

Students with Special Needs Investigation:
Dyslexia, General Anxiety Disorder, and Articulation Disorder

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EDU 539

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May 9, 2025

Dyslexia

Scholarly Definition

Dyslexia is one of the most recognized and studied learning disabilities, particularly impacting literacy development. It is the most common cause of reading, writing, and spelling difficulties (Gargiulo, 2019). According to the International Dyslexia Association, 10-20% of the population has a language-based learning disability. It is a severe reading disability related to a difficulty in understanding the relationship between sounds and letters (Gargiulo, 2019). The International Dyslexia Association defines it as a specific learning disability that is neurobiological in origin. It is characterized by challenges with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically come from a deficit in the phonological (the ability to recognize and manipulate the sounds of spoken language) component of language and are often unexpected given the individual's other cognitive abilities (Gargiulo, 2019). While dyslexia primarily affects reading, its consequences may extend to reading comprehension and vocabulary development due to reduced exposure to text (Reid, 2019). According to Dyslexia Canada, it is the most common cause of reading, writing, and spelling difficulties and affects individuals across gender, ethnic, and socio-economic groups with roughly equal frequency (Gargiulo, 2019).

Characteristics and Specific Needs

Students with dyslexia experience learning patterns that deviate significantly from their same-aged peers, especially in the areas of language, reading, writing, and, at times, mathematics (Gargiulo, 2019). Dyslexia characteristics primarily revolve around difficulties in phonological

processing, which is trouble understanding the correspondence between letters and their associated sounds (Catts et al., 2024). This hinders decoding, spelling, and fluent reading. Students may avoid reading aloud, mispronounce common sight words, and omit word endings such as -s or -ed (Gargiulo, 2019). Reading is often difficult and slow, which can negatively impact comprehension. Many students must reread texts multiple times to understand them, often becoming discouraged in the process. In addition to reading issues, students with dyslexia frequently exhibit weaknesses in written language. They may struggle with spelling, sentence structure, grammar, and organizing their thoughts on paper. In mathematics, students may face challenges with word problems or memorization of facts (Gargiulo, 2019). It is important to understand that dyslexia does not affect intelligence, and many students possess strong reasoning, creativity, and problem-solving abilities despite their struggles with literacy (Reid, 2019).

Classroom Instructional Strategies and Interventions

Effective teaching strategies for students with dyslexia must be explicit, systematic, and multisensory (Catts et al., 2024). The Orton-Gillingham approach is widely recognized as a highly effective method for teaching students with dyslexia. It integrates visual, auditory, and kinesthetic approaches to progressively reinforce the connections between letters and sounds (MacLeod-Vidal & Smith, 2021). Students benefit from frequent review, guided practice, and opportunities to generalize skills to new contexts. Teachers should focus on building phonemic awareness and decoding skills early and consistently. Brainstorming activities and vocabulary mapping can help students with dyslexia express their ideas more easily and improve word recall and usage (Reid, 2019). In mathematics, using physical objects, diagrams, and real-life

applications can support understanding of abstract concepts (MacLeod-Vidal & Smith, 2021). It is important to understand that what works for one student might not for another, so being flexible and adaptable to apply different interventions is critical. For example, assignments can serve as more equitable and comprehensive evaluations than standardized tests (Reid, 2019).

Classroom Accommodations and Modifications

Classroom accommodations can help level the playing field for students with dyslexia. Providing extended time for reading and writing tasks allows students to process information without being penalized for slower pace (MacLeod-Vidal & Smith, 2021). Audiobooks and text-to-speech software allow students to access grade-level content without the added burden of decoding (Milani et al., 2010). Instructional materials should be formatted with larger print and extra spacing to improve readability. Teachers can also support comprehension by breaking assignments into smaller, manageable parts and offering written and verbal instructions (MacLeod-Vidal & Smith, 2021). Other modifications include adjusting the length or complexity of reading assignments, reducing emphasis on spelling in grading, or allowing oral rather than written assessments (MacLeod-Vidal & Smith, 2021). These accommodations ensure that students with dyslexia can participate meaningfully in the classroom while their unique learning profiles are respected.

Educational and Assistive Technology

Technology is a powerful ally for students with dyslexia, as numerous assistive technologies are greatly beneficial. Audiobooks are excellent alternatives to typical books, as studies show they lead to a significant improvement in reading accuracy, with reduced unease

and emotional-behavioural disorders, as well as an improvement in school performance and a greater motivation and involvement in school activities (Milani et al., 2010). Likewise, text-to-speech and speech-to-text tools allow students to read and write with greater independence (Gargiulo, 2019). Programs like Learning Ally and Bookshare provide access to audiobooks, while apps such as Ghotit and CoWriter assist with spelling and grammar (MacLeod-Vidal & Smith, 2021). Multisensory apps like Nessy support phonics instruction in an engaging and student-friendly format. These tools not only support academic success but also help build students' confidence and autonomy.

Transition Considerations

Transition is a broad term used to describe the movement of an individual from one educational environment to another, from one class to another, or from one phase of life to another (Gargiulo, 2019). For students with dyslexia, the transition from high school to post-secondary life can be especially challenging due to ongoing difficulties with reading, writing, and self-advocacy (Ontario Ministry of Education, n.d.). To support a successful transition, schools must develop a comprehensive, individualized plan as part of the student's Individualized Education Program (IEP). This plan should include academic accommodations for college, career readiness training, explicit instruction in self-advocacy, and access to assistive technology (Ontario Ministry of Education, n.d.). As students approach the end of high school or age 21, it becomes critical that they understand their learning profile and are equipped to independently request accommodations in college or the workplace. Additionally, mentoring, vocational programs, job coaching, and ongoing review of support services ensure that students

with dyslexia can navigate adult environments confidently and successfully, with a strong focus on their individual strengths and future aspirations (Gargiulo, 2019).

Considerations for Subgroups

For students who are learning English as an additional language, it is essential to differentiate between difficulties caused by language acquisition and those caused by dyslexia. Misidentifying language learners as dyslexic or failing to recognize dyslexia in an ELL can lead to inappropriate interventions. Evaluations should be conducted in the student's native language when possible, and culturally responsive teaching should be a central component of the classroom (Elbeheri, 2020). Likewise, students with emotional disturbances may demonstrate avoidance behaviours or display frustration related to academic tasks. If a student also has dyslexia, the emotional impact can be intensified by feelings of failure or inadequacy. It is important for educators to provide a predictable, nurturing environment with access to counselling support and trauma-informed practices (Gargiulo, 2019). Another consideration is that some students are "twice exceptional," meaning they are both gifted and dyslexic (Gargiulo, 2019). These students may excel in creative problem-solving, critical thinking, or verbal reasoning, yet struggle significantly with decoding and spelling. They require both enrichment and remediation, so teachers should nurture their talents while also addressing their learning challenges (Gargiulo, 2019). Many students with dyslexia also have speech and language impairments, such as difficulties in phonological processing or expressive language delays. Collaborating with speech-language pathologists can support the development of foundational language skills and improve outcomes in reading and writing (Catts et al., 2024). Ultimately,

targeted interventions and personalized instructional plans are necessary to address these varied learning needs.

Professional Organizations

Numerous organizations offer critical support for individuals with dyslexia and their families. The International Dyslexia Association (IDA) provides training, resources, and advocacy materials for parents and professionals. Dyslexia Canada, a national organization, advocates for policy change and equitable access to education across provinces. Locally, the Buffalo Dyslexia Center offers free tutoring based on the Orton-Gillingham approach, helping children build foundational reading skills. The Children's Dyslexia Centers also provide instruction and training for both children and adult tutors, emphasizing multisensory reading strategies. These organizations serve as vital resources for information, community building, and academic support.

General Anxiety Disorder

Scholarly Definition

Generalized Anxiety Disorder (GAD) is a mental health condition classified under anxiety disorders in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5). It is defined by persistent, excessive, and difficult-to-control worry that spans multiple life domains, such as academic performance, personal relationships, and future events. To meet diagnostic criteria, this pattern of worry must occur more days than not for a period of at least six months and be accompanied by symptoms such as restlessness, fatigue, irritability, difficulty concentrating, muscle tension, and sleep disturbances (Gargiulo, 2019). Importantly, the anxiety

must be significant enough to impair functioning in social, academic, or other important areas of life (American Psychiatric Association, 2013). In the context of special education, GAD is typically categorized under emotional disturbance as defined by the Individuals with Disabilities Education Act (IDEA). This classification includes emotional or behavioural conditions that are chronic and result in responses that are significantly different from cultural or developmental norms to the extent that they adversely affect a student's educational performance (Bosley et al., 2016).

Characteristics and Specific Needs

Students with GAD experience chronic, excessive worry that is difficult to control and often disproportionate to the situation (APA, 2013). Unlike their typically developing peers, children and adolescents with GAD may display persistent fear, perfectionism, avoidance behaviours, and physical complaints like stomach aches or fatigue without a medical explanation (McCorriston, 2020). These symptoms can impair performance across academic domains. In terms of language development, students with GAD may struggle with oral communication, especially in group discussions or presentations, due to fear of embarrassment or making mistakes (McCorriston, 2020). Reading and writing may also be affected by concentration difficulties and negative self-talk, leading to poor comprehension, avoidance of tasks, or perfectionistic tendencies that delay task completion (McCorriston, 2020). Mathematics performance can be hindered by testing anxiety and fear of failure, especially during timed tasks or problem-solving under pressure (Gargiulo, 2019). Perfectionism is another common trait among students with GAD (Dray et al., 2017). Emotional dysregulation, persistent worry, and a heightened need for reassurance are further challenges that need to be addressed.

Classroom Instructional Strategies & Interventions

Instruction for students with GAD should prioritize structure, emotional safety, and proactive mental health supports. Evidence-based interventions such as Cognitive-Behavioral Therapy (CBT) strategies are particularly effective, including lessons on relaxation techniques, cognitive restructuring, positive self-talk, and journaling to challenge anxious thoughts (Higa-McMillan et al., 2014; McCorriston, 2020). Teachers should incorporate predictable routines, clear transitions, and preview changes to reduce anxiety around the unknown (McCorriston, 2020). Social-emotional learning (SEL) practices can help students identify and manage feelings, while teaching self-regulation and resilience (Gargiulo, 2019). Group work should be scaffolded and participation expectations adjusted to allow gradual exposure to anxiety-provoking tasks (Higa-McMillan et al., 2014; McCorriston, 2020). Additionally, educators can foster a classroom culture that normalizes mistakes and values growth over perfection, which helps counter perfectionism (Dray et al., 2017).

Classroom Accommodations & Modifications

Students with GAD benefit significantly from a range of accommodations designed to reduce anxiety and create a supportive learning environment. These may include flexible deadlines, extended test time, alternative settings for assessments, and quiet areas in the classroom for self-regulation (McCorriston, 2020). Teachers can also provide visual schedules, rubrics, and checklists to reduce uncertainty and excessive reassurance-seeking. To support emotional regulation, students may be given cool-down passes, mindfulness activities, or scheduled breaks. Modifications might involve reducing the number of tasks, breaking assignments into smaller parts, or allowing oral rather than written responses to alleviate the

stress of performance (McCorriston, 2020). Importantly, students should be offered consistent, calm, and supportive responses when they seek reassurance or express worry (Cunningham & Suldo, 2014).

Educational and Assistive Technology

Technology should play a crucial role in supporting students with GAD. Mindfulness and breathing apps, such as *Headspace* or *Smiling Mind*, can help students manage physiological symptoms of anxiety during the school day (McCorriston, 2020). Tools like visual timers, digital planners, and reminder apps support executive functioning and reduce stress about time and task management (McCorriston, 2020). Speech-to-text programs or audio recording tools can reduce pressure during writing tasks, especially for perfectionistic students who are reluctant to commit ideas to paper (Dray et al., 2017). Additionally, online journaling platforms and mood tracking tools can support CBT-based interventions and give educators insight into student well-being (Cunningham & Suldo, 2014). These tools help create a more inclusive classroom and alleviate triggers for students suffering from anxiety.

Transition Considerations

Transition planning is a critical process for students with GAD as they move from high school to post-secondary education, the workforce, or independent living. Transitions often involve uncertainty, which is a key trigger for anxiety. Therefore, early and individualized planning is essential and should include collaboration between families, educators, and mental health professionals (Gargiulo, 2019). Successful transition plans should identify specific goals, needed supports, and strategies for maintaining mental health (Ontario Ministry of Education,

n.d.). Teaching students self-advocacy, coping skills, and how to access accommodations in post-secondary or workplace settings is essential. Tools like person-centered planning, career interest inventories, and life skills instruction help prepare students for adult responsibilities, while also addressing anxiety related to change and unpredictability (McCorriston, 2020).

Professional Organizations

Several local, national, and international organizations offer vital support, resources, and advocacy for individuals affected by anxiety and related mental health conditions. The Anxiety & Depression Association of America (ADAA) plays a leading role by raising awareness about anxiety and depression through evidence-based research, professional education, and public outreach. ADAA provides access to webinars, articles, peer-to-peer support communities, and therapist directories, helping individuals find accurate information and connect with care. At the state level, the New York State Office of Mental Health promotes recovery and wellness for people with serious emotional disturbances, particularly children and adolescents, through public programs and services. Locally, the National Alliance on Mental Illness (NAMI) Buffalo & Western New York offers education, advocacy, and support to families and caregivers. Their services include support groups, helplines, educational courses, community outreach, and legislative advocacy aimed at improving mental health care. In Canada, Anxiety Canada and the Canadian Mental Health Association (CMHA) provide similar services, offering digital tools, public education, and access to local support systems to help individuals manage and understand anxiety disorders, including Generalized Anxiety Disorder (GAD). These organizations collectively work to reduce stigma, promote early intervention, and empower individuals and families affected by anxiety.

Articulation Disorder

Scholarly Definition

Articulation disorder is a type of speech sound disorder characterized by difficulty in the physical production of specific speech sounds. According to the American Speech-Language-Hearing Association (ASHA, n.d.), individuals with this disorder exhibit atypical speech sound production, marked by errors such as omissions, substitutions, additions, or distortions that may reduce intelligibility. For example, a child might say “wabbit” instead of “rabbit,” or “cu” instead of “cup” (Gargiulo, 2019). These errors may be developmental but can persist beyond the typical age range and require intervention when they hinder communication. Gargiulo (2019) classifies articulation disorder under idiopathic speech sound disorders, where the cause is often unknown but may involve neurological, anatomical, or environmental factors.

Characteristics and Specific Needs

Children with articulation disorders often present with speech that is difficult to understand due to persistent and patterned errors in sound production. These may include omissions (e.g., saying “poon” for “spoon”), substitutions (e.g., using /w/ for /r/), distortions (e.g., producing a lateral lisp), and additions of extra sounds (Gargiulo, 2019). In addition to isolated sound errors, students may exhibit inconsistent sound production, which further complicates intelligibility (ASHA, n.d.). Academically, students with articulation disorders may struggle across multiple domains. Language development can be impacted as these students may have limited expressive vocabulary and may avoid participating in speaking situations. In reading, poor phonemic awareness can lead to difficulties in recognizing sound-letter

correspondence and spelling. Writing may also suffer as students attempt to represent sounds they cannot produce correctly. While mathematics may be less directly affected, articulation issues can interfere with the verbal expression of mathematical reasoning, especially in word problems or oral assessments (Friend & Bursuck, 2019). Furthermore, the social and emotional impact of these disorders cannot be understated. Hitchcock, Harel, and McAllister Byun (2015) found that residual speech errors, such as misarticulated /r/ sounds, can negatively affect self-esteem and peer relationships. Children are at increased risk of being teased or socially isolated, particularly as they grow older and become more self-aware (Friend & Bursuck, 2019). These emotional challenges can affect classroom participation and academic performance, highlighting the importance of early identification and support.

Classroom Instructional Strategies and Interventions

Monitoring progress and adjusting interventions are essential to effectively supporting children with developmental articulation disorders (NDIS Speech Therapy, 2024). A systematic, flexible approach allows teachers and speech therapists to assess the child's responses to interventions and make timely adjustments, ensuring they remain targeted and effective (NDIS Speech Therapy, 2024). Kairienė (2017) argues that direct instruction in correct speech sound production is foundational and should be guided by a licensed speech-language pathologist (SLP). She further underscores the importance of differentiating between non-speech and speech-level motor strategies, although speech-based strategies tend to be more effective in promoting correct pronunciation and intelligibility (Kairienė, 2017). Effective speech therapy typically follows principles of motor learning, which emphasize task-specific, repetitive practice aimed at developing new motor patterns. In addition to in-person interventions, integrating

audiovisual tools into treatment has shown promising results (Pamplona, Ysunza, and Morales, 2017). These materials allow for consistent practice and parental involvement, leading to better articulation outcomes than on-site therapy alone (Pamplona, Ysunza, and Morales, 2017). Students also benefit from opportunities to practice target sounds in natural settings such as classroom discussions, group work, and daily routines, ensuring that improvements carry over beyond therapy sessions (Gargiulo, 2019). The final crucial component is the role of positivity and encouragement, as educators should build confidence by acknowledging students' efforts and progress (Friend & Bursuck, 2019).

Classroom Accommodations and Modifications

In the classroom, accommodations should aim to reduce communication barriers while promoting inclusion and participation (Gargiulo, 2019). One effective strategy is preferential seating, which places the student closer to the teacher for better access to visual and auditory cues (Hitchcock et al., 2015). Teachers should also reduce pressure in speaking situations by allowing alternative forms of communication, such as written responses or visual aids during presentations. Positive reinforcement plays a vital role in maintaining motivation, especially for students who may be self-conscious about their speech (Friend & Bursuck, 2019). Teachers should recognize not only correct articulation but also improvements and attempts. Establishing a supportive classroom culture that discourages teasing and fosters understanding is critical, as negative peer interactions can exacerbate anxiety and reduce participation (Hitchcock et al., 2015). Implementing peer buddy systems can further support students during collaborative activities by pairing them with empathetic classmates.

Educational and Assistive Technology

Several technological tools are available to support students with articulation disorders. Speech therapy applications such as Articulation Station or Speech Tutor provide targeted sound practice and visual feedback, making them engaging and accessible. Recording devices enable students to listen to their speech and monitor progress, which promotes self-awareness and correction. The use of audiovisual materials, as previously discussed, can enhance at-home practice and allow for parental involvement in the therapeutic process (Pamplona et al., 2017). For students with severe articulation issues or significantly reduced intelligibility, augmentative and alternative communication (AAC) devices may be necessary. These include picture boards and speech-generating devices that provide an essential communication bridge. Overall, these assistive technologies help bridge communication gaps, support consistent practice and feedback, and empower students with articulation disorders to participate more fully and confidently in both academic and social settings.

Transition Considerations

By the time students reach high school, most articulation disorders are either resolved or significantly reduced in severity (NDIS Speech Therapy, 2024). However, in cases where challenges persist, transition planning becomes crucial as they progress through their final years of high school. Students should be taught self-advocacy skills to communicate their needs in new educational settings, such as high school or postsecondary institutions (Hitchcock et al., 2015). They may also require accommodations for oral presentations, job interviews, or vocational training programs. Continued speech-language services may be necessary, especially in cases where intelligibility still affects academic or social functioning (Hitchcock et al., 2015). Students may also need support in navigating peer relationships and building confidence. Addressing

these areas during transition planning ensures that students are equipped not only with academic knowledge but also with the social and emotional tools to thrive in new environments.

Considerations for Subgroups

Children with articulation disorders often present with comorbid conditions that require careful, individualized planning (ASHA, n.d.). For English Language Learners (ELLs), distinguishing articulation errors from those related to second language acquisition is critical. Clinicians must evaluate students within the context of their linguistic backgrounds to avoid misdiagnosis (ASHA, n.d.). Students with emotional disturbance may exhibit increased anxiety around verbal communication. These students benefit from interdisciplinary support involving mental health professionals and educators. Similarly, gifted and talented students with articulation issues may experience internal frustration if their cognitive abilities are not matched by their expressive language skills (Hitchcock et al., 2015). These students require enrichment opportunities alongside speech support. Another consideration is that articulation disorders often overlap with Specific Learning Disabilities (SLD), particularly in reading and writing. Difficulties with phonological processing can impact decoding, spelling, and written expression. Speech-language therapy should be integrated into academic instruction to support these literacy skills (Friend & Bursuck, 2019). For students with impairments, articulation errors may coexist with challenges in expressive or receptive language. A comprehensive, team-based evaluation ensures all areas of need are addressed in the Individualized Education Program (IEP).

Professional Organizations

Several professional organizations provide resources, support, and advocacy for families and educators of children with articulation disorders. The American Speech-Language-Hearing Association (ASHA) offers comprehensive guidelines on assessment and intervention and promotes best practices through research and education. In Canada, Speech-Language and Audiology Canada (SAC) serves a similar role, advocating for communication health and supporting clinicians across the country. Regionally, the New York State Speech-Language-Hearing Association (NYSSLHA) supports professionals through professional development and policy advocacy. In the Buffalo area, the University at Buffalo's Communicative Disorders and Sciences Department and the Buffalo Hearing & Speech Center provide direct services, training, and community outreach, playing a critical role in local intervention efforts.

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