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Learning Disabilities: Types and Identification

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Abstract

Learning disabilities refer to a certain kinds of disorders in the basic psychological processes of an individual. Some people are of the view that these disabilities are hidden disabilities because the strength of children suffering from such disabilities often hides their abilities in other fields. The learning disabilities are also termed as perceptual and communication disorder. **Learning disabilities are neurologically-based processing problems.**

These processing problems can generally interfere with learning basic skills such as reading, writing. Besides that they can also interfere with higher level skills such as organization, time planning, abstract reasoning, long or short term memory and attention. It is very important to realize that learning disabilities can drastically affect an individual's life beyond academics. Moreover, Learning disabilities should not be confused with learning problems that are primarily the result of visual, hearing, or motor handicaps; of mental retardation; of emotional disturbance; or of environmental or economic disadvantages.

This article focuses primarily on types of the learning disabilities such as in basic reading skills, because of their critical importance to academic success and because relatively more is known about these deficiencies. However, other academic, social, and behavioral manifestations of learning disability are also important and cannot be assumed to be adequately addressed by programs to improve basic reading skills. While early intervention is necessary, it should not be assumed to be sufficient to address the multiple manifestations of learning disability.

Keyword: Learning disability, Neurologically based processes, Basic Skills, Higher Skills.

Introduction

Learning Disabilities (Lds) are a group of neurological or brain-based problems that affect one or more ways that a person takes in, stores or uses information. Due to individual differences, no single description or profile can represent all individuals with learning disabilities. Since learning disabilities occur along a spectrum of severity, people can experience mild to significant impacts. In 2002, the Ministry of Education adopted the following definition of learning disabilities, consistent with the definition adopted by the Learning Disabilities Association of Canada and the BC Association of School Psychologists.

"Learning Disabilities refer to a number of conditions that might affect the acquisition, organization, retention, understanding or use of verbal or nonverbal information. These disorders affect learning in individuals who otherwise demonstrate at least average abilities essential for thinking and/or reasoning. As such, learning disabilities are distinct from global intellectual disabilities."

Learning disabilities result from impairments in one or more processes related to perceiving, thinking, remembering or learning. These include, but are not limited to language processing, phonological processing, visual spatial processing, processing speed, memory, attention and executive functions (e.g. planning and decision making). They vary in severity and may interfere with the acquisition and use of one or more of the following: oral language (e.g., listening, speaking, understanding) reading (e.g., decoding, phonetic knowledge, word recognition, comprehension) written language (e.g., spelling and written expression) mathematics (e.g., computation, problem solving) Learning disabilities may also involve difficulties with organizational skills, social perception, social interaction and perspective taking. Learning disabilities

are life-long. The way in which they are expressed may vary over an individual's lifetime, depending on the interaction between the demands of the environment and the individual's strengths and needs. Learning disabilities are suggested by unexpected academic under-achievement or

achievement that is maintained only by unusually high levels of effort and support. Learning disabilities can interfere with a student meeting his or her intellectual and life potential.

Learning disabilities result in unexpected academic Under achievement. They vary considerably, both in terms of the functions they impact and the severity of the impact experienced. The appropriate accommodations depend upon the individual's strengths as well as his/her specific difficulties. Frequently, learning disabilities are not detected before children start school. Many students with learning disabilities display no signs of difficulty, except when they attempt the specific academic tasks that challenge their particular area of cognitive processing difficulty

Identification

Early identification and intervention, appropriate adaptations and supports are keys to success. If a student's performance is assessed in the absence of appropriate adaptations, the assessment may not accurately measure the student's knowledge. Success for a student with learning disabilities does not mean the disorder disappears. It means that the student makes effective use of strengths and compensatory strategies to accomplish personal and educational goals. By definition, people with Lds have average to above average intelligence yet they have very specific impairments in one or more of the psychological processes related to learning. These processes may include:

1. Language processing (understanding and expressing information using words)
2. Visual-spatial processing (perceiving or organizing visual information)
3. Visual-motor processing (carrying out hand-eye activities)
4. Phonological processing (identifying and manipulating speech sounds)
5. Processing speed (speed of taking in, using or pulling out information)
6. Working memory (holding information in mind while also using the information)
7. Executive functions (planning and organizing)

Lds are diagnosed most commonly as an outcome of a comprehensive psychological assessment. Using a number of standardized tests that have been given to thousands of people, psychologists will systematically look at how people think, problem-solve, remember, understand and express information.

Learning Disability and Behavior

Teachers should explore the possible existence of a learning disability when a student who appears to be capable has a history of struggling with specific components of school and/or begins to demonstrate behavioural difficulties. Students with undetected learning disabilities might demonstrate undesirable behaviour for a variety of reasons. They might feel angry, sad, lonely, frustrated, or hopeless as a result of focusing on their difficulties. Frustration might arise out of the students' level of performance compared to their level of actual ability, lack of understanding of why they struggle to perform the task or sometimes the inability to communicate in an appropriate way. A student might also exhibit inappropriate behaviour in order to avoid the frustrating task itself. At other times behaviour might result from poor self-esteem, connected to the student's focus on what he/she can't do; or a student might quit trying, believing that no matter how hard they try they will never attain success. Other behaviour might be the result of an emotional disturbance.

Types of Learning Disabilities

Although students with learning disabilities may share some common attributes, there are many different types of learning disabilities. Some of the most common learning disabilities are outlined below. It should be pointed out that, in many cases, a student will demonstrate qualities which indicate a disability in a number of different areas, not just one.

Arithmetic Disorder

Arithmetic Disorder (Dyscalculia) is generally characterized by difficulty in learning or comprehending mathematics. It affects a person's ability to understand and manipulate numbers or understand numbers themselves. A student with arithmetic disorder might have difficulty with:

1. organizing problems on the page, keeping numbers lined up
2. following through on multiple step calculations, such as long division
3. transposing numbers accurately on paper or on to a calculator, such as turning 56 into 65
4. distinguishing right from left
5. using the mathematical calculation signs, confusing basic operations and facts
6. being hesitant, refusing or experiencing anxiety when asked to engage with mathematical concepts
7. remembering and applying mathematical functions in various ways
8. recalling math rules, formulas or sequences
9. being able to perform an operation one day but not the next
10. understanding abstract concepts like time and direction
11. checking change, reading analog clocks, keeping score during games, budgeting, estimating

Writing Disorder

Writing Disorder (Dysgraphia) is generally characterized by distorted writing in spite of thorough instruction. A student with writing disorder might experience some of the following difficulties:

1. inconsistent and sometimes illegible writing; e.g., mixing print and cursive, upper and lower case, irregular sizes, shapes or slant of letters
2. inconsistent positioning on the page, with respect to lines and margins
3. unfinished words or letters, omitted words and many spelling mistakes
4. find motor difficulty, such as inability to reproduce letters or remembering motor patterns
5. inconsistent speed in writing, either extremely labored or quick
6. writing that doesn't communicate at the same level as the student's other language skills

Reading Disorder

Reading Disorder (Dyslexia) is generally characterized by difficulties with the alphabet, word recognition, decoding, spelling, and comprehension. A student with reading disorder might have difficulty with

the following:

1. naming, learning the sequence of or printing the alphabet
2. memorizing non-phonetic words
3. reading words that cannot be translated into a mental picture (and, a, the, etc.)
4. sound/symbol correspondence, or sequencing of letters to create a word
5. reading aloud without repeated mistakes and pauses
6. comprehending reading material, grasp of vocabulary
7. reading numbers and confusing math symbols
8. organizing what he or she wants to say verbally, or not being able to think of the word needed
9. retelling a story in sequence of events
10. finding a word in the dictionary, naming the days of the week and months of the year

Spelling Disorder

Spelling disorders (Dysorthographia) are generally characterized by difficulties with spelling. They stem from weak awareness or memory of language structures and letters in words. A student with a spelling disorder might present some of the following difficulties, often in conjunction with poor skills in reading and/or arithmetic:

1. arbitrary misspellings, such as addition, omission and/or substitution of letters in words
2. reversal of vowels and/or syllables
3. slow, hesitant or poor written expression
4. errors in conjugation and grammar
5. phonetic spelling of non-phonetic words
6. misunderstanding the correspondence between sounds and letters.

Auditory Processing Disorder

Auditory processing disorder describes a variety of disorders that affect the way the brain processes or interprets what it hears even though the student might have adequate hearing. A student with an auditory processing disorder might have difficulty with the following:

1. listening, particularly where there is background noise or when attention is divided
2. processing information if the speaker is speaking quickly
3. understanding what is said
4. recalling what they have heard or following a sequence of directions
5. recognizing and interpreting distinct sounds or attributing meaning to sounds in words
6. using phonemes incorrectly when speaking
7. applying phonics, encoding (spelling) and decoding (sounding out) words
8. reading comprehension, vocabulary and basic literacy.

Visual Processing Disorder

A visual perception disorder involves difficulty making sense of what is seen, even though vision is intact. A student with visual processing disorder might find the following tasks challenging:

1. recalling and using visual information, e.g. remembering the order or meaning of symbols, words or pictures
2. differentiating colors, letters or numbers that are similar
3. recognizing objects or parts of an object
4. noting and comparing features of different items
5. distinguishing a particular shape from its background and/or understanding how objects are positioned in relation to one another
6. attending when there is competing visual information
7. organizing essays with information from different sources into one cohesive document, or solving math problems
8. writing within margins or on lines, or aligning numbers in math problems
9. find motor tasks, such as writing or copying
10. tracking and/or reading with speed and precision.

Sensory Integration (or Processing) Disorder

Sensory Integration Disorder is associated with the ability to integrate information from the body's sensory systems (visual input, auditory input, olfactory input, taste, tactile input, vestibular input (balance/movement), and proprioceptive input (position). Information from the senses are not interpreted in ways that it can be used efficiently by the brain. A student with a sensory integration disorder might present some of the following difficulties:

1. strong over- or under-responsiveness to movement: e.g. avoids movement or craves it, startles easily, seems clumsy, careless or very physical
2. having a strong attraction to or dislike for getting messy
3. knowing where one's body is in space
4. knowing how much physical pressure to apply to something
5. unusually high or low activity level, or rapidly moving from one to the other
6. calming oneself or unwinding
7. social emotional problems, e.g. easily frustrated, tantrums, acting out, poor self concept,
8. making smooth transitions
9. being easily distracted
10. carrying out small or large motor tasks
11. determining physical characteristics of objects
12. putting ideas into words, delays in speech/language development, articulation .

Organizational Learning Disorder

An organizational learning disorder is a type of learning disability related to challenges with executive functions and frequently accompanies other learning disabilities. Organizational learning disorder might include difficulties in handling too much stimuli or information at one time, thinking in an orderly and logical way, distinguishing direction, or organizing materials and time. A student with an organizational learning disorder might present some of the following difficulties:

1. allocating or organizing time
2. arranging, or locating the beginning, middle and end
3. setting priorities, time management, estimating time
4. following schedules and meeting deadlines
5. solving problems in stages
6. organizing desks or notebooks, finding materials
7. settling down and functioning effectively when settings or expectations change

8. remembering what they are required to do
9. Drafting an outline or assembling materials for presentations.

Social Cue Disorder

Individuals with social cue disorder have difficulty
behaving in an automatic way. Picking up on spoken and unspoken cues is a complex process. Information must be detected, processed, have meaning extracted; then a response must be formulated. A student with social cue disorder might present some of the following difficulties:

1. poor impulse control and/or needs immediate gratification
2. illogical reasons for actions and/or little thought about logical consequences
3. inappropriate conclusions or goals, due to deficient reasoning ability
4. inability to interpret environmental and social cues: e.g. body language, pitch of voice, personal space and/or facial expressions
5. trying too hard or inappropriately to be accepted socially
6. being disruptive due to low tolerance for frustration
7. not understanding social conventions such as standing too close or turn taking.

Differentiated Instruction

Differentiated instruction is a flexible approach to teaching in which a teacher plans and carries out varied approaches to address content, learning processes, learning style, practical procedures, presentation strategies, and assessment tools. It results in a more personal, proactive learning environment, inclusive of a wide variety of learners. When teachers differentiate instruction, they provide students with the structures to maximize strengths, work around weaknesses, and experience timely remediation. This enables students to take advantage of effective learning strategies as they begin to understand their own personal learning styles, interests, needs, and engage with their learning. As a result, student motivation increases. Various aspects of differentiation can be used together to plan for diversity and provide robust interventions for students with learning disabilities.

Universal Design For Learning (Udl)

Universal design for learning (Udl) is a framework of instructional approaches that recognizes and accommodates varied learning styles. It provides learning activities that expand students' opportunities for acquiring information and demonstrating learning, as well as for enhancing social participation and inclusion. The driver for universal design is the philosophy of proactively addressing needs. Universal design for learning is integrated into regular instructional planning as a mechanism to make diversity the norm. It provides support for all students and motivates through the element of choice. The following assumptions underpin universal design:

1. Teachers make adjustments to personalize learning for all students, not just those with disabilities.
2. Flexibility is the key to providing a curriculum that does not stigmatize or penalize students for having learning differences.
3. Curriculum materials are as varied and diverse as the learning style and needs of students.
4. Groups of student include a continuum of learner differences with evolving strengths and needs. Udl is strongly linked to technology because digital formats can be so flexible. Once a text is in digital format, it is transformable – i.e. easily translated from text to speech or expanded with insertions of pictures or video. It is transportable – i.e. easily stored and used again or made available to other students. It is also recordable – i.e. easily stored and played again at will and as necessary for the student. Software applications (advanced organizers and/or graphic organizers for planning, word-prediction software, and spell checkers) provide access to information and the means to respond, so students' work reflects their learning. When students know how to use these software applications, they can be more self-reliant and independent in completing their work. Udl is not technology for the sake of technology, an add-on at the end of unit planning.

Conclusion

The past decade has witnessed a significant improvement in the quality of research on learning disabilities. Much of this recent research has been longitudinal in nature, thus opening the door to the identification of better predictors of different types of Ld, their prevalence, their developmental course, and their response to intervention. Specifically, maintaining the term "learning disabilities" makes little sense for scientific purposes, clinical purposes, or school policy purposes. Instead, the field must grapple with the clear need to address each type of learning disability individually to arrive at clear definitional statements and a coherent understanding of etiology, developmental course, identification, prevention, and treatment.

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