

Module 1

Understanding
*Learning
Disabilities*



Students with learning disabilities have average to above average intelligence and potential but experience difficulty processing information that affects learning. Although they may experience unexpected academic underachievement compared to their intellectual ability, they can still experience academic success.

Learning disabilities affect the cognitive processes related to learning and are thought to be due to variations in brain structure and function. The learning difficulties experienced cannot be explained on the basis of other diagnosed disabilities or environmental influences.

Learning disabilities are complex. They can occur in many different areas of cognitive processing and along a spectrum of severity. As well, they vary greatly in terms of what functions they impact and to what degree that impact is felt by the student.

Unlike many other disabilities, learning disabilities are often less obvious and more difficult to identify. A learning disability, unlike a physical disability, cannot be seen. Students with learning disabilities may show no signs of difficulty except in a particular area of cognitive processing. It might not be obvious that a student's learning difficulties stem from a learning disability.

Early identification and intervention are keys to success; although success does not mean the disability disappears. Instead, the student effectively uses strengths and compensatory strategies to reach both academic and personal goals.

● Key Ideas in this Module

- Definition of a learning disability
- Diagnostic criteria
- Co-morbidity
- Academic skill deficits and cognitive processing deficits

● Definition of a Learning Disability

According to the Learning Disabilities Association of Canada (LDAC), learning disabilities refer to a number of disorders, which may affect the acquisition, organization, retention, understanding, or use of verbal or non-verbal information including:

- 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);
- social skills (e.g., social perception, social interaction, perspective taking);
- organizational abilities.

Learning disabilities are suggested by unexpected academic under-achievement, or achievement which is maintained only by unusually high levels of effort and support given a student's age, schooling, and level of intelligence. This learning difficulty cannot be explained on the basis of other diagnosed disabilities or environmental influences.

Learning disabilities are different from global intellectual deficits. Students with learning disabilities have average or above average intellectual ability. They experience difficulty as a result of impairments in one or more processes related to the following:

- perceiving;
- thinking;
- remembering;
- learning.

These difficulties include, but are not limited to the following:

- language processing;
- phonological processing;
- visual spatial processing;
- processing speed;
- memory and attention;
- executive functions (e.g., planning and decision making).

Learning disabilities range in severity (i.e., mild, moderate, severe).

Although the following factors may further complicate the challenges faced by individuals with learning disabilities, such disabilities are not due primarily to:

- hearing and/or vision problems;
- socio-economic factors;
- cultural or linguistic differences;
- lack of motivation;
- ineffective teaching.

Adapted from: Learning Disabilities Association of Canada.

www.ldac-acta.ca/learn-more/ld-defined.

● Diagnostic Criteria

The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) (American Psychiatric Association, 2013), does not include the term 'learning disability'. Instead, it includes 'specific learning disorder' and lists it under the category of 'neurodevelopmental disorders' in order to emphasize the lifelong nature of these disorders. There are four main diagnostic criteria for a specific learning disorder.

1. The student experiences difficulty learning and using academic skills in specific areas such as decoding words, reading comprehension, spelling, written expression, or mathematics skills for at least 6 months despite the provision of interventions that target those difficulties.
2. The student's level of specific academic skill is substantially below what would be expected given the student's chronological age. This significantly interferes with academic performance or other areas of daily living.
3. The learning difficulties began during school-age years.
4. The learning difficulties are not better accounted for by other individual factors such as the presence of an intellectual disability, inadequate exposure to academic instruction in the language of proficiency, psychosocial adversity, or other mental or neurological disorders.

Source: DSM-5, 2013, pp. 66-74.

● Co-morbidity

Comorbidity refers to the presence of more than one mental health diagnosis occurring in an individual at the same time. Learning disabilities may coexist with various conditions including the following:

- attention disorders;
- behaviour disorders;
- emotional disorders;
- sensory impairments;
- other medical conditions.

● Academic Skill Deficits and Cognitive Processing Deficits

The DSM-5 criteria for diagnosing a learning disorder no longer require that a standardized Intelligence Quotient (IQ) assessment be administered, unless intellectual disabilities or developmental delays are suspected. There is also no longer a requirement for the testing of cognitive processes.

In a recent position paper, where LDAC compared their learning disability definition with the criteria in the DSM-5, they indicate that although an assessment of intelligence and cognitive processing is no longer required for a learning disability diagnosis,

"Both intellectual assessment and data concerning a range of psychological processes provide a more comprehensive profile of strengths and weaknesses of the individual with learning disabilities and are critical

elements of a comprehensive plan for individually targeted intervention and accommodation.” (LDAC, 2015. p.8)

LDAC supports analyzing the underlying cognitive processes (e.g., phonological processing, language processing, memory, etc.), in order to gain better understanding and insight into academic learning difficulties (see [Appendix 1-A](#)).

Summary

- Learning disabilities are thought to be caused by variations in brain structure and function that impact the basic psychological processes involved in learning.
- Learning disabilities are different from global intellectual deficits.
- Learning disabilities are lifelong.
- The DSM-V identifies four main diagnostic criteria for a specific learning disorder.
- Learning disabilities often occur with other disorders and they can be mild, moderate, or severe, making identification and diagnosis challenging.
- LDAC supports both intellectual assessment and an assessment of cognitive processes when diagnosing a learning disability.

References

American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition. Arlington, VA: American Psychiatric Association, 2013.

Fiedorowicz, C., J. Craig, M. Phillips, A. Price, and G. Bullivant. “Position Paper. To Revise or Not To Revise: The Official LDAC Definition of Learning Disabilities Versus DSM-5 Criteria”. *Learning Disabilities Association of Canada*, 2015. www.ldac-acta.ca/learn-more/ldac-position-papers.

Appendix 1-A

Linking Academic Skill Deficits and Cognitive Processing Deficits

Academic Skill Deficit	Core Cognitive Processes	Other Cognitive Processes
Reading		
Word recognition	Phonological awareness	Rapid naming Phonological memory
Reading fluency	Rapid naming Processing speed Orthographic processing	
Reading comprehension	Language <ul style="list-style-type: none"> ■ Vocabulary ■ Morphology ■ Syntax Listening comprehension Working memory Higher order processes <ul style="list-style-type: none"> ■ Inferencing ■ Prior knowledge ■ Comprehension monitoring ■ Story structure sensitivity 	
Mathematics		
Computation	Working memory Spatial processing Visual-spatial motor integration	Attention Processing speed
Word problems	Working memory Executive processes Language	
Written Expression		
Handwriting	Automaticity in retrieving and producing alphabet letters Orthographic coding Ability to form mental representations of written words Graphomotor planning for sequential finger movements	
Spelling	Phonological and orthographic coding (visual-motor integration) Vocabulary knowledge (Grades 1-3)	
Composition	Handwriting automaticity Orthographic coding Working memory	

Source: Fiedorowicz et al. 2015. p.18.