Learning Disabilities (LD)

Learning disabilities are disorders that affect a person's ability to understand or respond to new information. They affect the ability to remember information that appears to have been taken in. This is due to the fact that the brain assimilates and processes certain kinds of new information and performs operations in unique, unusual ways that often make it difficult to achieve normal learning milestones.

Learning disabilities cause problems with listening skills, language skills (including speaking, reading or writing), and mathematical operations.

NB: Learning disabilities are a brain operational difference and do not affect individual's intelligence. They should not be confused with other disabilities such as intellectual disabilities, autism, deafness, blindness, and behavioural disorders. None of these conditions are learning disabilities

Types of LD

Dyscalculia: A specific learning disability that affects a person's ability to understand numbers and learn math facts. Individuals with this type of learning disability demonstrate impaired math calculation skills and difficulty understanding numbers and math facts. Dyscalculia is associated with weaknesses in fundamental number representation and processing, which results in difficulties with quantifying sets without counting, using nonverbal processes to complete simple numerical operations, and estimating relative magnitudes of sets. Because these math skills are necessary for higher-level math problem solving, quantitative reasoning is likely impaired for these individuals.

Dysgraphia: A specific learning disability that affects a person's handwriting ability and fine motor skills. It is a learning disability which involves impaired ability to produce legible and automatic letter writing and often numeral writing. It is rooted in difficulty with storing and automatically retrieving letters and numerals. Learners with dysgraphia often have difficulties in Executive Functions (e.g., planning and organizing).

Dyslexia: A specific learning disability that affects reading and related language-based processing skills. It is characterized by deficits in accurate and fluent word recognition. Individuals with dyslexia struggle with word recognition, decoding, and spelling. Reading comprehension is sometimes impaired due to very poor word reading skills. Learners with dyslexia often have deficits in phonemic and phonological awareness, which refer to the ability to hear, identify and manipulate the sound structure of a spoken word, including its phonemes, syllables, onsets and rimes.

What causes LD

- > Alcohol or harmful drug exposure to the fetus
- Birth trauma or distress
- Exposure to neurologic or central nervous system injury to the fetus or after birth

- ➢ Heredity
- Lack of nurturing environment
- Low birth weight
- > Nutritional deficits
- > Premature birth

Indicators of LD

Dysgraphia	Dyslexia	Dyscalculia
 awkward pencil grip, poor handwriting and pressing very hard on the paper while writing it also makes it difficult for the teen to organize thoughts on paper has trouble with syntax and sentence structure. Grammatical problems may also show up demonstrates a large gap between that ability and putting ideas on paper 	 Difficulty reading, including reading aloud Difficulty memorizing Slow and labour-intensive reading and writing Problems spelling Avoiding activities that involve reading Mispronouncing names or words, or problems retrieving words Trouble understanding jokes or expressions that have a meaning not easily understood from the specific words (idioms), such as "piece of cake" meaning "easy" Spending an unusually long time completing tasks that involve reading or writing Difficulty summarizing a story Trouble learning a 	 freezes when asked maths related questions Keeping track of time and sticking to a schedule can be hard for learners with dyscalculia. overestimate // underestimate the cost of items, time and distance Have math anxiety Has Gauging speed and distance, remembering sequences of numbers Has problems Understanding quantities, measuring Frequently late, occasionally missing important events altogether Gets lost easily; misplaces objects around the house frequently Trouble understanding graphs or charts Often gets several different answers to the same math problem; needs to

foreign language	check work over and over again
	 Unable to remember math rules or times tables

NB: Learning Disabilities often go undetected because they cannot be seen. It is important to notice any significant gaps in learning of a learner whom you suspect has learning disability when compared with peers. Learning disabilities are continual and can cause considerable lifelong challenges.

Accommodations for students with Dyscalculia

- ➤ Talk or Write Out a Problem: Talking through a problem or writing it down in sentence form can help with seeing relationships between the elements.
- Draw the Problem : Drawing the problem can also help visual learners to see relationships and understand concepts. Students can "draw through" the problem with images that reflect their understanding of the problem and show ways to solve it
- Break Tasks Down into Subsets: students can easily get overwhelmed by a complex problem or concept, especially if it builds on prior knowledge — which they may not have retained. Separating a problem into its component parts and working through them one at a time can help students focus, see connections and avoid overload.
- Use "Real-Life" Cues and Physical Objects: Relating math to the practicalities of daily life can help dyscalculic students make sense of concepts and see the relationships between numbers. Props like measuring cups, rulers and countable objects that students can manipulate can make math concepts less abstract.
- Review Often: Because dyscalculic students struggle to retain mathrelated information, it becomes hard to master new skills that build on previous lessons. Short, frequent review sessions — every day, if necessary help keep information fresh and applicable to the next new task. Creating written or drawn references such as cards or diagrams can help with quick reviews.

Accommodation for learners with Dygraphia

What to do

- Accommodate -- reduce the impact that writing has on learning or expressing knowledge -- without substantially changing the process or the product.
- Modify -- change the assignments or expectations to meet the student's individual needs for learning
- Remediate provide instruction and opportunity for improving handwriting

Accommodations

When considering accommodating or modifying expectations to deal with dysgraphia, consider changes in

- 1. The rate of producing written work
- 2. The volume of the work to be produced
- 3. The complexity of the writing task
- 4. The tools used to produce the written product
- 5. The format of the product

Change the demands of writing rate

- Allow more time for written tasks including note-taking, copying, and tests
- Allow students to begin projects or assignments early
- Include time in the student's schedule for being a 'library assistant' or 'office assistant' that could also be used for catching up or getting ahead on written work, or doing alternative activities related to the material being learned.
- Encourage learning keyboarding skills to increase the speed and legibility of written work.
- Have the student prepare assignment papers in advance with required headings (Name, Date, etc.), possibly using the template described below under "changes in complexity."

Adjust the volume

- Instead of having the student write a complete set of notes, provide a partially completed outline so the student can fill in the details under major headings (or provide the details and have the student provide the headings).
- Allow the student to dictate some assignments or tests (or parts of tests) a 'scribe'. Train the 'scribe' to write what the student says verbatim ("I'm going to be your secretary") and then allow the student to make changes, without assistance from the scribe.
- Remove 'neatness' or 'spelling' (or both) as grading criteria for some assignments, or design assignments to be evaluated on specific parts of the writing process.
- Allow abbreviations in some writing (such as b/c for because). Have the student develop a repertoire of abbreviations in a notebook. These will come in handy in future note-taking situations.
- Reduce copying aspects of work; for example, in Math, provide a worksheet with the problems already on it instead of having the student copy the problems.

Change the complexity

- Have a 'writing binder' option. This 3-ring binder could include:
 - A model of cursive or print letters on the inside cover (this is easier to refer to than one on the wall or blackboard).
 - A laminated template of the required format for written work. Make a cut-out where the name, date, and assignment would go and model it next to the cutout. Three-hole punch it and put it into the binder on top of the student's writing paper. Then the student can set up his paper and copy the heading information in the holes, then flip the template out of the way to finish the assignment. He can do this with worksheets, too.

Accommodations for learners with dyslexia

- simplifying written directions
- highlighting essential information
- providing additional practice activities
- blocking out unnecessary stimuli
- > using applicable assistive technology can help make students
- incorporating teaching strategies such as repeating directions, maintaining consistent daily routines,
- using step-by-step instructions,
- combining verbal and visual information,
- ➢ Finally, altering the teaching approach within a classroom to promote individual student performance can benefit all learners.
- > Train children with dyslexia to read each paragraph twice
- Use coloured backgrounds
- teaching dyslexic children to use spell check functions so they can focus more time on reading and writing skills is a great way to break through the 'spelling barrier'