

All learning occurs because the brain develops specialized structures for different tasks. Learning disabilities begin in early childhood and are not outgrown nor curable. Occupational therapy helps. Students with learning disabilities often experience mental fatigue, which may manifest as ADHD-like inattention, as they endure a traditional school day of tasks that play to their weakness. Learning disabilities often impact self-esteem and may manifest as somatic illness (headaches, stomachaches, dizziness) or **anxiety/moodiness**. To others, a learning disability may look like character flaws such as being inconsistent, **impulsive, careless, or disinterested**.

It is important to focus on the individual's strengths and interests while supporting weaknesses. Supports may include medication, accommodations, and skills coaching/training.

Twice-exceptionality (2e) means a person has both high intelligence and a condition like attention deficit disorder or dyslexia. A learning disability often prevents a child from expressing and developing his strengths. Most 2e children have significant discrepancies within IQ score components, so an IQ score is not an accurate measure of what they can achieve. Gifted students with a learning disability are under-identified by schools.

ADHD, Attention Deficit Hyperactivity Disorder, which might more accurately be called attention deregulation, is a neurological disorder that impacts the parts of the brain that help us plan, focus on, and execute tasks. ADHD symptoms vary by sub-type — inattentive, hyperactive, or combined — and are often more difficult to diagnose in girls, adults, and individuals with additional neuro-diversity including giftedness.

Common markers of ADHD include:

- Inattention
- Lack of focus
- Hyperfocus
- Hyperactivity
- Weak impulse control
- Exaggerated emotions
- Poor time management
- Executive dysfunction

Medications for ADHD have different methods of enhancing dopamine and/or norepinephrine.

Side-effects of medication include:

- decreased appetite, stomach pain, nausea or vomiting, constipation, sleep disturbances, **restlessness, agitation, increased anxiety, headaches**, dizziness, blurry vision, dry mouth, sweating, muscle twitching.

Accommodations:

Minimize distractions.

Create a secret signal to remind the child to get back on track.

Routinely review learning from moment, class, day before.

Allow extra time.

Adapt evaluations to show knowledge instead of speed.

Allow the student to work with a classroom buddy at times.

Permit the student to doodle or play with small items, like fidgets.

Keep and check an assignment book/calendar.

Have a system for storing/transporting important items. Examples: specific pocket for glasses, duplicate set of text books a school and home, routine order of packing up.

Executive function is the cognitive process mediated primarily by the prefrontal cortex but also involves the basal ganglia, cerebellum, and amygdala. EF organizes thoughts and activities, prioritizes tasks, manages time efficiently, and makes decisions. **Executive function skills** help us to establish structures and strategies for managing projects and to determine the actions required to move each project forward. Individuals with **executive dysfunction** often **struggle to analyze, plan, organize, schedule, and complete tasks** at all — or on deadline. They misplace materials, prioritize the wrong things, and get overwhelmed by big projects.

Strong working memory, self-control, or self-regulation, and the ability to maintain and shift attention are the foundation upon which academic and social success is built. Well-developed EF skills unlock human potential; deficits in EF prevent us from living up to our personal best.

EF is judged by the strength of these seven skills which develop in about this order from age 2 through 30 in the neurotypical person.

1. **Self-awareness**: self-directed attention
2. **Inhibition** aka self-restraint
3. **Non-Verbal Working Memory**: The ability to hold things in your mind. Essentially, visual imagery — how well you can picture things mentally.
4. **Verbal Working Memory**: Self-speech, internal speech, “inner monologue”
5. **Emotional Self-Regulation**: The ability to take the previous four EFs and use them to manipulate your own emotional state. Learning to use words, images, and your own self-awareness to process and alter how we feel about things.
6. Self-motivation: How well you can motivate yourself to complete a task when there is no immediate external consequence.
7. Planning and Problem Solving: How we play with information in our minds to come up with new ways of doing something. By taking things apart and recombining them in different ways, we are planning solutions to our problems.

Those with ADHD are well behind their peers in EF development. Therefore, it makes sense for children and adults with ADHD to have trouble dealing with age-appropriate situations — they're thinking and acting in ways that are like much younger people. Gifted individuals will develop in some areas well ahead of their peers. **Being gifted with ADHD results in a mix of ability levels** that is usually confusing and frustrating for the individual and those around them.

Interventions:

1. environmental modifications: For short-term improvement, provide organization, have lots of structure, minimize distractions, **provide pre-transition cues, and use consistent and clear language to deliver instruction or give directions.**
2. executive skills training: For long-term improvement, train individual on attending to detail; repetition, rehearsal, and review; attaching meaning; and grouping bits of information.

Autism Spectrum Disorder (ASD) is a neurobiological disorder that occurs on a broad continuum of severity. Children with autism do not intuitively grasp the social world, and their social skills may lag behind those of other children. They have limited imaginative play skills. A combination of educational and behavioral interventions, medication, and alternative therapies is critical to the social, academic, and professional success of people with ASD.

Symptoms occur in three main areas, social interactions, verbal and nonverbal communication, repetitive or ritualistic behaviors, and commonly include:

Difficulty interpreting what others are thinking or feeling

Trouble interpreting facial expressions, body language, or social cues

Avoiding eye contact

Take things literally

Difficulty communicating verbally

Trouble keeping up a conversation

Inflection that does not reflect feelings

Not using gestures to communicate

Not responding when called by name

Difficulty regulating emotion

Restricted interests

Stimming, self-stimulating in order to soothe the nervous system through movements or occasionally noises

Accommodations:

Creating sensory-friendly spaces

Establish clearly defined social rules

Educate classmates on autism in the context of neurodiversity

Mentoring

DYSLEXIA is not just print-based, but a broad language-processing issue. Someone with dyslexia will often have better verbal communication skills and a gifted individual with dyslexia may have remarkably strong verbal communication skills.

Common markers of dyslexia include:

Struggling with phonemic awareness, the ability to differentiate between and use individual sounds in words
Slow or distorted phonological processing, differentiating between various phonemes (or "speech sounds")
Reading or writing letters or words out of order; poor spelling
Reading slowly or with frequent pauses
Difficulty sounding out unknown words
Misuse or total disregard of punctuation
Difficulty mastering correct spelling or age-appropriate vocabulary
Trouble with handwriting
Difficulty recalling known words
Delayed speech development
Trouble rhyming
Difficulty following directions
Trouble distinguishing letters, numerals or sounds

Accommodations:

Audio books or media other than written text
Issuing materials ahead of time so the student has extra time to prepare
Speech recognition software
Give instructions verbally and allow student to demonstrate learning with verbal explanations rather than written test answers.

DYSCALCULIA causes a child to struggle with mathematical formulas, shapes, and spatial awareness.

Common markers of dyscalculia include:

Difficulties with processing numbers and quantities, including:
Connecting a number to the quantity it represents (the number 2 to two apples)
Counting, backwards and forwards
Comparing two amounts
Trouble with subitizing (recognize quantities without counting)
Trouble recalling basic math facts (like multiplication tables)
Difficulty linking numbers and symbols to amounts
Trouble with mental math and problem-solving

Difficulty making sense of money and estimating quantities
Difficulty with telling time on an analog clock
Poor visual and spatial orientation
Difficulty immediately sorting out direction (right from left)
Troubles with recognizing patterns and sequencing numbers
Difficulty remembering sports rules and keeping score during play

Accommodations:

allowing more time on assignments and tests
allowing the use of calculators
separating complicated problems into smaller steps
creating posters or cheat-sheets to remind students of basic math concepts
hands-on learning aids aka manipulatives

DYSGRAPHIA is associated with writing difficulties, whereas dyslexia is associated with reading difficulties.

Common markers of dysgraphia include:

Trouble forming letters shapes
Tight, awkward, or painful grip on a pencil
Difficulty following a line or staying within margins
Trouble with sentence structure or following rules of grammar when writing, but not when speaking
Difficulty organizing or articulating thoughts on paper
Pronounced difference between spoken and written understanding of a topic

Dysgraphia symptoms typically change over time. Children with dysgraphia generally have trouble with the mechanics of writing and exhibit other fine-motor impairments, while dysgraphia in adolescents and adults manifests as difficulties with grammar, syntax, comprehension, and generally putting thoughts on paper.

Three dysgraphia subtypes:

Motor dysgraphia: Lack of fine-motor coordination and visual perception have long been tied to dysgraphia and may explain difficulties with producing written text. Individuals with motor dysgraphia typically exhibit illegible and slow handwriting, poor drawing and tracing skills, and slow finger-tapping (a common measure of fine motor skills).

Spatial dysgraphia is likely related to problems of spatial perception, which affects letter spacing and drawing ability. Individuals with spatial dysgraphia struggle with handwriting and drawing, however spelling and finger-tapping speed are typically normal.

Linguistic dysgraphia impacts the language processing skills required in the writing process. It most strongly affects spontaneously written text (which hasn't been traced or copied), which is often illegible. Drawing, copying, and oral spelling are not affected by linguistic dysgraphia.

Accommodations:

- Utilizing larger pencils with special grips, or other writing instruments
- Using paper with raised lines to help with margins
- Permitting or asking for extra time on writing-related assignments and tasks
- Allowing alternative methods to showcase learning and work, like oral or recorded responses
- Using assistive electronic technologies, like voice-to-text programs
- Allowing child to type on their computer rather than hand write notes

Developmental Coordination Disorder (DCD) (formerly DYSPRAXIA) causes poor motor planning, sequencing, and perceptual skills. In order to complete a task, a child needs to know the necessary movements and adapt them to different situations. Children with dyspraxia appear awkward when moving their whole body or use too much or too little force. When a child has dyspraxia, he can't imitate others, often mixes up the steps in a sequence, and can't come up with new ideas during play. Dyspraxia is sometimes called "clumsy child syndrome."

Common markers of DCD include:

- Bumping into objects, tripping over nothing, seeming clumsy
- Knocking things over frequently
- Trouble navigating uneven surfaces and/or stairs
- Difficulty learning to ride a bicycle
- Trouble with fine motor skills — when handwriting, using scissors and eating utensils, such as a fork, spoon, or knife, tying shoes, buttoning clothes
- Becoming tired quickly
- Having poor posture or slumping over the desk while writing

Non-motor symptoms:

- difficulty with organization
- trouble remembering rules and instructions
- being "literal" and having difficulty with idioms, metaphors, and sarcasm
- problems with memory
- restricted play
- problems with perception and processing information

This handout has been put together with excerpts from additudemag.com

Important takeaways:

Children with differences can develop understandable negative emotions and childish coping strategies. Modeling appreciation of others' differences and self-acceptance will have a lot more credibility in the context of a Super Saturday classroom where everyone is neurologically different from most people.

Disruptive student behaviors can be caused by a number of factors including fatigue, frustration, underdeveloped self-awareness, underdeveloped self-regulation, feeling unwell from medication side-effects, or somatization of negative feelings.

Your creative problem solving can help a student get more out of their classroom experience. Seek to understand what is causing them difficulty and consider how the setting, instruction, method, or goal might be adjusted (accommodations). Encourage students to observe the others to point out things the others are doing that could be imitated or to encourage appreciation of the wide variety of differences and self-acceptance (coaching).

Some accommodations are suggested for a number of learning disabilities: allowing extra time, alternate communication of instructions or understanding, memory aids, assistance with breaking tasks into smaller steps or with organizing tangible/intangible things into larger groupings.

Extra time example: Consider how the student can use time outside class to prepare for or make progress on activities, and encourage them to try some of your ideas.

Alternate communication example: Some students do best when they can read instructions or hear them or watch a demonstration. If verbal instructions don't seem to be working for them, consider writing down steps or encouraging them to watch as another student does the task.

Organizing example: If a student is having trouble remembering your name, prompt them to think of another person they know with the same name or a word that sounds similar to your name. Ask them how you and this other person or rhyming word are similar/different.