



## **Issues related to identification of children with specific learning disorders(SLDs): insights into DSM-5**

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## Abstract

*This article examines issues related to identification of children with specific learning disorders (SLDs). The focus is on the Diagnostic Criteria in DSM-5, diagnostic features, associated features supporting diagnosis, and Prevalence are discussed.*

**Keywords.** specific learning disorders (SLDs), DSM-5 diagnostic criteria, associated features supporting diagnosis, Prevalence

## Introduction

The term 'Learning Disabilities' was first given by a psychologist, Samuel Kirk in 1963, followed by which number of researchers had done research on different aspects of Specific Learning Disabilities and till now research is going on, but the prominent causes behind it are not yet identified (Amandeep and Jubilee, 2017). Diagnostic and Statistical Manual, American Psychiatric Association, (DSM-5 2013) has viewed Specific Learning Disorder as difficulties in acquiring and applying the academic skills and at least for the 6 months presence of at least one symptom as: Slow, incorrect and effortful word reading, complexity in understanding the meaning of content, problems in written expression, complexities with numbers and calculations and spelling difficulties.

As the APA stated, SLD "occurs across languages, cultures, races, and socioeconomic conditions but may vary in its manifestation according to the nature of the spoken and written symbol systems and cultural and educational practices" (p. 72).

There was a long debate since Bateman (1965) first proposed that

*"Children who have learning disorders are those who manifest an educationally significant discrepancy between their estimated intellectual potential and actual level of performance related to basic disorders in the learning process, which may or may not be accompanied by demonstrable central nervous system dysfunction and which are not secondary to generalized mental retardation, educational or cultural deprivation, severe emotional disturbance, or sensory loss". (p. 220).*

Diagnosis of SLD was traditionally determined using a discrepancy model where a child's performance on standardized achievement tests is substantially below (more than 2 standard deviations (SDs) between achievement and IQ or 1 to 2 SDs if comorbid factors are present) expectations based on age, schooling, and intelligence level (APA, 2000)

IQ-Achievement discrepancy is a procedure used for identifying a severe discrepancy between achievement and intellectual ability in one or more of the following areas: oral expression, listening comprehension, written expression, basic reading skills, reading comprehension, mathematics calculation, and mathematics reasoning (Vaughn & Fuchs, 2003).

However, there have been problematic psychometric issues with this model which can be attributed to the small measurement error of IQ and achievement tests, and also other factors that make single assessment of IQ and achievement unreliable for identifying SLD.

International diagnostic criteria for learning disabilities were modified. There are several fundamental changes in the newly proposed diagnostic criteria: the elimination of "Discrepancy Criterion", the reference to "Response to intervention approach" and a new view by which learning disorders are seen as a group of disorders, within the Neurodevelopmental disorders group (APA, 2013).

Diagnosis of SLD is based on the information gathered from family history, developmental history, medical history, educational reports, formal and informal assessments, previous and current manifestation and impact of SLD.

### *Diagnostic Criteria in DSM-5*

DSM-5 identified the following diagnostic criteria

A. Difficulties learning and using academic skills, as indicated by the presence of at least one of the following symptoms that have persisted for at least 6 months, despite the provision of interventions that target those difficulties:

1. Inaccurate or slow and effortful word reading (e.g., reads single words aloud incorrectly or slowly and hesitantly, frequently guesses words, has difficulty sounding out words).

2. Difficulty understanding the meaning of what is read (e.g., may read text accurately but not understand the sequence, relationships, inferences, or deeper meanings of what is read).

3. Difficulties with spelling (e.g., may add, omit, or substitute vowels or consonants). 4. Difficulties with written expression (e.g., makes multiple grammatical or punctuation errors within sentences; employs poor paragraph organization; written expression of ideas lacks clarity).

5. Difficulties mastering number sense, number facts, or calculation (e.g., has poor understanding of numbers, their magnitude, and relationships; counts on fingers to add single-digit numbers instead of recalling the math fact as peers do; gets lost in the midst of arithmetic computation and may switch procedures).

6. Difficulties with mathematical reasoning (e.g., has severe difficulty applying mathematical concepts, facts, or procedures to solve quantitative problems).

B. The affected academic skills are substantially and quantifiably below those expected for the individual's chronological age, and cause significant interference with academic or occupational performance, or with activities of daily living, as confirmed by individually administered standardized achievement measures and comprehensive clinical assessment. For individuals age 17 years and older, a documented history of impairing learning difficulties may be substituted for the standardized assessment.

C. The learning difficulties begin during school-age years but may not become fully manifest until the demands for those affected academic skills exceed the individual's limited capacities (e.g., as in timed tests, reading or writing lengthy complex reports for a tight deadline, excessively heavy academic loads).

D. The 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.

The four criteria are to be assessed which includes individual history (developmental, medical, family & educational), school reports, psychological and educational assessments.

Concerning Criterion A, in order for the student to be identified with specific learning disorder, he/she should have persistent difficulties learning keystone academic skills with onset during the years of formal schooling (i.e., the developmental period). Key academic skills include reading of single words accurately and fluently, reading comprehension, written expression and spelling, arithmetic calculation, and mathematical reasoning (solving mathematical problems).

Difficulties mastering these key academic skills may also impede learning in other academic subjects (e.g., history, science, social studies), but those problems are attributable to difficulties learning the underlying academic skills.(pp.66-67).

In children and adolescents, *persistence* is defined as restricted progress in learning (i.e., no evidence that the individual is catching up with classmates) for at least 6 months despite the provision of extra help at home or school. For example, difficulties learning to read single words that do not fully or rapidly remit with the provision of instruction in phonological skills or word identification strategies may indicate a specific learning disorder. Evidence of persistent learning difficulties may be derived from cumulative school reports, portfolios of the child's evaluated work, curriculum-based measures, or clinical interview. In adults, persistent difficulty refers to ongoing difficulties in literacy or numeracy skills that manifest during childhood or adolescence, as indicated by cumulative evidence from school reports, evaluated portfolios of work, or previous assessments(APA,2013).

As to Criteria B, the individual's performance of the affected academic skills is well below average for age or average performance that is sustainable by extraordinary high levels of support. In children, the low academic skills cause significant interference in school performance (reported by teachers and teacher's grades or ratings). In adults, there is avoidance of activities that require the academic skills. On the basis of clinical judgment a more lenient threshold may be used when SLD is supported by converging evidence from clinical assessment, academic history, school reports or test scores, as standardized tests are not available in all languages the diagnosis may then be based in part on clinical judgment of scores on available test measures. (DSM 5, 2013).

The DSM- 5 defines academic skill deficits as "Low achievement scores on one or more standardized tests or subtests within an academic domain (i.e., at least 1.5 standard deviations [SD] below the population mean for age, which translates to a standard score of 78 or less, which is below the 7th percentile) are needed for the greatest diagnostic certainty. However, precise scores will vary according to the particular standardized tests that are used(P.69). Furthermore, the DSM states that "On the basis of clinical judgment, a more lenient threshold may be used (e.g., 1.0-2.5 SD below the population mean for age), when learning difficulties are supported by converging evidence from clinical assessment, academic history, school reports, or test scores(P.69).

A third core feature is that the learning difficulties are readily apparent in the early school years in most individuals (Criterion C). However, in others, the learning difficulties may not manifest fully until later school years, by which time learning demands have increased and exceed the individual's limited capacities(P.70).

The DSM-5 emphasizes that learning difficulties are considered "specific," for four reasons. First, they are not attributable to intellectual disabilities (intellectual disability [intellectual developmental disorder]); global developmental delay; hearing or vision disorders, or neurological or motor disorders) (Criterion D). Specific learning disorder affects learning in individuals who otherwise demonstrate normal levels of intellectual functioning (generally estimated by an IQ score of greater than about 70 [ $\pm 5$  points allowing for measurement error]). The phrase "unexpected academic underachievement" is often cited as the defining characteristic of specific learning disorder in that the specific learning disabilities are not part of a more general learning difficulty as manifested in intellectual disability or global developmental delay. Specific learning disorder may also occur in individuals identified as intellectually "gifted." These individuals may be able to sustain apparently adequate academic functioning by using compensatory strategies, extraordinarily high effort, or support, until the learning demands or assessment procedures (e.g., timed tests) pose barriers to their demonstrating their learning or

accomplishing required tasks. Second, the learning difficulty cannot be attributed to more general external factors, such as economic or environmental disadvantage, chronic absenteeism, or lack of education as typically provided in the individual's community context. Third, the learning difficulty cannot be attributed to a neurological (e.g., pediatric stroke) or motor disorders or to vision or hearing disorders, which are often associated with problems

learning academic skills but are distinguishable by presence of neurological signs. Finally, the learning difficulty may be restricted to one academic skill or domain (e.g., reading single words, retrieving or calculating number facts). (APA, 2013, PP. 69-70).

The DSM-5 has cautiously omitted any reference to an IQ/ Achievement discrepancy, and while it does emphasize the need to conduct a comprehensive assessment, it also states that although cognitive processing deficits are often seen

in individuals with SLD, this is not unique to SLD (e.g., ADHD also evidence processing problems) and suggests that “assessment of cognitive processing deficits is not required for diagnostic assessment” (p. 70).

Specific learning disorder is frequently but not invariably preceded, in preschool years, by delays in attention, language, or motor skills that may persist and co-occur with specific learning disorder. Many features associated with SLDs are also found in other neurodevelopmental disorders eg. ADHD, ASD, communication disorders, developmental coordination disorder. There are no known biological markers of SLD neither cognitive testing, neuro imaging nor genetic testing are useful for diagnosis at this time.

The prevalence of specific learning disorder across the academic domains of reading, writing, and mathematics is 5%-15% among school-age children across different languages and cultures. Prevalence in adults is unknown but appears to be approximately 4%. (APA,2013, P.70)

### *Conclusion*

Although largely unchanged, the definition of SLD is noted as a disorder with a neurobiological basis, which includes not only genetic factors but also epigenetic and environmental factors interacting and affecting an individual's ability to process verbal or nonverbal information.

The term specific learning disorder was up-dated (from learning disorder ) to emphasize multiple sub-skill impairments individuals may demonstrate in various academic domains (e.g., reading, mathematics, written language) that would fall under this diagnosis. For example, children with RD may be diagnosed as having a specific learning disorder with impairment in reading , as a specifier, which can be further delineated into three areas: word reading accuracy (which may include decoding), reading fluency, and reading comprehension. As for specific impairments in mathematics and written expression, various sub-skills were also delineated under these academic domains (e.g., number sense, spelling, calculation, etc.), which overall provide substantial information on particular skill deficits for remediation.

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