan and effectively teach all steps in a decoding lesson, including single-word reading and connected text that is read fluently, accurately, and with appropriate intonation and expression (Level 1).
			5. Understand research-based adaptations of instruction for students with weaknesses in working memory, attention, executive function, or processing speed.	Adapt the pace, format, content, strategy, or emphasis of instruction according to students' pattern of response (Level 2).

Structured Language Teaching: Fluent, Automatic Reading of Text

Rating			Content Knowledge	Application
3	2	1		
			1. Understand the role of literacy in word recognition, oral reading, silent reading, comprehension of written discourse, and motivation to read.	Assess students' fluency rate and determine reasonable expectations for reading fluency at various stages of reading development, using research-based guidelines and appropriate state and local standards and benchmarks (Level 1).
			2. Understand reading fluency as a stage of normal reading development, as the primary symptom of some reading disorders; and as a consequence of practice and instruction.	Determine which students need a fluency-oriented approach to instruction, using screening, diagnostic, and progress-monitoring assessments (Level 2).
			3. Define and identify examples of text at a student's frustration, instructional, and independent reading level.	Match students with appropriate texts as informed by fluency rate to promote ample independent oral and silent reading (Level 1).
			4. Know sources of activities for building fluency in component reading skills.	Design lesson plans that incorporate fluency-building activities into instruction at sub-word and word levels (Level 1).
			5. Know which instructional activities and approaches are most likely to improve fluency outcomes.	Design lesson plans with a variety of techniques to build reading fluency, such as repeated readings of passages, alternate oral reading with a partner, reading with a tape, or rereading the same passage up to three times (Level 1).
			6. Understand techniques to enhance student motivation to read.	Identify student interests and needs to motivate independent reading (Level 1).
			7. Understand appropriate uses of assistive technology for students with serious limitations in reading fluency.	Make appropriate recommendations for use of assistive technology in general education classes for students with different reading profiles (e.g., dyslexia versus language disabilities) (Level 2).

Structured Language Teaching: Vocabulary

Rating			Content Knowledge	Application
3	2	1		
			1. Understand the role of vocabulary development and vocabulary knowledge in comprehension.	Teach word meanings directly using contextual examples, structural (morpheme) analysis, antonyms and synonyms, definitions, connotations, multiple meanings, and semantic feature analysis (Levels 1 and 2).
			2. Understand the role and characteristics of direct and indirect (contextual) methods of vocabulary instruction.	Lesson planning reflects: a. Selection of material for read-alouds and independent reading that will expand students' vocabulary. b. Identification of words necessary for direct teaching that should be known before the passage is read. c. Repeated encounters with new words and multiple opportunities to use new words orally and in writing. d. Recurring practice and opportunities to use new words in writing and speaking (Levels 1 and 2).
			3. Know varied techniques for vocabulary instruction before, during, and after reading.	
			4. Understand that word knowledge is multifaceted.	
			5. Understand the sources of wide differences in students' vocabularies.	

Structured Language Teaching: Text Comprehension

Rating			Content Knowledge	Application
3	2	1		
			1. Be familiar with teaching strategies that are appropriate before, during, and after reading and that promote reflective reading.	a. State purpose for reading, elicit or provide background knowledge, and explore key vocabulary (Level 1). b. Query during text reading to foster attention to detail, inference-making, and mental model construction (Level 1). c. Use graphic organizers, note-taking strategies, retelling and summarizing, and cross-text comparisons (Level 1).
			2. Contrast the characteristics of major text genres, including narration, exposition, and argumentation.	Lesson plans reflect a range of genres, with emphasis on narrative and expository texts (Level 1).
			3. Understand the similarities and differences between composition and text comprehension, and the usefulness of writing in building comprehension.	Model, practice, and share written responses to text; foster explicit connections between new learning and what was already known (Level 1).
			4. Identify in any text the phrases, clauses, sentences, paragraphs and “academic language” that could be a source of miscomprehension.	Anticipate confusions and teach comprehension of figurative language, complex sentence forms, cohesive devices, and unfamiliar features of text (Level 2).
			5. Understand levels of comprehension including the surface code, text base, and mental model (situation model).	Plan lessons to foster comprehension of the surface code (the language), the text base (the underlying ideas), and a mental model (the larger context for the ideas) (Level 2).
			6. Understand factors that contribute to deep comprehension, including background knowledge, vocabulary, verbal reasoning ability, knowledge of literary structures and conventions, and use of skills and strategies for close reading of text.	Adjust the emphasis of lessons to accommodate learners’ strengths and weaknesses and pace of learning (Level 2).

Structured Language Teaching: Handwriting, Spelling, and Written Expression

Rating			Content Knowledge	Application
3	2	1		
Handwriting				
			1. Know research-based principles for teaching letter naming and letter formation, both manuscript and cursive.	Use multisensory techniques to teach letter naming and letter formation in manuscript and cursive forms (Level 1).
			2. Know techniques for teaching handwriting fluency.	Implement strategies to build fluency in letter formation, and copying and transcription of written language (Level 1).
Spelling				
			3. Recognize and explain the relationship between transcription skills and written expression.	Explicitly and effectively teach (e.g., information taught is correct, students are attentive, teacher checks for understanding, teacher scaffolds students' learning) concepts related to spelling (e.g., a rule for adding suffixes to base words) (Level 1).
			4. Identify students' levels of spelling development and orthographic knowledge.	Select materials and/or create lessons that address students' skill levels (Level 1).
			5. Recognize and explain the influences of phonological, orthographic, and morphemic knowledge on spelling.	Analyze a student's spelling errors to determine his or her institutional needs (e.g., development of phonological skills versus learning spelling rules versus application of orthographic or morphemic knowledge in spelling) (Level 2).

Written Expression				
			6. Understand the major components and processes of written expression and how they interact (e.g., basic writing/transcription skills versus text generation).	Integrate basic skill instruction with composition in writing lessons (Levels 1 and 2).
			7. Know grade and developmental expectations for students' writing in the following areas: mechanics and conventions of writing, composition, revision, and editing processes.	a. Select and design activities to teach important components of writing, including mechanics/conventions of writing, compositions, and revision and editing processes. b. Analyze students' writing to determine specific instructional needs. c. Provide specific, constructive feedback to students targeted to students' most critical needs in writing. d. Teach research-based writing strategies such as those for planning, revising, and editing text. e. Teach writing (discourse) knowledge, such as the importance of writing for the intended audience, use of formal versus informal language, and various schemas for writing (e.g., reports versus narratives versus arguments) (Levels 1 and 2).
			8. Understand appropriate uses of assistive technology in written expression.	Make appropriate written recommendations for the use of assistive technology in writing (Levels 1 and 2).

Interpretation and Administration of Assessments for Planning Instruction

Rating			Content Knowledge	Application	Observable Competencies for Teaching Students with Dyslexia and Related Difficulties
3	2	1			
			1. Understand the differences among screening, diagnostic, outcome, and progress-monitoring assessments.	Match each type of assessment and its purpose (Level 1).	Administer screenings and progress monitoring assessments (Level 1).
			2. Understand basic principles of test construction, including reliability, validity, and norm-referencing, and know the most well-validated screening tests designed to identify students at risk for reading difficulties.	Match examples of technically adequate, well-validated screening, diagnostic, outcome, and progress-monitoring assessments (Level 1).	Explain why individual students are or are not at risk in reading based on their performance on screening assessments (Level 1).
			3. Understand the principles of progress-monitoring and the use of graphs to indicate progress.	Using case study data, accurately interpret progress-monitoring graphs to decide whether or not a student is making adequate progress (Level 1).	Display progress-monitoring data in graphs that are understandable to students and parents (Level 1).
			4. Know the range of skills typically assessed by diagnostic surveys of phonological skills, decoding skills, oral reading skills, spelling, and writing.	Using case study data, accurately interpret subtest scores from diagnostic surveys to describe a student's patterns of strengths and weaknesses and instructional needs (Level 2).	Administer educational diagnostic assessments using standardized procedures (Level 2).
			5. Recognize the content and purposes of the most common diagnostic tests used by psychologists and educational evaluators.	Find and interpret appropriate print and electronic resources for evaluating tests (Level 1).	Write reports that clearly and accurately summarize a student's current skills in important component areas of reading and reading comprehension (Level 2).
			6. Interpret measures of reading comprehension and written expression in relation to an individual child's component profile.	Using case study data, accurately interpret a student's performance on reading comprehension or written expression measures and make appropriate instructional recommendations.	Write appropriate, specific recommendations for instruction, and educational programming based on assessment data (Level 2).

Knowledge of Dyslexia and Other Learning Disorders

Rating			Content Knowledge	Application
3	2	1		
			1. Understand the most common intrinsic differences between good and poor readers (i.e., cognitive, neurological, and linguistic).	a. Recognize scientifically accepted characteristics of individuals with poor word recognition (e.g., overdependence on context to aid word recognition, inaccurate non-word reading) (Level 1). b. Identify student learning behaviors and test profiles typical of students with dyslexia and related learning difficulties (Level 2).
			2. Recognize the tenets of the NICHD/IDA definition of dyslexia.	Explain the reasoning or evidence behind the main points in the definition (Level 1).
			3. Recognition that dyslexia and other reading difficulties exist on a continuum of severity.	Recognize level of instructional intensity, duration, and scope appropriate for mild, moderate, and severe reading disabilities (Level 1).
			4. Identify the distinguishing characteristics of dyslexia and related reading and learning disabilities (including developmental language comprehension disorder, attention deficit hyperactivity disorder, disorders of written expression or dysgraphia, mathematics learning disorder, nonverbal learning disorders, etc.).	Match symptoms of the major subgroups of poor readers as established by research, including those with dyslexia, and identify typical case study profiles of those individuals (Level 2).
			5. Identify how symptoms of reading difficulty may change over time in response to development and instruction.	Identify predictable ways that symptoms might change as students move through the grades (Level 2).
			6. Understand federal and state laws that pertain to learning disabilities, especially reading disabilities and dyslexia.	a. Explain the most fundamental provisions of federal and state laws pertaining to the rights of students with disabilities, especially students' rights to a free, appropriate public education, an individualized educational program, services in the least restrictive environment, and due process (Level 1). b. Appropriately implement federal and state laws in identifying and serving students with learning disabilities, reading disabilities, and dyslexia (Level 2).

NJ Dyslexia Handbook - Knowledge and Practice Standards Self-Study Checklist Adapted from: Moats et al. (2010). Knowledge and Practice Standards for Teachers of Reading. International Dyslexia Association. <https://dyslexiaida.org/knowledge-and-practices/>

Sample Scope and Sequence Chart

Structured literacy instruction is systematic and cumulative. This sample scope and sequence illustrates what a progression of skills might typically look like in such programs. It is not, however, a comprehensive sample.

Level I Phonograms
Group 1: a /ă/, b, c, f, h, i /ī/, j, k, m, p, t
Group 2: g, o /ō/, r, l, n, th, u /ū/, ch, e /ē/, s, sh, d, w, wh, y (consonant), qu, v, x, z
Glued Sounds – all, ing, ong, ang, ung, ink, ank, onk, unk
Suffixes – -s /s/ and /z/, -ed /d/, /ēd/ and /t/
Bonus Letters – ff, ll, ss, zz
Concepts – digraph, blend, short and long vowel sound, trigraph
Double Vowels: ai, ay, ee, ea, oi, oy, oo, ow, ie, ou, y (vowel)
Syllable Types – closed (one and two syllables), open, and vowel-consonant-e
Level II Phonograms
Closed syllable exceptions: ind, ild, ost
r-controlled sounds: ar, or, ir, er, ur
Suffixes – es, er, est, ly, y, ful, less, ness, en, ment
Prefixes – un, dis, mis, in, non, pre, re
Concepts – diphthong, compound word, base word, present tense, past tense, singular, plural, contraction
Syllable Types – r-controlled, vowel pair
Level III Phonograms
Vowel Sounds: ea /ē/ and /ā/, oe, c before i, e, y, g before i, e, y, igh, ew, au, aw, ue, ou, eu
Suffixes – -able, -ive, -ion
Prefixes – anti-, con-, de-, ex-, inter-, per-, pre-, pro-, semi-, sub-, super-
Latin Roots – cept, dict, duct, fort, ject, port, rupt, sist, spect, vert, flex, fic, fin, gen, mit, pos, plic, scrib, vis
Syllable Types – consonant-le
Level IV Phonograms
Vowel Sounds: ei, eigh, ey, ar (beggar), or (doctor), wa (want), u (push, pull), ou (country, cousin)
Silent Letters – wr, kn, gn, mb, gh, stle, ps, pn, alk, ough, augh
Additional Sounds: ch (Christmas), ch (Chicago), ture, ti, si, ci
Suffixes – -ture, -ous, -al, -ic, -ure, -age, -an, -able, -ible, -ate, -ite, -ine, -ology
Prefixes – uni-, bi-, micro-, sy-, hyper-, hydro-, tele-, phone-, auto-

NJ Dyslexia Handbook Sample Scope and Sequence

Dyslexia Checklist for Teachers

Dyslexia Checklists for Teachers are not required for use by the Oklahoma State Department of Oklahoma but can provide additional informal data collection. When a teacher reviews this checklist with a student in mind, they may identify needs for students they may have overlooked because they are not behavior issues or can verbally compensate for their deficit. The checklists provided can be given in elementary and middle/ high school asking relevant questions associated with risk of dyslexia. Teacher observations are critical for student identifications along with the Family Checklist.

Dyslexia Checklist for Teachers: Elementary Checklist

Administration: The checklist should be completed for 1st, 2nd, and 3rd grade students as part of the Universal Screening process. It should be completed for kindergarten students at the beginning of the Spring semester. The classroom teacher(s) responsible for the students' reading instruction should complete the checklists. Mark a check beside each behavior observed in the classroom.

Student _____ Grade _____
Teacher _____ Date _____

Alphabet Knowledge:

- ☐ Difficulty learning and remembering the names of letters in the alphabet.
- ☐ Difficulty sequencing the alphabet orally (without singing).
- ☐ Difficulty writing the letters of the alphabet in sequence without a model.
- ☐ Difficulty naming the vowels.

Sound/Symbol Recognition:

- ☐ Difficulty associating letters with sounds, such as the letter t with /t/ sound.
- ☐ Difficulty recognizing and/or generating rhyming patterns.

Phonological Awareness:

- ☐ Difficulty pulling words apart into individual sounds (ex. mat = /m/ /a/ /t/).
- ☐ Difficulty blending sounds to form words.

Reading:

- ☐ Slow in acquiring reading skills.
- ☐ Difficulty sounding out words using phonics skills, often making guesses.
- ☐ Difficulty identifying basic sight words.
- ☐ Oral reading is slow and laborious.

Spelling:

- ☐ Difficulty using the correct short vowels in spelling words.
- ☐ Difficulty spelling words correctly in connected text tasks, however, may be able to memorize words for a spelling test.
- ☐ Frequently makes spelling errors that involve changing the order of letters within a word (ex. left/felt; past/taps).

Handwriting:

- ☐ Handwriting is often illegible or messy.
- ☐ Pencil grip is awkward, tight, or fist-like.
- ☐ Difficulty getting thoughts on paper.

Other Considerations:

- ☐ Reading, writing or spelling skills are below what you would expect in view of perceived intellectual, academic, and/or oral language ability.
- ☐ Difficulty: finding the right word: and/or seems to hesitate when trying to answer a direct question.
- ☐ Difficulty with organization, memory and/or following directions.
- ☐ Difficulty with spatial orientation (ex. left/right, before/after).
- ☐ Homework takes longer than typical to complete.

If any item is checked, the teacher should administer the Informal Classroom Diagnostic to the student.

- ☐ **Student does NOT demonstrate any of the behavior listed above.**

Teacher signature _____ **Date:** _____

Adapted from the Alabama Scottish Rite Foundation Learning Center Checklist

Dyslexia Checklist for Teachers: Middle School/High School Checklist

Administration: The checklist should be completed for middle and high school grade students as part of the Universal Screening process. The classroom teacher(s) responsible for the students' reading and or English instruction should complete the checklist. Mark a check beside each behavior observed in the classroom.

Student _____ Grade _____
Teacher _____ Date _____

Reading:

- ☐ Difficulty sounding out words using phonics skills, often making guesses.
- ☐ Difficulty identifying basic sight words.
- ☐ Oral reading is slow and laborious with many inaccuracies.

Spelling:

- ☐ Difficulty with spelling.
- ☐ Often spells the same word differently within the same writing task.
- ☐ Frequently makes spelling errors that involve changing the order of letters within a word (ex. left/felt; past/taps)

Handwriting/Written Expression:

- ☐ Handwriting is often illegible or messy.
- ☐ Pencil grip is awkward, tight, or fist-like.
- ☐ Difficulty getting thoughts on paper.
- ☐ Often procrastinates or avoids writing tasks.
- ☐ Difficulty summarizing or outlining information in writing.

Other considerations:

- ☐ Reading, writing or spelling skills are below what you would expect in view of perceived intellectual, academic, and/or oral language ability.
- ☐ Difficulty: finding the right word: and/or seems to hesitate when trying to answer a direct question.
- ☐ Difficulty with organization, memory and/or following directions.
- ☐ Difficulty with spatial orientation (ex. left/right, before/after).
- ☐ Homework takes longer than typical to complete.
- ☐

If any item is checked, the teacher should administer the Classroom Diagnostic Screener to the student.

- ☐ **Student does NOT demonstrate any of the behaviors listed above.**

Teachers signature _____ Date _____

Adapted from the Alabama Scottish Rite Foundation Learning Center Checklist

Dysgraphia: Teacher Observation Checklist

Handwriting & Letter Formation

- ☐ Inconsistent letter size
- ☐ Mixes uppercase and lowercase letters incorrectly
- ☐ Letters do not rest on the baseline
- ☐ Tall letters do not reach the top line
- ☐ Descending letters (g, j, p, q, y) do not drop below the line
- ☐ Letters are poorly formed or difficult to recognize
- ☐ Frequent erasing or self-correcting letter formation
- ☐ Awkward pencil grasp
- ☐ Inefficient pressure: Overly light or too heavy, causing hand fatigue (tires quickly)
- ☐ Letter and number reversals beyond early stages of writing.
- ☐ The same letters can be written differently each time, but often from the bottom up.

Spacing & Placement

- ☐ Words are too close together
- ☐ Words are spaced too far apart
- ☐ Inconsistent spacing within words
- ☐ Margins are not maintained
- ☐ Writing drifts up or down the page
- ☐ Difficulty aligning columns of numbers in math problems.

Writing Fluency

- ☐ Writes significantly slower than peers
- ☐ Cannot finish written assignments in allotted time
- ☐ Struggles to copy from the board accurately
- ☐ Fatigue during writing tasks
- ☐ Focuses so much on letter formation that ideas are lost
- ☐ Low volume of written output

Spelling

- ☐ Frequent spelling errors in common words
- ☐ Spelling declines during longer writing tasks
- ☐ Omits letters in words
- ☐ Letters are sequenced incorrectly (transpositions)

Written Expression

- ☐ Difficulty organizing ideas into sentences
- ☐ Short or incomplete written responses
- ☐ Avoids writing tasks
- ☐ Strong verbal responses but weak written output
- ☐ Limited detail in written work compared to oral explanations

Additional Considerations

- ☐ Writing performance is inconsistent
- ☐ Writing difficulties persist despite instruction
- ☐ Difficulties interfere with academic performance

Glossary

Accessible Educational Materials (AEM) – educational materials and technologies usable for learning across the widest range of individual variability, regardless of format or features; this includes technology designed to be accessible for all learners or made accessible for learners with disabilities.

Accommodation – changes in the curriculum, instruction, or testing format or procedures that enable students with disabilities to participate in the general education curriculum.

Accommodations should be considered to include assistive technology as well as changes in presentation, response, timing, scheduling, and settings that do not fundamentally alter the requirements. Accommodations do not invalidate assessment results.

Accuracy – the ability to recognize words correctly.

Adaptation – the broader application of altering curriculum to meet the needs of learners, either by providing accommodations or modifications to what is being taught. Adaptation includes changes to curriculum, instruction, or assessments that fundamentally alter the requirements but that also enable a student with an impairment an opportunity to participate in general education. Adaptations include strategies that change the level of learning expectation.

Adequate Progress – the level of improvement based on an individual student's trajectory toward expected grade-level performance within a reasonable time period, consistent with national or local growth rate comparisons.

Alphabet Knowledge – the ability to automatically recognize and name the 26 lowercase and 26 uppercase alphabet letters with ease and accuracy.

Alphabetic Principle – the ability to associate sounds with letters and use those sounds to form words.

Alternate Assessment – a specific assessment, developed by the state in lieu of statewide assessments or by the district in lieu of districtwide assessments, designed to measure functional skills within the same domains required by the regular statewide or districtwide assessments. An alternate assessment is designed for students who are unable to demonstrate progress in the typical manner and who meet the state-established criteria.

Analytic Instruction – pertains to instruction or a process that separates the whole into its constituent parts to reveal the relationship of its parts (Birsh, 2011).

Assistive Technology Device – any item, piece of equipment, or product system, whether acquired commercially, off a shelf, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of a student with a disability. This excludes surgically implanted medical devices.

Assistive Technology Service – any service that directly assists a student who has a disability with the assessment, selection, acquisition, or use of an assistive technology device.

Automaticity – the ability to perform a skill easily with little attention, effort, or conscious awareness.

Background Knowledge – connections formed between the text and the information and experiences of the reader.

Base Words – words from which many other words are formed. Base words can stand alone, unlike root words. Examples of a base word and its various forms are “migrate”: “migration,” “migrant,” “immigration,” “immigrant,” “migrating,” and “migratory” (Hougen & Smartt, 2012).

Benchmark – a standard or point of reference against which things may be compared or assessed. A benchmark is also a major milestone describing the progress the student is expected to make toward annual goals within a specified time period.

Blending – the ability to combine individual sounds together to create spoken words (Mather & Wendling, 2012).

Characteristics – strengths and weaknesses in the various components of literacy associated with dyslexia. The characteristics are included in the definition of dyslexia as poor decoding, poor word recognition, poor fluency, and poor spelling.

Comprehension – understanding the intended meaning of language.

Core Instruction – the curriculum and instructional practices that are provided to all students in the general education setting.

Connected Text – words that are linked as in sentences, phrases, and paragraphs.

Consonant – one of a class of speech sounds in which sound moving through the vocal tract is constricted or obstructed by the lips, tongue, or teeth during articulation (Birsh, 2011).

Controlled Text – reading materials in which a high percentage of words can be identified using their most common sounds and using sound-letter correspondences that students have been taught.

Cumulative Instruction – an approach that builds upon previously learned concepts.

Decoding – the process of using sound-letter correspondences to sound out words or nonsense words.

Development Language Disorder (DLD) - a neurodevelopmental condition that affects the ability to learn, understand, and use language.

Diagnostic Assessment – assessments used to measure current skills and knowledge, often for the purpose of educational planning.

Differentiated Instruction – varying educational practices to meet the needs of different students.

Digraphs – a combination of two letters representing one sound, as in “ph” and “ey.”

Diphthong – a sound formed by the combination of two vowels in a single syllable in which the sound begins as one vowel and moves toward another (as in “coin,” “loud,” and “side”).

Dyscalculia – a specific learning disability characterized by difficulties understanding or performing mathematical processes or operations.

Dysgraphia – a specific learning disability characterized by difficulties in physically writing.

Dyslexia – a specific learning disability characterized by difficulties with accurate and fluent word recognition, poor spelling, and decoding abilities that typically result from the phonological component of language and are often unexpected in relation to other cognitive abilities.

Elision – the ability to identify the remaining word when a specified sound is deleted.

Encoding – the process of using sound-letter correspondences to spell.

Evaluation – using all required procedures to determine whether a child has a disability and to determine the nature and extent of the special education and related services the child needs.

Evidence Based Research – an intervention, tool, or practice that meets one of the four evidence levels in the federal Elementary and Secondary Education Act, as amended by ESSA (strong, moderate, promising, or demonstrates a rationale).

Explicit Instruction – a direct, structured, systematic approach to teaching that includes both instructional design and delivery procedures.

Expressive Language – language that is spoken, written, or signed.

Fidelity – an adjective describing an intervention that is done as the author of the program intended.

Fidelity of Implementation – the degree to which an instruction follows the intent and design of the program.

Fine Motor – the coordination of small muscles in movement with the eyes, hands, and fingers.

Fluency – the ability to perform a skill accurately, at an appropriate speed, and with proper expression or flexibility, allowing the brain to focus on comprehension rather than basic processing. It serves as a bridge between learning foundational skills and applying them meaningfully.

Formative Assessments – a planned, ongoing process used by all students and teachers during learning and teaching used to elicit and use evidence of student learning to improve a student's understanding of intended disciplinary learning outcomes; and used to support students in becoming more self-directed learners (ADE, Balanced Assessment Framework).

Grapheme – a letter or letter cluster that represents an individual phoneme (e.g., “i,” “i-e,” “igh,” “ch,” “tch,” etc.).

Gross Motor – movements that require whole body movement and that involve the large muscles of the body to perform everyday functions such as standing, walking, running, jumping, and sitting upright at a table.

Guided Practice – an approach in which students practice newly learned skills with the teacher providing prompts and feedback.

High Frequency Word – a word that is encountered numerous times in text and is important to know (Birsh, 2011).

Independent Educational Evaluation (IEE) – one or more assessment(s) conducted by a qualified examiner(s) who is not employed by or contracted by the public agency or district responsible for the education of the student in question.

Indicator – a sign that shows or suggests the condition of something. Indicators of dyslexia are the early warning signs indicating a child might have dyslexia. Indicators of dyslexia may differ at different ages.

Individualized Education Program (IEP) – a written document (developed collaboratively by parents and school personnel) which outlines the special education program for a student with a disability. This document is developed, reviewed, and

revised at an IEP meeting at least annually.

Individualized Instruction – instruction that is designed to meet the specific needs of the student in a small group setting. Individualized instruction is intensive and highly concentrated instruction that focuses on the student's area(s) of primary difficulty and the instructional delivery necessary to assist students in accelerating their learning, maximizing student engagement in the process of learning.

Individuals with Disabilities Education Act (IDEA) – the federal law outlining rights and regulations for students with disabilities in the U.S. who require special education.

Interventions – sets of teaching procedures used by educators to help students, who are struggling with a skill or lesson, to succeed in the classroom.

Instructional Intervention – an action or strategy based on an individual student's problem that is designed to remedy, improve, or eliminate the identified problem.

Learning Disability – a disorder in one or more of the basic psychological processes in understanding or 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.

Linguistic Instruction – instruction aimed toward improving student proficiency and fluency with the patterns of language so words and sentences are carriers of meaning.

Metacognitive Skills – strategies that help students to “think about their thinking” before, during, and after they read.

Morpheme – the smallest meaningful unit of a language.

Morphological Awareness – the awareness of the semantically meaningful units and structure of words.

Morphology – the study of words, how they are formed, and their relationship to other words in the same language.

Multisensory Instruction – instruction that incorporates the simultaneous use of two or more sensory pathways (visual, auditory, kinesthetic, and tactile) during teacher presentations and student practice.

Nonsense Word – a word having no meaning by itself, the spelling of which is usually phonetic (e.g., “vop”). Reading and spelling nonsense words are phonic reinforcement for students who have already memorized a large number of words. Nonsense words can be used for teaching older students how to apply phonetic decoding (e.g., “tas” in fantastic).

Norm – the standard of performance on a test that is derived by administering the test to a large sample of students.

Norm-Referenced Test – an assessment that provides an estimate of the student's performance compared to other students in the population of the same age or grade.

Onset – the initial written or spoken single consonant or consonant cluster before the first vowel in a syllable (e.g., /s/ in “sit,” /str/ in “strip,” etc.). Some syllables do not have an onset (e.g., “on,” “ask,” etc.).

Onset-Rime Awareness – awareness of the two separate elements in syllables, the consonant sounds before the vowel sound (onset) and the vowel sound and any consonant sounds that follow (rime); a subcategory of phonological awareness.

Orthographic Knowledge – information in memory of how to represent spoken language in a written form.

Orthographic Processing – the use of the visual system to form, store, and recall words.

Orthography – the conventional spelling system/writing system of a language.

Phoneme – the smallest unit of sound within spoken words.

Phoneme-Grapheme Connections – the relationships between the speech sounds (phonemes) of words and the spellings (graphemes) of words (Mather & Wendling, 2012).

Phonemic Awareness – the awareness of individual sounds/phonemes in spoken words; a subcategory of phonological awareness.

Phonics – a systematic process for teaching sound-symbol relationships and their use in reading and spelling words.

Phonological Awareness – the ability to recognize and manipulate the sound system in spoken language; it encompasses the entire continuum of skills related to the awareness of the phonological structure of language.

Phonological Processing – the use of the sounds of one's language to process spoken and written language.

Phonology – the study of how sounds are organized and used in natural languages.

Phonology Disorders – errors involving phonemes, sound patterns, and the rules governing their combinations.

Prefix – an affix attached to the beginning of a word that changes the meaning of that word (e.g., “tri-” in “tricycle”) (Birsh, 2011).

Present Levels of Performance – a statement of the student’s current level of achievement or development in an area of need, and how the student’s disability affects his or her involvement and progress in the general education curriculum. Present levels of academic achievement and functional performance (PLAAFP), typically shortened to ‘present levels,’ is a central component of the IEP and is intended to comprehensively describe a child’s abilities, performance, strengths, and needs. Present levels are based on all the information and data previously collected and known about the child, most especially the full and individual evaluation of the child that must be conducted in accordance with IDEA’s evaluation/eligibility provisions.

Procedural Safeguards – the formal requirements of Part B of the IDEA 2004 that are designed to allow a parent/adult student to participate meaningfully in decisions concerning an appropriate educational program for a student with a disability and, if necessary, dispute such decisions. Also referred to as special education rights.

Progress Monitoring Assessments – a tool to determine whether students are making adequate progress. This may be curriculum embedded (measuring to what extent students have mastered curriculum) or general/external (measuring critical reading skills, such as phonemic awareness, phonics fluency, vocabulary, or comprehension). They serve to predict success in meeting grade-level expectations (Hougen & Smartt, 2012).

Progress Monitoring – a tool to assess students’ academic performance, to quantify a student rate of improvement or responsiveness to instruction, and to evaluate the effectiveness of instruction.

Prosody – reading aloud with expression, proper intonation, and phrasing.

Rapid Naming or Rapid Automatized Naming (RAN) – the ability to quickly name aloud a series of familiar items (e.g., colors, objects, letters, or numbers). Variations in rapid naming time in children provide a strong predictor of their later ability to read.

For more information, visit <https://www.understood.org/en/school-learning/evaluations/types-of-tests/rapid-automatized-naming-tests-what-you-need-to-know>.

Reading Comprehension – a multicomponent, highly complex process that involves many interactions between readers and what they bring to the text (e.g., previous knowledge, strategy use) as well as variables related to the text itself (e.g., interest in the text, understanding of text types) (Hougen & Smartt, 2012).

Reading Rate – the speed of reading at the single word level or at the connected text level. (Mather & Wendling, 2012).

Receptive Language – language that is heard, read, or watched.

Reliability – consistency with which a tool classifies students from one administration to the next.

Research-Based Instruction – instruction that is based on the findings of scientific research.

Response to Intervention (RtI) – a formal process for evaluating student response to scientifically research-based interventions, consisting of the core components of: (1) problem identification, (2) problem analysis, (3) applying research-based interventions, and (4) progress monitoring/decisions rules.

Root – the main part of a word; affixes are added to the roots to make new words (e.g., “sect”: “intersect,” or “intersection”) (Hougen & Smartt, 2012).

Scope and Sequence – a blueprint providing an overall outline of an instructional program including the range of teaching content and the order or sequence in which it is taught.

Screening – an informal, although organized, process of identifying students who are not meeting or who may not be meeting Oklahoma Academic Content Standards.

Screening Assessment – an efficient assessment given to all students to identify students who are at risk for not meeting grade-level standards.

Sensory impairment – a vision or hearing impairment, or a combination of both, that cannot be corrected to a degree that the student can receive educational benefit from print and/or auditory information.

Segmentation – the ability to break apart spoken words into syllables or phonemes (Mather & Wendling, 2012).

Semantics – the study of the meaning of morphemes, words, phrases, and sentences.

Sequencing – in multisensory structured language education, the orderly presentation of linguistic concepts based on frequency and ease of learning in a continuous series of connected lessons (Birsh, 2011).

Sight Word – a word immediately recognized “on sight” regardless of whether it is phonically regular or irregular.

Small Group – a typical classroom reading group with a maximum of 5-6 students. If a

student exhibiting the characteristics of dyslexia hasn't been successful in the typical small reading group, he or she will likely need a smaller group for the dyslexia intervention. The group size for dyslexia intervention begins with the program guidelines, but it should also take into consideration the severity of the reading deficiency and may need to be adjusted based on the individual student's progress monitoring data.

Sound Symbol Recognition – ability to automatically produce sound(s) or grapheme names (grade level letters or letter clusters) during recognition, production, and/or writing tasks.

Sound-Letter Identification – a phoneme (sound) associated with a letter or letters (grapheme); also called sound-letter correspondence.

Specially Designed Instruction – adapted content, methodology, or delivery of instruction to address the unique needs of an eligible student that result from the student's disability. Specially Designed Instruction ensures access to the general education curriculum so the student can meet the education standards of that district that apply to all students. As defined in IDEA, specially designed (tiered) instruction is the unique set of supports provided to an individual student, based on his or her learning needs, to remove barriers that result from the student's disability. The supports are reflected in the student's individual educational plan (IEP) and are infused throughout the student's learning experiences and environments as described in the IEP.

Specific Learning Disability (SLD) – an IDEA disability category in which a specific disorder, of one or more of the basic psychological processes involved in understanding or in using spoken or written language, may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations, adversely affecting the student's educational performance. This term includes such conditions as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not include a student who has needs that are primarily the result of visual, hearing, or motor disabilities; cognitive impairment; emotional disturbance; or environmental, cultural, or economic disadvantage.

Speech or Language Impairment (SLI) – an IDEA disability category that includes articulation/phonology, voice, and fluency disorders.

Speech-Language Pathologist (SLP) – a professional who can assess and treat persons with speech, language, voice, and fluency disorders. This professional coordinates with, and may be a member of, the evaluation and IEP teams.

Strategy-Based Instruction – providing instruction in the step-by-step processes needed for students to independently complete complex tasks.

Structural Analysis – the perception and examination of syllables and morphemes. Structural analysis enables the reader to recognize different syllables and decode long, unfamiliar words (Birsh, 2011).

Structure of the English Language – English language structure consists of morphology (understanding the meaningful roots and affixes that make up words in the language), semantics (understanding how language carries meaning), syntax (understanding the conventions and rules for structuring meaningful sentences), and pragmatics (understanding how language conveys meaning in specific situations).

Systematic Instruction – sequential, cumulative instruction that follows a logical plan and progresses from easiest to most complex with careful pacing to ensure students successfully master each step in the process. Systematic instruction includes scaffolded support for accomplishing each learning step by breaking down complex skills into manageable learning steps and providing temporary supports to control the level of difficulty as students gain mastery.

Suffix – a morpheme attached to the end of a word that creates a word with a different form or use (e.g., “-s” in “cats,” or “-ing” in “lettering”). Suffixes include inflected forms indicating tense, number, person, and comparatives (Birsh, 2011).

Syllabication – the act of breaking words into syllables.

Syllable – a word part that contains a vowel sound in a spoken language.

Syntax – the way words are put together to form phrases, clauses, or sentences.

Universal Design for Learning (UDL) – a scientifically valid framework for guiding educational practice that: (A) provides flexibility in the ways information is presented, in the ways students respond or demonstrate knowledge and skills, and in the ways students are engaged; and (B) reduces barriers in instruction, provides appropriate accommodations or supports, and challenges and maintains high achievement expectations for all students, including students with disabilities and students who are limited in English proficiency (Definition of UDL included in the Higher Education Opportunity Act 2008).

Universal Screening Assessments – a type of criterion-referenced assessment designed to be teacher friendly so they can be quickly administered to all children in a class several times per year. The screening assessments help a teacher determine which students are achieving as expected and which are at risk for specific components of reading (Hougen & Smartt, 2012).

Validity – the extent to which a tool accurately measures the underlying construct it is intended to measure.

Vocabulary – the words understood and used when listening, speaking, reading, and writing.

Voiced Consonant – a consonant sound produced in which the vibration of vocal cords

is present (e.g., /b/, /d/, etc.) (Hougen & Smartt, 2012).

Vowel – a speech sound produced by the free flow of air through the vocal tract (Hougen & Smartt, 2012).

Word Recognition – a reader's ability to recognize written words correctly and effortlessly.

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