

# **Ontario Psychological Association**



## **Ontario Psychological Association Guidelines for Diagnosis and Assessment of Children, Adolescents, and Adults with Learning Disabilities**

**Consensus Statement and Supporting Documents**

**October 2018**

## **ACKNOWLEDGEMENT**

The Ontario Psychological Association would like to acknowledge and thank the members of the Cross-Sectoral Psychology Working Group on Learning Disabilities, the authors of this document, for their hard work and dedication:

Dr. A. Lynne Beal, Private Practice, Toronto  
Dr. Todd Cunningham, Ontario Institute for Studies in Education, University of Toronto  
Dr. Allyson Harrison, Regional Assessment and Resource Centre, Queens University  
Dr. Alana Holmes, Northern Ontario Assessment and Resource Centre, Cambrian College  
Dr. Jack Kamrad, Peel District School Board  
Caroline Koekkoek, Ontario Association of Psychological Associates  
Dr. Maria Kokai (Co-Chair), Toronto Catholic District School Board  
Dr. Debra Lean, Section on Psychology in Education of the Ontario Psychological Association  
Dr. Carolyn Lennox (Co-Chair), Toronto District School Board  
Dr. Maggie Mamen, Private Practice, Ottawa  
Dr. Marjory Phillips, University of Waterloo  
Dr. Paulo Pires, Hamilton Health Sciences, McMaster University  
Dr. Maggie Toplak, York University  
Dr. Judy Wiener, Ontario Institute for Studies in Education, University of Toronto  
Dr. Tricia Williams, Hospital for Sick Children, Toronto

# Table of Contents

<b>Consensus Statement</b>	<b>4</b>
Purpose	
Criteria for a Diagnosis of Learning Disability (LD)	
Steps for Assessment and Diagnosis of LD	
<b>Supporting Documents</b>	<b>7</b>
Purpose and Historical Context	8
Steps for Assessment and Diagnosis of LD: Key Points and Guiding Questions	10
1. History of Academic Impairment	
2. Developmental, Health, Educational or Contextual Factors	
3. Academic Achievement	
4. Basic Psychological and Cognitive Processes	
5. Abilities Essential for Thinking and Reasoning	
6. Effort, Motivation and Noncompliance with Instructions	
7. Social, Emotional and Behavioural	
8. Formulation of a Diagnosis	
9. Supports and Interventions	
10. Communication	
Frequently Asked Questions	21
1. Ability-Achievement Discrepancy	
2. Optimal Age for Screening and Diagnosis	
3. Adaptations for Culturally and Linguistically Diverse Individuals	
4. Position of the College of Psychologists	
5. Superior Intellectual Ability	
References	27

# **Consensus Statement on Diagnosis and Assessment of Children, Adolescents and Adults with Learning Disabilities**

## **Purpose**

This paper presents a standard, step-wise process for psychological assessment, along with a set of criteria for diagnosis of a Learning Disability (LD) that is consistent with current research. The intention of this approach is to bring consistency in the diagnosis protocols of psychology practitioners across age groups, settings and populations, and it is designed to be inclusive of all children, adolescents and adults, including those who are from culturally and linguistically diverse (CLD) backgrounds.

The impetus for the project was the observed variability in assessing and diagnosing LD resulting from advances in research, new diagnostic criteria for Learning Disorders in the Fifth Edition of the Diagnostic and Statistical Manual (DSM-5) of the American Psychiatric Association (2013), and the definition adopted by the Learning Disabilities Association of Canada in 2002 and ratified in 2015.

It is the product of a group of Ontario psychologists, including representatives from school districts, mental health agencies, hospitals, colleges and universities, graduate education and training programs in psychology, and practitioners in the community in private practice. It constitutes a consensus among the members of the group with respect to both the diagnostic criteria and the assessment process.

## **Criteria for a Diagnosis of Learning Disability**

A Learning Disability is diagnosed when specific criteria are met, to the exclusion of other factors that may impair functioning. See supporting documents for additional information about these criteria.

All of the following criteria must be met to make a diagnosis of Learning Disability:

- A. History of academic functioning below the level typically expected for individuals of the same chronological age, or the need for excessive time or support to develop or maintain typical levels of academic functioning.
- B. Below average academic achievement (i.e., at least one standard deviation below the mean) in at least one of:
  - Reading - indicated by any of
    - word identification or pseudo-word reading;
    - fluency in reading individual words or text;
    - timed or untimed literal or inferential reading comprehension.
  - Writing - indicated by any of
    - production fluency for handwriting or typing;
    - spelling from dictation and in text;
    - sentence structure;
    - conventions of print;

- vocabulary; ideation; organization of written text.
  - Mathematics - indicated by any of
    - Calculation, including but not limited to: numeracy, algebra, geometry and calculation fluency;
    - applications such as the understanding of time, money, measurement, data analysis;
    - and word problem-solving including geometry and data interpretation.
- C. Evidence that the difficulties in reading or writing or mathematics are logically related to deficits in psychological processes. These processes include:
- phonological processing;
  - orthographic processing;
  - rapid automatized naming;
  - memory;
  - processing speed;
  - receptive language;
  - expressive language;
  - visual-spatial abilities;
  - visual-motor integration;
  - executive functioning.
- D. At least average abilities essential for thinking and reasoning.
- E. Evidence that the difficulties in reading, writing, or mathematics cannot be accounted for **primarily** by factors such as
- Other conditions or disorders (e.g., intellectual disabilities, uncorrected visual or auditory acuity, physical or chronic health disabilities, other neurodevelopmental disorders, or internalizing or externalizing disorders);
  - Environmental factors (e.g., psychosocial adversity, inadequate or inappropriate educational instruction);
  - Insufficient motivation or effort;
  - Cultural or linguistic diversity.

Note: Learning Disabilities may co-exist with various other conditions or disorders.

### **Steps for Assessment and Diagnosis of LD**

See Supporting Documents for additional information about these steps.

#### Step 1

Determine whether there is a history of academic impairment.

#### Step 2

Determine whether there is evidence of developmental, health, educational, or contextual factors that are risk factors for LD and other learning difficulties.

#### Step 3

Assess academic achievement (using individual standardized achievement tests).

Step 4

Assess basic psychological and cognitive processes that are risk factors for the specific difficulties in reading, writing or mathematics experienced by the individual being assessed.

Step 5

Assess abilities essential for thinking and reasoning.

Step 6

Assess and rule out other factors that could better explain the pattern of results, including effort, motivation, and noncompliance with instructions.

Step 7

Assess the social, emotional and behavioural strengths and difficulties that are common in individuals with LD.

Step 8

Develop a formulation and diagnostic statement in accordance with the above criteria for a diagnosis of LD.

Step 9

Identify the types of evidence-based and realistic supports and interventions that are required.

Step 10

Communicate the results of the assessment, the diagnosis and the recommendations.

## **Supporting Documents**

## **Purpose and Historical Context for Developing the Consensus Statement on Diagnosis and Assessment of Children, Adolescents and Adults with Learning Disabilities**

In Ontario in the late 1990's, the Ontario government commissioned a seminal study of children's early development (McCain & Mustard, 1999). One of the many observations in the study was a concern that difficulties in school were not identified early enough for effective intervention. In response, the Ontario Ministry of Education funded the Learning Disabilities Association of Ontario (LDAO) to convene two panels of experts to identify guidelines for earlier identification of Learning Disabilities (LD) in children. The Promoting Early Intervention initiative formed two working groups: (1) Definition Working Group; and (2) Screening and Assessment Working Group. Their tasks were to review the Learning Disabilities literature, to develop a consensus definition, and to draft practical guidelines for the psychological assessment of LD. The consensus definition of LD proposed by the LDAO (2001) was adopted widely across Ontario and was shared with the Learning Disabilities Association of Canada, who made minor modifications and adopted a similar definition for national use in 2002, which was ratified again in 2015. During this period, many psychologists utilized the LDAO guidelines for both the identification and the diagnosis of LD, across ages and across settings.

Since that time, there have been research advances in the field of LD and a number of updated policy and position papers, along with greater awareness of the specific issues pertaining to culturally and linguistically diverse individuals. Correspondingly, we have seen increasing variability in the approaches to assessment of LD.

A new edition of the DSM (DSM-5) was published in 2013 by the American Psychiatric Association. The DSM-5 categorizes a Specific Learning Disorder as a neurodevelopmental disorder. There are four essential features of the diagnosis:

- persistent difficulties learning and using key academic skills despite the provision of interventions that target those difficulties;
- performance of academic skills that are well below average for chronological age;
- appearance of the learning difficulties in the school years; and
- a recognition that learning difficulties are not attributable to other neurological conditions or intellectual disabilities.

Beyond meeting basic diagnostic criteria, the DSM-5 cites the need for further assessment in order to indicate the level of impairment. For a disability, "additional information is usually required beyond that contained in the DSM-5 diagnosis, which might include information about the individual's functional impairments and how these impairments affect the particular abilities in question" (p. 25). This information may provide further direction regarding intervention (Tannock, 2013).

While the DSM-5 was being revised, the primary guideline for identification in the education sector was also updated. In 2014, with consultation from the psychology community, the Ontario Ministry of Education published the Policy and Program Memorandum 8 (PPM8) to revise criteria for the identification of students with Learning Disabilities as a learning exceptionality. The document defines Learning Disability as "one of a number of neurodevelopmental disorders that persistently and significantly has an impact on the ability to learn and use academic and other skills. Although PPM8 does not set diagnostic criteria for a Learning Disability in schools, it brings the Ministry's exceptionality definition of Learning Disability closer to the diagnostic criteria.



In 2016, the Association of Chief Psychologists with Ontario School Boards produced guidelines for diagnosing Learning Disabilities. These guidelines recognize Learning Disabilities as a type of neurodevelopmental disorder, and include the assessment of academic achievement, as well as intellectual abilities and a range of cognitive processing abilities. The document focuses on guidelines for diagnosis to guide intervention, rather than on the assessment process.

Within the post-secondary sector, neither an educational identification nor a DSM diagnosis of a Specific Learning Disorder is necessarily sufficient to grant academic accommodations to students seeking them. This is because, at the post-secondary level, access to accommodations is reserved for individuals demonstrating a *disability*. This entails a degree of functional impairment in “daily activities of living” that prevents them from fully accessing and participating in the post-secondary school curriculum. This standard derives from the criteria laid out in the Ontario Human Rights Code (1990), which is the legislation governing Ontario colleges and universities.

Currently, there is no consensus among psychology practitioners about criteria for best practice with regard to assessment and diagnosis of individuals referred to psychology practitioners due to potential Learning Disabilities. As a result, there have been increasing differences between assessments that are based on identification criteria (i.e., in elementary and secondary educational settings) and diagnostic assessments based on DSM-5. These differences cause confusion and at times, disruptions in services for individuals, such as when they transition from high school to post-secondary education or to the workplace. Consequently, there is a need to bring our profession together in a common understanding of a model for assessment and diagnosis that is used consistently across various sectors (e.g., school districts, mental health agencies, hospitals, colleges and universities, graduate education and training programs in psychology, and private practice). We hope that this common understanding will improve consistency in professional practice among psychology practitioners and ultimately serve the best interests of our clients and their families.

## **Steps for Assessment and Diagnosis of Learning Disabilities: Key Points and Guiding Questions to Consider as Appropriate**

This appendix provides key points for consideration for each of the ten assessment steps in the Consensus Statement. Some steps also have guiding questions to assist the psychology practitioner to best understand the profile of the individual, to conceptualize the formulation, to support clinical judgment, and to develop recommendations for intervention. The factors listed in the guiding questions should not be viewed as causes of a Learning Disability (LD), nor do they rule out the presence of LD. They should, however, be considered when interpreting the results of the assessment. The intent is not to have practitioners address each question in psychological reports, but for consideration in formulating a diagnosis.

### **Step 1: Determine whether there is a history of academic impairment.**

#### **Key Points for Consideration**

A thorough history is essential. Academic problems are not always obvious and may be difficult to document, but if there are no academic problems, then there is no Learning Disability. An individual, however, may have average grades on his or her report card in the presence of learning difficulties and potential disability. This could be because the grades are given on the basis of a modified program that is below his or her actual grade level or because of high levels of effort and support.

In younger children, risk factors may be reflected in difficulties with skills that are precursors to reading, writing and math skills. These include acquiring the sounds of language, vocabulary, basic numeracy, or fine motor delays.

#### **Guiding Questions to Consider as Appropriate**

*For individuals who are currently in an educational setting:*

- Is there a history of low or failing grades in school?
- Has the individual invested very high levels of effort or relied on very high levels of support, such as through private tutoring or remedial support to achieve adequate grades?
- At what level were scores on provincial or other standardized tests of academic achievement?
- Has the individual received program accommodations?
- Have teachers made curriculum modifications and did they grade on the basis of the modified program?
- Was there a notable deficit in a specific area of performance (e.g., tests, homework completion, note-taking)?
- Has the individual received evidence-based, classroom-based instruction in reading, writing, and mathematics?
- Has the individual received and responded to a small group intensive intervention to address difficulties in reading, writing, and mathematics or challenges likely associated with English or French being their second language?

*For individuals who are not currently in an educational setting*

- What is the individual's highest level of formal education?

- Has the individual taken more than the typical amount of time to complete a secondary or postsecondary education program?
- Does the individual struggle with tasks that involve literacy, numeracy or executive functioning in the workplace or in the community?

***Step 2: Determine whether there is evidence of developmental, health, educational, or contextual factors that are risk factors for LD and other learning difficulties.***

### **Key Points for Consideration**

Risk factors for LD identified within international research include:

- heritability of reading disabilities (see Petrill, 2013; Willcutt et al., 2010 for review);
- prenatal, neonatal or childhood medical risk factors (see Ashkenazi et al., 2013 for review);
- specific psychological processing deficits (e.g., Swanson & Zheng, 2013);
- slow development of reading decoding skills in culturally and linguistically diverse individuals (e.g., Geva & Wiener, 2015).

### **Guiding Questions to Consider as Appropriate**

- Do other family members experience significant academic challenges or have others been diagnosed with any disability that could impact learning?
- Were language milestones in the individual's first language or motor milestones delayed?
- Is there a history of any prenatal, neonatal or childhood medical risk factors that might predispose the individual to having learning difficulties?
- Did the individual experience interrupted schooling or schooling in a language of instruction other than English or French?
- Are there current or past family stressors that make it difficult for parents or caregivers to provide cognitive and linguistic stimulation?

***Step 3: Assess academic achievement using individual standardized achievement tests.***

### **Key Points for Consideration**

A core aspect of the definition of LD is that the individual's academic achievement is below average. For this reason, administration of a standardized individual achievement test is central to the assessment. For an individual with LD, a normative weakness (such as a score at least 1 standard deviation below the mean) in components of reading, writing, or mathematics skills needs to be demonstrated. In addition to interpreting test scores, it is important to observe the individual's behaviours when engaging in academic tasks, to test the limits, and to perform error analyses.

For English-speaking individuals being educated partially or fully in French or vice versa, it is helpful to administer a standardized individual achievement test in English and French. Practitioners should take into account that there are currently no norms available for French immersion students (Genesee & Jared, 2008). Work samples may be used as supplementary evidence of academic difficulties.

### **Guiding Questions to Consider as Appropriate**

*Regarding observations when working with the individual (this list of questions is not intended to be exhaustive):*

Does the individual:

- respond better when instructions are presented orally versus in writing
- require instructions to be repeated frequently
- respond better orally or in writing
- respond better by pointing or through multiple choice questions or by copying than when having to generate his or her own response
- respond better when concepts and skills are tested through a game, activity, or computer task than by formal tests
- compensate for challenges by using active adaptive strategies, such as rehearsal, mnemonics, imagery, or drawing a diagram
- plan, self-monitor and edit
- respond slowly or impulsively
- require frequent feedback or reinforcement
- master a skill or concept quickly and retain it and/or respond to a particular type of teaching?

*Regarding error analysis:*

- Is there evidence of errors due to possible inattention or executive functioning difficulties, such as:
  - Does not notice math signs or a shift between operations, guesses quickly when reading, or does not notice errors and self-correct?
- Is there evidence of errors that suggest inadequate understanding of a skill or concept, such as:
  - does not do regrouping in subtraction
  - does not correctly pronounce the long vowel in words ending in a silent “e”
  - does not know how to read a calendar or recite days of the week or months of the year?
- Does the individual struggle with a higher-level skill due to problems with a lower-level skill such as:
  - does not read fluently or comprehend because of struggles to decode most words
  - makes errors when solving word problems because of inadequate knowledge of number facts and tables?
- Are the errors consistent/inconsistent with the difficulties experienced among culturally and linguistically diverse (CLD) individuals? (See FAQ 3)

*Regarding English-Speaking students educated partially or fully in French or French students educated partially or fully in English:*

- are their skills more developed in French or English
- is there evidence of positive transfer (i.e., correctly applying the principles they acquired from instruction in French or English to the other language) or of negative transfer (i.e., incorrectly applying French or English language rules to the other language)
- what supports are they obtaining for achievement in each language?

***Step 4: Assess basic psychological and cognitive processes that are risk factors for the specific difficulties in reading, writing or mathematics experienced by the individual being assessed.***

**Key Points for Consideration**

Processing deficits alone do not constitute a Learning Disability. They must be linked logically to the individual's functional impairment. Deficits in specific psychological processes have been found to place individuals at risk for specific academic difficulties (e.g., Geary, 2011; Ozernov-Palchik et al., 2017; Swanson & Zheng, 2013). Processing difficulties may also affect the individual in areas of functioning beyond academics, such as in social interaction and occupational functioning. Deficits in information processing may guide specific interventions to improve the individual's functioning.

Administer tests that would amplify the understanding of the nature of the individual's Learning Disability. For example:

- **Reading:** Word level reading disabilities are associated with difficulties with phonological processing, rapid automatized naming (RAN), and orthographic processing (see Kilpatrick, 2015; Swanson & Zheng, 2013 for review). Furthermore, individuals with both phonological processing and rapid automatized naming difficulties are at a higher risk than individuals with only deficits in RAN (Ozernov-Palchik et al., 2017). Individuals with reading disabilities at the word level are likely to have difficulty with reading fluency, and consequently with reading comprehension. Adolescents and young adults with reading disabilities at the word level may have learned to decode words, but continue to have difficulty with reading fluency, which may affect reading comprehension and spelling. There are, however, individuals with average reading skills at the word level who have difficulties with reading comprehension. These individuals tend to have intact phonological processing but difficulties with oral language, involving vocabulary, morphological awareness, verbal working memory (e.g., measured by sentence repetition) and RAN (e.g., Swanson & Zheng, 2013).
- **Writing:** The evidence with regard to processing factors that are associated with writing difficulties is not as strong as for reading and math due to minimal research on cognitive processes underlying writing. The evidence suggests that individuals with reading disabilities at the word level typically have difficulties with spelling, typically persisting into adulthood. Difficulties in visual-motor integration, fine motor difficulties, and processing speed are often associated with graphomotor (handwriting) difficulties. Individuals with difficulties in handwriting and spelling typically have difficulty with written expression. This occurs, in part, because the cognitive effort needed to write words on the page with correct spelling may reduce capacity for thinking about content and form. In addition, problems with oral language and executive functioning are risk factors for difficulties with written expression (e.g., Harris & Graham, 2013).
- **Mathematics:** Some studies have shown that mathematics disabilities involving calculation are associated with difficulties in visual-spatial abilities, visual-spatial working memory, and processing speed. Individuals who have difficulty with calculations typically have difficulty with processing basic numerical magnitude, math fluency and problem solving. There are, however, individuals with average skills in calculation and math fluency who have difficulties with solving math problems. They often have disabilities in reading

comprehension and oral language (Geary, 2011; Geary et al., 2012; Moustafa et al., 2017; Swanson & Zheng, 2013).

**Step 5: Assess abilities essential for thinking and reasoning.**

**Key Points for Consideration**

For many individuals with LD, standardized individual intelligence tests provide valid measures of global ability (e.g., Beal et al., 2016; Sattler, 2008). These tests include the *Wechsler tests*, *Stanford Binet*, *Woodcock Johnson Test of Cognitive Abilities*, *the Kaufman Assessment Battery for Children* and others. Global scores include Full Scale IQ (FSIQ), General Ability Index (GAI), General Intellectual Ability (GIA), General Factor – Fluid Intelligence (Gf), General Factor - Crystallized Intelligence (Gc), Fluid-Crystallized Index (FCI), and Mental Processing Index (MPI), to name a few.

Standard scores that are between 85 and 115 (i.e. within one standard deviation of the mean) should be considered to be average. Clinical judgment should be used if any scores outside this range (i.e. below 85) are used to represent or justify the criterion of average functioning.

For some individuals with LD, the global scores from these tests may not be valid measures of thinking and reasoning for these reasons:

- Processing deficits, such as in language, visual-spatial areas, working memory, or processing speed may reduce scores on specific component scales and the global score (e.g., Beal et al., 2016; Sattler, 2008; Stanovich, 1991).
- Longstanding Learning Disabilities, particularly in reading, influence scores on IQ tests, such that verbal scores often decline over time in individuals who struggle with reading. (i.e., Matthew effect; Stanovich, 1986).
- Culturally and linguistically diverse individuals and individuals with language processing deficits often obtain lower scores on tests that have high linguistic and cultural loading. These include some tests that are purported to measure fluid reasoning having instructions with high verbal content (Cormier et al., 2016).
- Individuals who have experienced trauma may require some time to develop trust with psychologists before a valid assessment of intellectual ability can be obtained (Bronstein & Montgomery, 2011).
- Some individuals who have minimal or no schooling may also not have had experience with tasks such as two-dimensional puzzles, sorting by shape, and constructing and analyzing patterns (Beal et al., 2016; Ehntholdt & Yule, 2006; Geva & Wiener, 2015).

In cases where a global score on a standardized individual intelligence test does not appear to be a valid measure of abilities essential for thinking and reasoning in individuals with LD, psychologists should consider the following alternatives:

- Using scores on component scales as the estimate of abilities essential for thinking and reasoning (e.g., Verbal Comprehension Index, Fluid Reasoning Index on a Wechsler test).
- Performing a careful analysis of subtest scores to determine whether there is evidence of at least average abilities essential for thinking and reasoning in any major area of functioning.
- For individuals with language impairments and those for whom English or French is not their first language, administering a nonverbal intelligence test to estimate abilities essential for thinking and reasoning.

- Comparing scores on the current assessment with previous assessments if available.
- Postponing or deferring administration of an intelligence test due to the need to develop rapport.
- Deferring judgment about abilities essential for thinking and reasoning due to differences between observations of adaptive behaviour and scores on standardized intelligence tests, and not reporting the global scores.

### **Guiding Questions to Consider as Appropriate**

Psychology practitioners should consider the following carefully when selecting, administering, and interpreting a test of intellectual ability:

- To what extent might processing difficulties affect the results of the tests?
- To what extent might longstanding learning difficulties be affecting scores on IQ tests?
- Are the scores obtained on the measure of intellectual ability consistent with observations of functional or adaptive behaviours?
- Are global ability scores consistent over time?
- Has sufficient trust and rapport with the individual been developed to obtain a valid estimate of intellectual ability?
- Has the individual had sufficient exposure to the language of the cognitive ability test? If not, how might this affect performance on the verbal tests? How might it affect performance on some of the fluid reasoning and visual-spatial tests given their verbal loadings?
- Has the individual had sufficient experience with puzzles, sorting by shape, constructing and analyzing patterns?

***Step 6: Assess and rule out other factors that could better explain the pattern of results, including effort, motivation and non-compliance with instructions.***

### **Key Points for Consideration**

The importance of accurately detecting suboptimal effort when it exists cannot be overstated, given the consequences for data interpretation, diagnostic and etiologic statements, as well as directives for clinical and educational support.

Historically, formal assessment of effort during testing was reserved for cases in which malingering was considered a threat to the validity of test results, as for example among people seeking obvious external gains in forensic settings. More recently, the importance of gauging effort within learning assessments of children, youth and adults has been recognized (DeRight & Carone, 2013). It is important to differentiate not complying to do one's best in testing from use of inadequate strategies or learned helplessness which are different issues (Meltzer et al., 2004).

Clinical judgment alone does a poor job of identifying non-credible performance (Faust et al. 1988). Therefore, the inclusion of measures of effort into learning and neuropsychological assessments is becoming commonplace. Both embedded measures and stand-alone measures have shown utility in measuring effort in children (Donders, 2005, Kirkwood & Kirk, 2010).

However, assessment of effort goes beyond just using tests of effort. It requires consideration of the *consistency* of information drawn from a *range* of sources. For more information on this process and tests, see Assessment and Resource Centres of Ontario (2014).

When there is objective evidence of inadequate effort, the assessment results are not credible and should not be interpreted for the purpose of diagnosis. Regular use of formal assessments of effort offer an essential step in ensuring optimal understanding of the issues presented.

**Step 7: Assess the social, emotional and behavioural strengths and difficulties that are common in individuals with LD.**

**Key Points for Consideration**

Individuals with LD are at increased risk for social, emotional and behavioural difficulties. In some cases, these difficulties are associated with ADHD which is frequently comorbid with LD (Barkley, 2015; Pliszka, 2015), or with other neurodevelopmental or mental disorders. In other cases, some individuals with LD have social, emotional, or behavioural difficulties that do not meet criteria for other diagnoses (see Wiener & Timmermanis, 2012 for review). These difficulties may be related to psychological processing deficits (e.g., interpreting sarcasm, reading body cues, and tracking group conversations; Milligan et al., 2015) or be secondary to the challenges they experience with academics and other school-related stressors. These social, emotional, and behavioural difficulties may interfere with learning and performance in school, work and other settings.

Consider the social, emotional and behavioural functioning of all individuals referred for learning difficulties. However, the comprehensiveness of the assessment may well vary in accordance with the individual's presenting problems and the context. For individuals not presenting with significant social, emotional or behavioural problems, it may suffice to observe their social interactions during the assessment and their emotional responses when given challenging material. For these individuals, informal interviews with the individual, parents or caregivers, and teachers may be sufficient. Screening across several domains using standardized, broad-band measures can be helpful. For individuals with more significant difficulties, diagnostic interviews, standardized rating scales assessing problems in specific areas, structured behavioural observation, and formal and informal projective and play-based tests may be required.

**Guiding Questions to Consider as Appropriate**

*Regarding Self-Awareness*

- What is the nature of the individual's self-esteem and academic self-concept?
- Is the individual motivated to achieve academically?
- Does the individual understand his/her strengths and weaknesses and has he/she attempted strategies to accommodate for his/her difficulties?
- Is the individual able to self-advocate?

*Regarding Social Competence and Social Relationships*

- What is the quality of the individual's social competence?
  - Social awareness
  - Social communication
  - Emotion Regulation
  - Social perspective taking and social problem-solving



- Sense of humour
- What is the quality of the individual's social relationships?
  - Are they accepted, rejected, or neglected by their peers?
  - Have they experienced bullying or have they engaged in bullying behaviors?
  - Do they have friends? Who are their friends? What is the quality of their relationships?
  - For adolescents and adults: Do they date? Are they involved in a stable romantic relationship? If so, what is the quality?
  - Are social relationships and interactions primarily conducted through social media rather than in face-to-face interaction?
  - What is the quality of relationships with parents/caregivers and siblings?
  - What other resources do they have in terms of social support?
- Are any social difficulties consistent with the social impairment typical in ADHD or an Autism Spectrum Disorder?

*Regarding Internalizing Behaviours and Disorders*

- Does the individual manifest significant levels of anxiety?
- Is the anxiety mainly confined to academic achievement contexts?
- Does the individual meet criteria for an anxiety disorder such as Generalized Anxiety Disorder, Separation Anxiety Disorder, Social Anxiety Disorder, or Panic Disorder?
- Does the individual have depressive symptoms? Do these symptoms meet criteria for a depressive disorder?

*Regarding Externalizing Behaviours and Disorders*

- Does the individual exhibit noncompliant and disruptive behaviours?
- Is the individual often truant from school?
- Does the individual exhibit serious conduct problems such as aggression, persistent lying, or stealing?
- In what contexts do these behaviours occur? How are they reinforced?
- Do these problems meet criteria for a diagnosis of Oppositional Defiant Disorder, Conduct Disorder, or Antisocial Personality Disorder?

*Regarding Resilience*

- What are the areas of relative strength that may foster resilience for the individual?
- Are there positive strategies to support good mental health that can be highlighted?

**Step 8: Develop a formulation and diagnostic statement in accordance with the above criteria for a diagnosis of LD.**

**Key Points for Consideration**

For a diagnosis of a Learning Disability to be given, it is necessary and sufficient to meet the five criteria listed in the consensus statement. Valid data are needed as evidence in support of each criterion. However, the process of diagnosing is more complex than simply providing scores and cut-off points on standardized tests. While these serve as a guide, scores must be interpreted through clinical judgment using multiple sources of information. Behavioural observations, interviews, and the individual's pattern of test results all inform the formulation.

As recommended in the DSM-5, it is important to determine whether the individual's "learning difficulties are not better accounted for by intellectual disabilities, uncorrected visual or auditory acuity, other mental or neurological disorders, psychosocial adversity, lack of proficiency in the language of academic instruction, or inadequate educational instruction" (American Psychiatric Association, 2013, p. 67).

Rule in or out any comorbid or co-occurring condition as the primary cause of the individual's academic difficulties keeping in mind the following:

- While the DSM-5 recommends a cut-off standard score of 65 to 75 at most for Intellectual Disability diagnoses, the lower cut-off for average thinking and reasoning utilized in this Consensus Statement is 1 S.D. below the mean (i.e.,  $\geq 85$ ). Those individuals whose scores on tests of thinking and reasoning fall in the Borderline range, or even at the lower limits of the broad Average range, may require various types of accommodations and interventions. Use clinical judgment and provide justification if scores below the cut-off are used to diagnose LD.
- Individuals who do not speak English or French at home may have ongoing lags in their development of academic vocabulary and reading comprehension skills, but do not have ongoing difficulty with word level reading skills. If they have difficulties in phonological processing and word reading skills, in spite of appropriate intervention, it may be appropriate to diagnose LD (Geva & Wiener, 2015).
- Psychosocial adversity including poverty, homelessness, family violence and neglect, traumatic experiences such as witnessing war violence, or food insecurity may contribute to the learning difficulties of the individual.
- Inadequate educational instruction including interrupted or inconsistent schooling, and changes in educational jurisdiction that have different age/grade cut-offs and curricula may partially or fully account for low scores on standardized achievement and intelligence tests.
- Individuals who transfer from a French immersion program to an English program or vice versa may miss the opportunity to learn critical concepts in the language of instruction.

***Step 9: Identify the types of evidence-based and realistic supports and interventions that are required.***

### **Key Points for Consideration**

A major purpose of an assessment and diagnosis is to provide targeted and appropriate supports and intervention. Recommendations should be made for various stakeholders to implement, including the individual being assessed, parents or caregivers, educators, employers, and health practitioners. Recommendations for intervention are most likely to be comprehended and implemented when the recommendations are **S**pecific and clear, **M**easurable, **A**pplicable to the individual's needs, **R**ealistic to implement in the context, **T**imely, and **S**upported by research (SMARTS).

It is beyond our scope to provide a comprehensive discussion of interventions for children, adolescents and adults with LD in the full range of educational, mental health, and workplace contexts. It is, however, essential that psychology practitioners recommend appropriate interventions and accommodations such as:

- evidence-based remedial interventions to develop skills in reading, writing, and mathematics;
- instructional, environmental, and assessment accommodations including assistive technology to enable students to access the curriculum;
- strategies to develop organizational, time management and planning skills;

- classroom and home strategies for behaviour management;
- methods for facilitating social interaction;
- treatment for oppositional and conduct problems and mental health difficulties;
- parenting strategies;
- supports available through workplace settings;
- additional assessments and treatments.

Write recommendations in a manner that guides supports and interventions and the Individual Education Plan (IEP) of students in the elementary and secondary grades. When appropriate, indicate factors individuals could take into account when selecting a career, as recommended in *Supporting Transitions for Students with Special Education Needs* (PPM 156; Ontario Ministry of Education, 2013).

Write recommendations for adults in workplace settings that take account of the essential skills required for the individual's specific job, potential accommodations for employment advancement criteria (e.g., upgrading tests, exams or other such requirements), assistive technologies where required in order to access or produce written materials, contract demands (e.g., requirement for second-language training) and other such workplace-specific issues.

**Step 10: Communicate the results of the assessment, the diagnosis and recommendations.**

**Key Points for Consideration**

The results of assessment, the diagnosis and recommendations must then be communicated effectively to the individual or his or her personal representative both in interviews and written reports.

In Ontario, communicating a diagnosis is a controlled act under the Regulated Health Professions Act (1991). The controlled act of diagnosis is defined as: *Communicating to the individual or his or her personal representative a diagnosis identifying a disease or disorder as the cause of symptoms of the individual in circumstances in which it is reasonably foreseeable that the individual or his or her personal representative will rely on the diagnosis.*

A diagnosis may be communicated only by appropriately qualified members of the College of Psychologists of Ontario and the College of Physicians and Surgeons of Ontario. Not all persons who actually perform the assessment may be a member of these professions (e.g., teacher, psychometrist, Speech-Language Pathologist). Their communications may not link an individual's problems in daily functioning or test results to any disorder, such as a Learning Disability. The formulation and communication of a diagnosis is different from the identification of an individual as Exceptional under the Education Act in Ontario (1990). An identification as Exceptional under the Education Act may be made only by the Identification, Placement and Review Committee at the school district. This distinction could be misunderstood since the term "Learning Disability" is both a diagnosis and a learning disorder defined by the Exceptionality categories and definitions.

The communication of the diagnosis is made to the individual and/or a personal representative (e.g., parent or guardian). Then, with consent, the report may be shared with appropriate stakeholders for the individual to access services in schools, colleges and universities, the workplace, and mental health, funding and other support agencies. The report would then be read by caregivers, educators, health professionals, insurance companies, special needs departments in colleges or universities, parole boards, workplace managers, training program coordinators and others who have influence over

access to a range of supports. Obtain informed consent prior to disclosing a diagnosis and assessment report to anyone other than the individual or the designated personal representative.

*When communicating assessment results in interviews:*

- Invite questions and comments and provide opportunities for input;
- Address the issues that the individual or family wants to know about;
- Use vocabulary that the listener will understand. Avoid technical or statistical terms (jargon);
- Keep explanations succinct and to the point, referring back to the questions that individuals and their families have and the concepts and situations they know;
- Discuss tasks that were used in the assessment if they will help with understanding;
- Use both verbal and visual representations of concepts, depending on the optimal modality for the client;
- Summarize key points that are relevant to what needs to be addressed following the assessment.
- Adjust communication to various cultural beliefs and expectations (see FAQ 3);
- When communicating through an interpreter, explain the results and diagnosis in language that is easily interpreted and understood.

*When communicating assessment results in reports:*

- Write a report that can be understood by a range of readers, including those with Learning Disabilities, and that addresses the information that the individual, the family, educators, and others reading the report will find helpful. Take into account levels of education and English or French language proficiency of individuals and their families.
- Incorporate information gleaned from individuals and their families at the face-to-face meeting into the report. Since they have lived with the Learning Disability, they provide important information that helps everyone make sense of the results.
- Organize the report by functional domain (e.g., evidence of academic impairment and developmental, health, educational, or contextual factors that are risk factors for LD; academic achievement; abilities essential for thinking and reasoning; psychological processes; social, emotional and behavioural functioning) integrating information from observations, interviews, and test performance. The domains should be consistent with the referral questions and could be phrased as questions in headings, with answers following. This description of strengths and needs should be followed by recommendations for remediation, compensation, modification, and accommodation in home, educational, workplace and other settings and when appropriate, recommendations for treatment.
- Include a summary with the diagnostic formulation in accordance with the five criteria for a Learning Disability diagnosis in the consensus statement.
- As the majority of potential readers are not statisticians or other psychologists, resist reporting every test score, statistical significance, standard error of measurement, etc. A report that states the test results in words, charts, tables and numbers may overwhelm most readers. Attach technical details in a table of test results that includes standard scores, ranges and/or percentile scores, and perhaps a one-line description of tests for more interested readers.
- Write a brief conclusion that is easy for the individual and others reading the report to understand and remember (see Wiener & Costaris, 2012 for review of research).

## Frequently Asked Questions (FAQ)

### Index of Questions

1. Why has the ability-achievement discrepancy criterion for diagnosis of LD been discredited?
  2. Is there an optimal age to first screen for and diagnose LD?
  3. What adaptations are required for assessments of culturally and linguistically diverse (CLD) individuals experiencing learning difficulties?
  4. What is the position of the College of Psychologists of Ontario with regard to this approach to assessment and diagnosis of LD? Are we not obliged to follow DSM-5?
  5. What issues should be considered when diagnosing LD in individuals with very superior intellectual ability?
- 

### 1. Why has the ability-achievement discrepancy criterion for diagnosis of LD been discredited?

Discrepancy between ability as measured on IQ tests and achievement has often been used by psychologists as the main criterion in the diagnosis of a Learning Disability. However, the problems with this criterion have been the subject of considerable research which has been summarized in several reviews of the literature (e.g. Cotton et al., 2005; Dennis et al., 2009; Fletcher et al., 2013; Harrison & Holmes, 2012; Tannock, 2013). As reported in these reviews, the ability-achievement discrepancy criterion has been discredited and is not consistent with best practices for the following reasons:

- Due to the normal variability in test scores in typically developing children and adults, individuals with an ability-achievement discrepancy often score in the average or above average range on all areas of achievement (Binder et al., 2009; Brooks et al., 2009; Brooks, 2011; Fletcher et al., 2005).
- There are serious psychometric problems, including measurement error, regression to the mean, and low classification stability (Cotton et al., 2005). For example, more than 30% of students with a significant ability-achievement discrepancy in Grade 3 no longer showed this discrepancy in Grade 5 (Francis et al., 2005);
- Meta-analyses have shown that individuals with significant ability-achievement discrepancies tend to have higher scores on those verbal and nonverbal tasks that are typically measured on IQ tests than do those individuals who do not have such a discrepancy. There are, however, no significant differences in reading, phonological processing, academic achievement, internalizing behaviour, and externalizing behaviour between poor readers with and without an ability-achievement discrepancy (Hoskyn & Swanson, 2000; Stuebing et al., 2012);
- Ability-achievement discrepancy is not a strong predictor of impairment (B. J. Lovett et al., 2009; Sparks & B. J. Lovett, 2009);
- There are no differences in prognosis for improvement in reading skills between individuals with or without a significant ability-achievement discrepancy (Share et al., 1989; Flowers et al., 2001; Vellutino et al., 2000);
- There are no differences between individuals with or without an ability-achievement discrepancy on functional MRI (Tanaka et al., 2011);
- Twin studies examining heritability of ability-achievement discrepancy are inconclusive (Pennington et al. 1992; Wadsworth et al. 2000).

## 2. Is there an optimal age to first screen for and diagnose LD?

The age at which to first assess a child depends predominantly on the purpose of the assessment. Is it to screen for the risk of LD or to diagnose LD? Historically, assessments for considering diagnoses of LD were discouraged until grades three or four. Delaying would account for developmental and environmental variability in the early years, as well as for the lack of tools available to assess young children (see review by Vaughn & Fuchs, 2003). The practice of postponing assessments was also influenced by the now highly-discredited ability-achievement discrepancy criteria, and the reality that children had to be a certain age for such discrepancies to be documented (e.g. Francis et al., 2005; Stuebing et al., 2002). With advances in test construction, knowledge of early risk factors associated with LD, and expertise among clinicians in evaluating young children effectively, there have been many gains in our ability to assess neurocognitive development and learning during the early academic years (Baron & Anderson, 2012). While risk factors may be identified at earlier stages of development, once a child is receiving formal schooling, academic difficulties can be reliably assessed and diagnosis of LD may be considered.

Earlier assessment need not involve complex psychoeducational testing such as administration of IQ tests. It does involve effective screening of all children in kindergarten and grade one for early identification and to optimize access to early intervention (Fletcher & Vaughn, 2009; Vaughn & Fuchs, 2003). Those determined to be at risk, based on low early literacy (e.g., phonemic processing) and numeracy skills, are then provided with evidenced-based intervention in kindergarten and the early grades. Interventions are delivered in the regular classroom or in small groups. Many early intervention programs have well-documented success in kindergarten and the early grades, with a substantial reduction in the number of children later requiring long-term special education (Foorman & Al Otaiba, 2009; Lovett et al., 2000). Further, Lovett and her colleagues recently showed that reading intervention was best when implemented in grade one or two, compared to grade three. In addition, children with intervention during grade one continued to develop reading skills in later years at a faster rate relative to children who had intervention in grade two or three (Lovett et al., 2017).

However, some children will not benefit from such early intervention. They may require more intensive, systematic instruction, as well as compensatory learning strategies and accommodations. These children will require comprehensive psychoeducational assessment to inform the specific compensatory strategies and accommodations that are needed. The diagnosis of LD is reserved for children whose reading or other academic problems are severe and seemingly intractable following early intervention efforts in grade one or two (Lyon et al., 2001). However, if a child is struggling academically and has gone unidentified or unsupported during grade one, assessment to indicate the nature of difficulties to guide intervention is essential to emphasize and advocate for the child's needs. Waiting until the end of grade two misses an evidence-based window of opportunity for intervention and may reduce the effectiveness of future interventions.

There are also populations of children at disproportionate risk for learning challenges, such as children with early symptoms or diagnosis of ADHD, language disorders, or Autism Spectrum Disorder. They will benefit from early psychological assessments to inform academic and psychosocial intervention. Children with complex medical conditions (e.g. extreme prematurity, congenital heart disease), early brain injury (e.g. neonatal stroke, brain tumor, traumatic brain injury) or conditions such as epilepsy, all with well-documented learning comorbidities, will also benefit from early assessment with a focus on contributing to school-based support (Baron & Anderson, 2012).

### **3. What adaptations are required for assessments of Culturally and Linguistically Diverse (CLD) individuals experiencing learning difficulties?**

More than 25% of Ontario residents are first or second-generation immigrants or refugees, or identify as Indigenous (Statistics Canada, 2016). It is therefore important for Ontario psychologists to have the knowledge and skills required to conduct assessments with CLD individuals and to differentiate LD from language and cultural differences.

The response to this FAQ is in four parts: Cognitive, language and literacy skills; adapting to cultural and immigration factors; social, emotional and behavioural assessment; and specific considerations for individuals who identify as Indigenous. Geva and Wiener (2015) provide the rationale (including research conducted in Ontario) for the strategies described below.

#### ***Cognitive, Language, Literacy, and Math Skills:***

Research on the development of language and literacy skills of First (L1) and Second (L2) Language Learners shows that L2 students who enter Ontario schools in the primary grades quickly develop word level reading skills, the cognitive processes underlying their word level reading are the same as L1 learners, oral language skills and reading comprehension typically do not reach the level of L1 learners six years post-immigration, and non-word repetition abilities predict oral language acquisition. IQ tests, including nonverbal tests, have high cultural and linguistic loading (Cormier et al. 2016; Geva & Wiener, 2015).

The following are implications of this research for assessment of CLD children and youth:

- Consider a diagnosis of LD in L2 individuals who have had two or more years of English or French reading instruction and have below average word-level reading and spelling skills.
- Examine the types of errors that individuals make on language and reading comprehension tests. Consider positive transfer (e.g., they may use words that are similar in their L1 to understand the L2), and negative transfer (they may apply grammatical structures that are correct in their L1 to their L2 when that is not appropriate).
- Compare the functioning of the individual with siblings or peers from the same context.
- Assess in the individual's first language when appropriate.
- Assess cognitive processes (phonological processing, RAN, and non-word repetition).
- Consider that if phonological processing scores are below average even after explicit instruction for one or more years in English or French, that this may represent a Learning Disability, rather than being due to ELL status alone.
- Determine whether errors are associated with instruction that differs from what is commonly taught in Canada (e.g., different symbols, terminology and procedures in math, inadequate knowledge of symbols and metaphors used by native speakers of English or French).
- Supplement standardized cognitive and achievement tests with response to intervention and dynamic assessment strategies.
- Carefully consider whether it is necessary to administer an IQ test and the timing of administration. Use a nonverbal test when appropriate and ensure that the individual understands the directions on nonverbal tasks.
- Use clinical judgment when interpreting scores, considering the verbal and cultural loading of the test and subtests, and examine scores on component scales and subtests for indications of average ability.

### ***Adapting to Cultural and Immigration Factors:***

Immigrants to Canada tend to have higher education levels than the Canadian population at large. Although most are resilient in spite of the stresses of adapting to a new language and culture, some struggle to adapt. Some immigrants may have assimilated into the dominant Canadian culture or may have integrated Canadian culture with their own culture, whereas others may not have adopted Canadian cultural norms even after several years. The following strategies are recommended for individuals and families who have struggled to learn English or French or have not adapted to Canadian culture.

#### *Understanding the Family Context*

- Learn about community history and current political and social issues.
- Think carefully about who the best informant might be.
- Spend time to create trust – confidentiality may be very important due to a heightened perception of stigma. Follow the lead of the individual and family members.
- Ask about immigration and language history, social supports in Canada, communication with family in the home country, and if relevant, experiences with violence that might have induced trauma.
- Some CLD individuals may give indirect or fragmented responses to questions about developmental, health, education and family history because in their culture they use narrative to communicate. Listen to and analyze their narrative.
- Select and prepare interpreters carefully and ask for their help with cultural interpretation.

#### *Communicating the results of assessments*

- Establish the individual and family's capacity for understanding the assessment results and adjust communication to that level.
- Because individuals may not have encountered the concept of LD or other mental health issues, and attribute their learning difficulties or those of their children to insufficient effort or an inadequate school system, strive to understand their attitudes and attributions for the learning difficulties. Explain LD and refer them to information written in their own language if possible.
- Use visuals and graphics to explain concepts.
- Provide a simple report summarizing strengths, weaknesses, and recommendations. Have the simple report translated into the L1 if possible.
- Access the services of an interpreter even when the individual or parents-caregivers have English or French basic communication skills.

### ***Social, Emotional and Behavioural Assessment***

Some of the typical ways psychologists assess social, emotional and behavioural functioning are problematic with many CLD individuals. Most standardized rating scales and diagnostic interviews have a high linguistic and cultural loading. CLD individuals may interpret items differently (e.g., in a culture where obedience is highly valued, normative levels of noncompliance might be seen as deviant). The following strategies are recommended:

- Use multiple sources (self- report, family- report, and teacher report) and methods (observations, interviewing, formal objective rating scales, and informal projective tests such as drawings and sentence completions).
- Use standardized rating scales written in the individual's or parent's L1 (e.g., *The Strengths and Difficulties Questionnaire* has been translated into 86 languages; Goodman, 2001; <http://www.sdqinfo.com/>).



- Consider acculturation effects.
- Analyze narratives provided by the individual and family members.
- Be sensitive to signs of anxiety, depression, PTSD, and other disorders that are associated with loneliness, trauma, and immigration struggles.

### ***Specific Considerations for Individuals who Identify as Indigenous***

There are three key issues that suggest that psychologists should adopt a critical perspective regarding assessment of individuals who identify as Indigenous.

- The educational attainment of Indigenous children and adults is lower than the Canadian population at large. Indigenous youth, however, are more likely to complete secondary and postsecondary education than their parents (Statistics Canada, 2011). Although there is considerable variability, with Indigenous children in urban settings and some rural communities having educational attainment and achievement levels similar to the Ontario population, in some remote northern Ontario communities, the high school graduation rates are low and the mean score of children on standardized language and literacy tests is approximately one standard deviation below the mean of the normative population (Cunningham, 2018). Possible reasons include test bias, federal schools on reserves having lower per-pupil funding than Ontario schools resulting in frequent teacher turn-over and inadequate and interrupted instruction, trauma and intergenerational trauma due to the history of oppression and cultural genocide, and mental health difficulties that are typically untreated because of inadequate resources.
- As many Indigenous children were taken from their families for adoption by non-Indigenous families, a practice that continued for many years (60's scoop), parents may be wary that psychologists may take their children away.
- Many Indigenous individuals do not ascribe to the medical model of assessment and diagnosis (e.g., Kirmayer, et al. 2011; Kirmayer et al. 2014).

For the most part, the adaptations for psychological assessments and diagnosis of LD for CLD individuals in general pertain to the Indigenous population. Due to the above issues, the following are some specific additional strategies that may be appropriate in some contexts:

- Developing trust with individuals and families may include developing trust with community leaders with specific reference to elders.
- Be clear that your role is to help individuals or their children with academic learning and mental health.
- Depending on the individual and the context, it may be very challenging to diagnose LD, and the diagnosis may not be required to provide intervention. Decide whether it would be useful to give a diagnosis, or whether the focus should be on describing the learning profile and providing recommendations for intervention.
- In some communities it might be more appropriate to emphasize language, literacy and numeracy development for all community members rather than diagnosing LD in individuals. When it is necessary to diagnose, a lower cut-off than an academic achievement standard score of 85 may be needed.

#### **4. What is the position of the College of Psychologists of Ontario with regard to this approach to assessment and diagnosis of LD? Are we not obliged to follow DSM-5?**

The College does not recommend or endorse specific approaches to assessment or diagnosis of LD. Members are, however, required to abide by those standards of practice that apply

directly to the approach outlined in this current document. Specifically, Section 10 of the College of Psychologists of Ontario's *Standards of Professional Conduct (2017)* focuses on Assessment and Intervention. While the whole section is important, the following three subsections are particularly relevant in the context of LD.

- **10.3 Rendering Opinions**

*A member must render only those professional opinions that are based on current, reliable, adequate, and appropriate information.*

This speaks to the need to utilize up-to-date, valid and reliable assessment instruments and techniques that provide appropriate data to support the various criteria leading to a diagnosis.

- **10.4 Identification of Limits of Certainty**

*A member must identify limits to the certainty with which diagnoses, opinions, or predictions can be made about individuals or groups.*

It is important to remember that the vast majority of recipients of an oral and written feedback do not have a background in statistics. While it is sometimes appropriate to provide standard error of measurement or similar data in a table of results, it is not necessary to go into detail in the body of a discussion or report. Rather, it is important to be able to justify the conclusions drawn from the data with a degree of confidence that is based on the statistical level of certainty.

- **10.6 Clarity of Communication**

*A member must make best efforts to present information in a manner that is likely to be understood by the client.*

This issue is dealt with at length in Step 10.

It is, of course, necessary for psychology practitioners to ensure that they are practising within their declared areas(s) of competence and with given populations of clients. Competence in Assessment and Diagnosis is required in order to become registered within the Province of Ontario. Within that competence, there is still a need to be familiar with the body of knowledge, skills and assessment instruments that underpin the ability to assess and diagnose LD, along with an understanding of the types of evidence-based interventions that can address them.

The approach to assessment and diagnosis outlined in this document does not contradict DSM-5. Rather, it incorporates and goes beyond the four essential features to gather information on various information processing areas that have been directly linked to LD, which can guide more focused interventions based on an individual's pattern of specific strengths and weaknesses.

## **5. What issues should be considered when diagnosing LD in individuals with very superior intellectual ability?**

There is considerable evidence that individuals with well above average intelligence often have areas of strengths and weaknesses in major areas of academic functioning and psychological processing (Maddocks, in press). For example, Maddocks found that very high proportions of individuals with an IQ  $\geq 130$  would be diagnosed as LD if only ability-achievement discrepancy criteria are used, without consideration of academic impairment. Using criteria A and B in the Consensus Statement is supported, however, indicating that LD should only be diagnosed in the presence of a history of academic difficulties and below average academic achievement. Furthermore, discrepancies among processing abilities, while important, often reflect normal variability (Flanagan & Alfonso, 2011).

## References

- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5<sup>th</sup> ed.). Washington, DC: Author.
- Ashkenazi, S., Black, J. M., Abrams, D. A., Hoefft, F., & Menon, V. (2013). Neurobiological underpinnings of math and reading learning disabilities. *Journal of Learning Disabilities, 46*(6), 549-569.
- Assessment and Resource Centres of Ontario. (2014). *Gauging effort in PSE students undergoing psychoeducational assessment: Guidelines from the Assessment and Resource Centres of Ontario (ARCs)*. Available from the Northern Ontario Assessment and Resource Centre (NOARC) and the Regional Assessment and Resource Centre (RARC). <http://www.noarc-cerno.ca/> or <https://www.queensu.ca/rarc/home>. (Use the Contact Us link to obtain document.)
- Barkley, R. A. (2015) Comorbid Psychiatric Disorders and Psychological Maladjustment in Adults with ADHD. In R. A. Barkley (Ed.), *Attention-deficit hyperactivity disorder: A handbook for diagnosis and treatment* (4th ed., pp. 343-355). New York, NY: Guilford Press.
- Baron, I. S., & Anderson, P. A. (2012). Neuropsychological Assessment of Preschoolers. *Neuropsychology Review, 22*, 311–312.
- Beal, A. L., Holdnack, J. A., Saklofske, D. H., & Weiss, L. J. (2016). Practical considerations in WISC-V interpretation and application. In L.J. Weiss, D.H. Saklofske, J.A. Holdnack, & A. Prifitera (Eds.) *WISC-V assessment and interpretation*. Boston: Academic Press.
- Binder, L. M., Iverson, G. L., & Brooks, B. L. (2009). To err is human: “Abnormal” neuropsychological scores and variability are common in healthy adults. *Archives of Clinical Neuropsychology, 24*(1), 31-46. doi: /10.1093/arclin/acn001
- Bronstein, I., & Montgomery, P. (2011). Psychological distress in refugee children: A systematic review. *Clinical Child and Family Psychology Review, 14*, 44-56.
- Brooks, B. L. (2011). A study of low scores in Canadian children and adolescents on the Wechsler intelligence scale for children, fourth edition (WISC-IV). *Child Neuropsychology, 17*(3), 281-289. doi: /10.1080/09297049.2010.537255
- Brooks, B. L., Iverson, G. L., Sherman, E. M. S., & Holdnack, J. A. (2009). Healthy children and adolescents obtain some low scores across a battery of memory tests. *Journal of the International Neuropsychological Society, 15*(4), 613-617. doi: /10.1017/S1355617709090651
- College of Psychologists of Ontario (2017). *Standards of professional conduct*. Retrieved from [http://www.cpo.on.ca/Standards\\_of\\_Professional\\_Conduct.aspx](http://www.cpo.on.ca/Standards_of_Professional_Conduct.aspx).
- Cormier, D. C., Wang, K., & Kennedy, K. E. (2016). Linguistic demands of the oral directions for administering the WISC-IV and WISC-V. *Canadian Journal of School Psychology, 31*(4), 1-15.
- Cotton, S. M., Crewther, D. P., & Crewther, S. G. (2005). Measurement error: Implications for diagnosis and discrepancy models of developmental dyslexia. *Dyslexia: An International Journal of Research and Practice, 11*(3), 186-202.
- Cunningham, T. (2018). *Brief Psychoeducational Assessment: A Necessity for Supporting Northern Ontario Educators*. Montreal: Canadian Psychological Association.

- Dennis, M., Francis, D. J., Cirino, P. T., Schachar, R., Barnes, M. A., Fletcher, J. M. (2009). Why IQ is not a covariate in cognitive studies of neurodevelopmental disorders. *Journal of the International Neuropsychological Society*, 15, 331–343.
- DeRight, J., & Carone, D. A. (2013). Assessment of effort in children: A systematic review. *Child Neuropsychology*, 21(1), 1-24.
- Donders, J. (2005). Performance on the Test of Memory Malingering in a mixed pediatric sample. *Child Neuropsychology*, 11, 221-227
- Education Act, Revised Statutes of Ontario. (1990, c. E.2). Retrieved from the Ontario e-Laws website: <https://www.ontario.ca/laws/statute/90e02>.
- Ehnholt, K. A., & Yule, W. (2006). Practitioner review: Assessment and treatment of refugee children and adolescents who have experienced war-related trauma. *Journal of Child Psychology and Psychiatry*, 47(12), 1197-1210.
- Faust, D., Hart, K., Guilmette, T.J., & Arkes, H.R. (1988). Neuropsychologists' capacity to detect adolescent malingerers. *Professional Psychology: Research and Practice*, 19, 508-515.
- Flanagan, D. P. & Alfonso, V. C. (Eds.). (2011). *Essentials of specific learning disability identification*. Hoboken, NJ: John Wiley & Sons
- Fletcher, J. M., Denton, C., & Francis, D. J. (2005). Validity of alternative approaches for the identification of learning disabilities: Operationalizing unexpected underachievement. *Journal of Learning Disabilities*, 38(6), 545-552
- Fletcher, J.M., Stuebing, K.K., Morris, R.D., & Lyon, G.R. (2013). Classification and definition of learning disabilities: A hybrid model. In H. L. Swanson, K. R. Harris, & S. Graham (Eds.), *Handbook of learning disabilities* (2nd ed., pp. 33-50). New York, NY: Guilford.
- Fletcher, J. M., & Vaughn, S. (2009). Response to intervention: Preventing and remediating academic difficulties. *Child Development Perspectives*, 3(1), 30-37.
- Flowers, L., Meyer, M., Lovato, J., Wood, F., & Felton, R. (2001). Does third grade discrepancy status predict the course of reading development. *Annals of Dyslexia*, 51, 49-74.
- Foorman, B. R., & Al Otaiba, S. (2009). Reading remediation: State of the art. In K. Pugh & P. McCardle (Eds.), *How children learn to read: Current issues and new directions in the integration of cognition, neurobiology and genetics of reading and dyslexia research and practice* (pp. 257–274). New York, NY: Psychology Press.
- Francis, D. J., Fletcher, J. M., Stuebing, K. K., Lyon, G. R., Shaywitz, B. A., & Shaywitz, S. E. (2005). Psychometric approaches to the identification of LD: IQ and achievement scores are not sufficient. *Journal of Learning Disabilities*, 38(2), 98-108.
- Geary, D. C. (2011). Consequences, characteristics, and causes of mathematical learning disabilities and persistent low achievement in mathematics. *Journal of Developmental and Behavioral Pediatrics*, 32(3), 250-263.
- Geary, D. C., Hoard, M. K., Nugent, L., & Bailey, D. H. (2012). Mathematical cognition deficits in children with learning disabilities and persistent low achievement: A five-year prospective study. *Journal of Educational Psychology*, 104(1), 206-223.
- Genesee, F., & Jared, D. (2008). Literacy development in early French immersion programs. *Canadian Psychology/Psychologie Canadienne*, 49(2), 140-147.

- Geva, E., & Wiener, J. (2015). *Psychological assessment of culturally and linguistically diverse children and adolescents: A practitioner's guide*. New York, NY: Springer.
- Goodman, R. (2001). Psychometric properties of the Strengths and Difficulties Questionnaire. *Journal of the American Academy of Child & Adolescent Psychiatry, 40*(511), 1337–1345.
- Harris, K. R., & Graham, S. (2013). "An adjective is a word hanging down from a noun": Learning to write and students with learning disabilities. *Annals of Dyslexia, 63*(1), 65-79.
- Harrison, A. G., & Holmes, A. (2012). Easier said than done: Operationalizing the diagnosis of learning disability for use at the postsecondary level in Canada. *Canadian Journal of School Psychology, 27*(1), 12-34.
- Hoskyn, M., & Swanson, H. L. (2000). Cognitive processing of low achievers and children with reading disabilities: A selective meta-analytic review of the published literature. *School Psychology Review, 29*(1), 102-119.
- Human Rights Code, Revised Statutes of Ontario. (1990, c. H.19). Retrieved from the Ontario e-Laws website: <https://www.ontario.ca/laws/statute/90h19>.
- Kilpatrick, D. (2015). *Essentials of assessing, preventing, and overcoming reading difficulties*. New York, NY: Wiley.
- Kirkwood, M. W., & Kirk, J. W. (2010). The base rate of suboptimal effort in a pediatric mild TBI sample: Performance on the Medical Symptom Validity Test. *Clinical Neuropsychologist, 24*, 860 – 872.
- Kirmayer, L. J., Dandeneau, S., Marshall, E., Phillips, M. K., & Williamson, K. J. (2011). Rethinking resilience from Indigenous perspectives. *Canadian Journal of Psychiatry, 56*, 94-91.
- Kirmayer, L. J., Guzder, J., & Rosseau, C. (Eds.). (2014). *Cultural consultation: Encountering the other in mental health care*. New York, NY: Springer.
- Learning Disabilities Association of Ontario (2001). *Learning disabilities: A new definition*. Retrieved from [www.ldao.ca/documents/Definition\\_and\\_Suporting%20Document\\_2001.pdf](http://www.ldao.ca/documents/Definition_and_Suporting%20Document_2001.pdf).
- Lovett, B. J., Gordon, M., & Lewandowski, L. J. (2009). Measuring impairment in a legal context: Practical considerations in the evaluation of psychiatric and learning disabilities. In S. Goldstein & J. A. Naglieri (Eds.), *Assessing impairment: From theory to practice* (pp. 93-103). New York, NY: Springer.
- Lovett, M. W., Frijters, J. C., Wolf, M., Steinbach, K. A., Sevcik, R. A., & Morris, R. D. (2017). Early intervention for children at risk for reading disabilities: The impact of grade at intervention and individual differences on intervention outcomes. *Journal of Educational Psychology, 109*(7), 889-914.
- Lovett, M. W., Lacerenza, L., & Borden, S. L. (2000). Putting struggling readers on the PHAST track: A program to integrate phonological and strategy-based remedial reading instruction and maximize outcomes. *Journal of Learning Disabilities, 33*, 458-476.
- Lyon, G. R., Fletcher, J. M., Shaywitz, S. E., Shaywitz, B. A., Torgesen, J. K., Wood, F. B., ... Olson, R. (2001). Rethinking learning disabilities. In C. E. Finn, Jr., R. A. J. Rotherham, & C. R. Hokanson Jr. (Eds.), *Rethinking special education for a new century* (pp. 259-287). Washington, DC: Thomas B. Fordham Foundation and Progressive Policy Institute.

- Maddocks, D. L. (in press). The identification of students who are gifted and have a learning disability: A comparison of different diagnostic criteria. *Gifted Child Quarterly*.
- McCain, M., & Mustard, J. F. (1999). *Early years study: Reversing the real brain drain*. Toronto, ON: Ontario Children's Secretariat.
- Meltzer, L., Katzir, T., Miller, L., Reddy, R., & Roditi, B. (2004). Academic self-perceptions, effort, and strategy use in students with learning disabilities: Changes over time. *Learning Disabilities Research & Practice, 19*(2), 99-108. doi10.1111/j.1540-5826.2004.00093.x
- Milligan, K., Phillips, M., & Morgan, A. (2015). Tailoring social competence interventions for children with learning disabilities. *Journal of Child and Family Studies, 25*, 856-869.
- Moustafa, A. A., Tindle, R., Ansari, Z., Doyle, M. J., Hewedi, D. H., & Eissa, A. (2017). Mathematics, anxiety, and the brain. *Reviews in the Neurosciences, 28*(4), 417-429.
- Ontario Ministry of Education (2013). *Policy/program memorandum No. 156: Supporting transitions for students with special education needs*. Retrieved from <http://www.edu.gov.on.ca/extra/eng/ppm/ppm156.pdf>
- Ontario Ministry of Education (2014). *Policy/program memorandum No. 8: Identification of and program planning for students with learning disabilities*. Retrieved from <http://www.edu.gov.on.ca/extra/eng/ppm/ppm8.pdf>
- Ozernov-Palchik, O., Norton, E. S., Sideridis, G., Beach, S. D., Wolf, M., Gabrieli, J. D. E., & Gaab, N. (2017). Longitudinal stability of pre-reading skill profiles of kindergarten children: Implications for early screening and theories of reading. *Developmental Science, 20*(5), 1-18.
- Pennington, B. F., Gilger, J. W., Olson, R. K., & DeFries, J. C. (1992). The external validity of age- versus IQ-discrepancy definitions of reading disability: Lessons from a twin study. *Journal of Learning Disabilities, 25*(9), 562-573.
- Petrill, S. A. (2013). Behavioral genetics, learning abilities, and disabilities. In H. L. Swanson, K. R. Harris, & S. Graham (Eds.), *Handbook of learning disabilities* (2nd ed., pp. 293-306). New York, NY: Guilford.
- Pliszka, S. R. (2015) Comorbid Psychiatric Disorders in Children with ADHD. In R. A. Barkley (Ed.), *Attention-deficit hyperactivity disorder: A handbook for diagnosis and treatment* (4th ed., pp. 140-169). New York, NY: Guilford Press.
- Regulated Health Professions Act, Statutes of Ontario. (1991, c. 18). Retrieved from the Ontario e-Laws website: <https://www.ontario.ca/laws/statute/91r18>.
- Sattler, J. (2008). *Assessment of Children: Cognitive Foundations* (5<sup>th</sup> ed.). San Diego: Jerome Sattler.
- Share, D. L., McGee, R., & Silva, P. A. (1989). IQ and reading progress: A test of the capacity notion of IQ. *Journal of the American Academy of Child & Adolescent Psychiatry, 28*(1), 97-100.
- Sparks, R. L., & Lovett, B. J. (2009). Objective criteria for classification of postsecondary students as learning disabled: Effects on prevalence rates and group characteristics. *Journal of Learning Disabilities, 42*(3), 230-239.
- Stanovich, K. E. (1986). Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly, 21*, 360-407.

- Stanovich, K. E. (1991). Conceptual and empirical problems with discrepancy definitions of reading disability. *Learning Disability Quarterly*, 14, 269-280.
- Statistics Canada (2011). The educational attainment of aboriginal peoples in Canada. Retrieved from [http://www12.statcan.gc.ca/nhs-enm/2011/as-sa/99-012-x/99-012-x2011003\\_3-eng.pdf](http://www12.statcan.gc.ca/nhs-enm/2011/as-sa/99-012-x/99-012-x2011003_3-eng.pdf)
- Statistics Canada (2016). Immigration and ethnocultural diversity highlight tables. Retrieved from <http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/hltfst/imm/Table.cfm?Lang=E&T=13&Geo=35&SP=2>
- Stuebing, K. K., Fletcher, J. M., Branum-Martin, L., & Francis, D. J. (2012). Evaluation of the technical adequacy of three methods for identifying specific learning disabilities based on cognitive discrepancies. *School Psychology Review*, 41(1), 3-22.
- Stuebing, K. K., Fletcher, J. M., LeDoux, J. M., Lyon, G. R., Shaywitz, S. E., & Shaywitz, B. A. (2002). Validity of IQ discrepancy classifications of reading disabilities: A meta-analysis. *American Educational Research Journal*, 39, 469–518.
- Swanson, H. L. & Zheng, X. (2013). Memory difficulties in children and adults with learning disabilities. In H. L. Swanson, K. Harris, & S. Graham. *Handbook of learning disabilities* (2<sup>nd</sup> ed., pp 214-238). New York, NY: Guilford.
- Tanaka, H., Black, J. M., Hulme, C., Stanley, L. M., Kesler, S. R., Whitfield-Gabrieli, S., ... Hoeft, F. (2011). The brain basis of the phonological deficit in dyslexia is independent of IQ. *Psychological Science*, 22(11), 1442-1451.
- Tannock, R. (2013). Rethinking ADHD and LD in DSM-5: Proposed changes in diagnostic criteria. *Journal of Learning Disabilities*, 46(1), 5-25.
- Vaughn, S., & Fuchs, L. S. (2003). Redefining learning disabilities as inadequate response to instruction: The promise and potential problems. *Learning Disabilities Research & Practice*, 18, 137–146.
- Vellutino, F. R., Scanlon, D. M., & Lyon, G. R. (2000). Differentiating between difficult-to-remediate and readily remediated poor readers: More evidence against the IQ–achievement discrepancy definition of reading disability. *Journal of Learning Disabilities*, 33(3), 223-238.
- Wadsworth, S. J., Olson, R. K., Pennington, B. F., & DeFries, J. C. (2000). Differential genetic etiology of reading disability as a function of IQ. *Journal of Learning Disabilities*, 33(2), 192-199.
- Wiener, J., & Costaris, L. (2012). Teaching psychological report writing: Content and process. *Canadian Journal of School Psychology*, 29(2), 119-135.
- Wiener, J., & Timmermanis, V. (2012). Social relationships: The 4<sup>th</sup> R. In B. Wong & D. L. Butler (Eds.), *Learning about learning disabilities* (4<sup>th</sup> ed., pp. 92-129). San Diego, CA: Elsevier.
- Willcutt, E. G., Pennington, B. F., Duncan, L., Smith, S. D., Keenan, J. M., Wadsworth, S., ... Olson, R. K. (2010). Understanding the complex etiologies of developmental disorders: Behavioral and molecular genetic approaches. *Journal of Developmental and Behavioral Pediatrics*, 31(7), 533-544.