

## Case Report

### Child with Learning Disability and his Reading and Writing Skills

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#### ABSTRACT

*Learning disabilities (LDs) are neurodevelopmental disorders that significantly impair the acquisition and use of academic skills such as reading, writing, and arithmetic, despite average intelligence and adequate educational exposure. This case report presents the psychological evaluation and therapeutic intervention of a 10-year-old male child, Master R.B., exhibiting persistent academic difficulties, particularly in reading, writing, and spelling, consistent with dyslexia and dysgraphia. Comprehensive assessment using the Malin's Intelligence Scale for Indian Children (MISIC) and the NIMHANS Battery for Specific Learning Disability revealed average intellectual functioning (IQ 97) with specific deficits in phonological processing, written expression, reading fluency, and spelling accuracy, all falling two to three grade levels below his current academic placement. The report underscores the importance of early identification, individualized educational accommodations as per CBSE guidelines, and multidisciplinary interventions including structured literacy programs, cognitive training, and psychosocial support. Emphasis is also placed on culturally adaptive and strength-based approaches to foster resilience and holistic development in children with LDs.*

**KEYWORDS:** Specific learning disability, Intellectual functioning, Academic skills, Reading, Writing

#### INTRODUCTION

Learning disabilities (LD) constitute a varied group of neurodevelopmental disorders that impede the acquisition and use of listening skills, speaking abilities, reading, writing, reasoning, mathematical abilities, or social skills,

despite adequate intelligence, conventional instruction, and socio-cultural opportunities<sup>1</sup>. Rooted in neurobiological origins, LDs manifest through deficits in the brain's capacity to process and interpret information efficiently. The construct of LD first gained prominence in

the 1960s when Samuel Kirk coined the term, shifting attention from generalized intellectual deficits to specific processing disorders affecting academic performance<sup>2</sup>.

Globally, the prevalence of LD is estimated to range between 5% and 15% among school-aged children, varying based on diagnostic criteria and cultural contexts<sup>1,3</sup>. Dyslexia (reading disorder), dyscalculia (mathematics disorder), and dysgraphia (writing disorder) represent the most studied subtypes. Despite these categorical classifications, LDs rarely present in isolation. They are often comorbid with Attention Deficit Hyperactivity Disorder (ADHD), anxiety, depression, and other psychological conditions, complicating diagnosis and intervention<sup>4</sup>.

Neuropsychological research has identified deficits in phonological processing, working memory, processing speed, and executive functioning as core features of LDs<sup>5</sup>. Functional MRI studies reveal atypical activation patterns in the left temporoparietal and occipitotemporal regions during reading tasks in individuals with dyslexia, suggesting biological underpinnings<sup>6</sup>. However, despite these advances, LDs continue to be misunderstood, stigmatized, and under-identified, especially in low- and middle-income countries where limited resources, lack of awareness, and cultural perceptions impede early identification and intervention<sup>7</sup>.

The impact of learning disabilities extends far beyond academic failure. Repeated experiences of failure, stigmatization, and negative feedback contribute to low self-esteem, poor academic motivation, social withdrawal, and increased risk for mental health problems<sup>8</sup>. Adolescents and adults with LD often face significant challenges in employability, interpersonal relationships, and daily functioning, underlining the need for comprehensive, individualized, and multidimensional therapeutic interventions.

The International Classification of Diseases, 11<sup>th</sup> revised edition (ICD-11), developed by the World Health Organization<sup>9</sup>, classifies learning disabilities under the term "Developmental Learning Disorders" within the 6A03 category. According to ICD-11, these disorders are neurodevelopmental in nature and manifest as significant and tenacious difficulties in learning foundational academic skills, including reading, writing, and arithmetic, that are not consistent with the individual's chronological age, intellectual abilities, or educational exposure.

The ICD-11 defines Developmental Learning Disorder (6A03) as a condition characterized by:

1. A persistent pattern of problems in learning academic skills related to reading, writing, or mathematics abilities, which are not attributable to intellectual disabilities, uncorrected vision or hearing issues, other mental or neurological disorders, psychosocial adversity, or insufficient education.

2. The pretentious skills are substantially below what is expected for the individual's age and significantly interfere with academic, occupational, and daily life functioning.

3. The onset occurs during the developmental period when these skills are typically acquired.

ICD-11 Subtypes of Developmental Learning Disorder:

- a) 6A03.0 Developmental Learning Disorder with Impairments in Reading (Dyslexia)- Includes difficulties in reading word accuracy, reading rate or fluency, and reading comprehension.
- b) 6A03.1 Developmental Learning Disorder with Impairment in Written Expression (Dysgraphia) - Encompasses difficulties with spelling accuracy, grammar, punctuation, and organization of written expression.
- c) 6A03.2 Developmental Learning Disorder with Impairment in Mathematics (Dyscalculia)- Refers to the difficulties with number sense, memorization of arithmetic facts, calculation, and mathematical reasoning.
- d) 6A03.3 Developmental Learning Disorder with Mixed Impairments- Used when impairments exist across multiple academic domains.

The diagnosis should not be made if:

- The learning difficulties are fully explained by intellectual disability (Global Developmental Delay).
- There is a lack of educational opportunity.
- The difficulties are caused by sensory deficits, neurological disorders, or psychosocial factors.

## CASE HISTORY

Master RB, 10 years old male, studying in VI Standard in a CBSE Board School, hailing from a Hindu, upper socioeconomic strata, living in a nuclear family, accompanied by father and mother presented with complaints of poor academic performance, had been facing difficulties in Hindi and English spellings from year 2020 and also had difficulty in writing the thoughts and answers in the class. The assessment was done to re-evaluate his intelligence and scholastic abilities.

## BEHAVIOURAL OBSERVATIONS

Rapport was easily established with him; he had maintained adequate eye contact his appearance was kempt and tidy, he was cooperative with the examiner. He was oriented to time, place and person. His voice was audible; speech was coherent.

His attention was sustained. He was very anxious in the beginning and also gave impulsive responses at various questions during the assessment.

### PSYCHOLOGICALASSESSMENT

1. The Malin's Intelligence Scale for Indian Children (MISIC)
2. NIMHANS Battery for Specific learning Disability (SLD).

#### Malin's Intelligence Scale for Indian Children (MISIC)

The Malin's Intelligence Scale for Indian Children was administered to assess the intellectual quotient of a child. The test consists of 12 subtests divided into Verbal and Performance groups as follows:

#### NIMHANS Assessment of Specific Learning Disability

The following were the subtests:

- a) **Attention Test** – His attention was aroused but could not be sustained for longer period of time

#### b) Language Test

- **Reading** – He can identify the alphabets and has difficulty with the sound of the letters. He faces difficulty to analyse the kind of difficulties present while reading a word by using substitution, omission or addition of consonants or vowels, phonetic inaccuracies, reversal or inversion of letters or parts of words, knowledge of patterns of sound made by a group of letters and has familiarity with a homophone. He faces no difficulty in reading the meaning from a sentence or passage.

He is fluent in reading, reads phrases by phrase manner without appropriate pause. He often ignores punctuation while reading. He lacks understanding in written directions in the text. His reading rate is very slow and lacks prosody. His reading areas are two grades below the current level.

**His current reading level is at grade level 3 indicating of disability in the reading areas.**

- **Writing** – He has proper pencil grip. He lacks the ability to retrieve alphabets representing sounds. He can formulate and legibility letters or numbers. He does not use the basic punctuations and lacks the knowledge of punctuations. He lacks the ability to present ideas in an understandable sequence. He lacks an ability to plan and organize a written text for a particular audience or purpose. He lacks the organization of writing and the mechanics of writing a paragraph or essay. Speed of writing is not appropriate to his age.

**His current writing level is at grade level 2 indicative of disability in the writing areas.**

- **Spellings** – Use of vocabulary is not appropriate to his grade level and often omits or substitutes a letter in the word.

**His current level is grade level 2 indicative of disability in this area.**

#### Verbal Scale

| S. No.          | Test                | Test Quotient (TQs) |
|-----------------|---------------------|---------------------|
| 1               | General Information | 89                  |
| 2               | Comprehension       | 116                 |
| 3               | Arithmetic          | 92                  |
| 4               | Similarities        | 97                  |
| 5               | Vocabulary          | 98                  |
| Verbal Quotient |                     | 98                  |

#### Performance Scale

| S. No.               | Test                    | Test Quotient (TQs) |
|----------------------|-------------------------|---------------------|
| 1                    | Picture Completion Test | 95                  |
| 2                    | Block Design            | 107                 |
| 3                    | Object Assembly         | 89                  |
| 4                    | Coding                  | 97                  |
| 5                    | Mazes                   | 91                  |
| Performance Quotient |                         | 96                  |

**Total IQ – 97, indicating Average Intellectual Functioning**

- **Comprehension** – He has basic comprehension of the text and often responds to the situations in an appropriate manner, but does not understand the latent meaning of questions, hence facing difficulty in organizing and framing the concepts appropriately.

**His current level is grade level 5 indicative of difficulty in the area.**

- **Expressive Language** – He was asked to write a small essay. He had written on the topic of my best vacation. The content of the write-up was not at par with his grade level. It lacked clarity and did not communicate any meaning. The sentence formation was inadequate with no use of punctuation. Capital letters were missing or not used appropriately. There were spelling errors. He has significant difficulty in expressing elaborately in written form.

**His current level is grade level 4 indicative of difficulty in the area.**

- c) **Arithmetic** – His ability to recall the basic math facts, procedure rules or formulas is inadequate. He does not have difficulty with addition or subtraction of two digits but with two-digit multiplication faces difficulty. He lacks ability to maintain precision during mathematical work. He also lacks the ability to sequence and carry out successfully multiple steps. He has difficulty in understanding the final goal of the math problem. His ability to explain and communicate about math including asking and answering questions is poor. He has ability to differentiate between the concepts of multiplication and division, but he has no concept of fractions.

**His current level is grade level 5 indicative of difficulty in the area.**

- d) **Visuomotor Skills** – His visuospatial and visuomotor skills are adequately developed according to his age, as his gross and fine motor skills like balance, eye-hand coordination, pencil grip and sense of rhythm is adequate.

- e) **Memory** – He has no deficits in his auditory and visual memory. He has no difficulty in recalling visual and auditory clues.

## CONCLUSION

It was concluded that Master R.B. has an average intellectual functioning. His attention was aroused but could not be sustained for a longer duration. He faces difficulty to analyse the kind of difficulties present while reading a word by using substitution, omission or addition of consonants or vowels, phonetic inaccuracies, reversal or inversion of letters or parts of words, and knowledge of patterns of sound made by a group of letters and has familiarity with homophones. He faces difficulty in reading the meaning of a sentence or passage. He lacks fluency in reading and reads phrases by phrase manner without appropriate pause. His reading rate is very slow and lacks prosody. His reading, writing, and spelling areas are three grades below the current level. Hence concluding that he has the specific disorder of reading and writing skills (Dyslexia & Dysgraphia).

## THERAPEUTIC RECOMMENDATIONS

The following psychological management was recommended:

1. As per the guidelines provided by CBSE, the following accommodations can be provided to him in school on account of his disability in writing.
  - Use of a written scribe or amanuensis should be permitted.
  - Exemption from third language
  - Additional time for each paper, as follows:
    - I. For paper of 3 hours duration 60 minutes
    - ii. For paper of 2 ½ hours duration 50 minutes
    - iii. For paper of 2 hours duration 40 minutes
    - iv. For paper of 1 ½ hours duration 30 minutes

According to CBSE there is flexibility in choosing subjects with one compulsory language

### 2. Remedial and Cognitive Interventions

Targeted remedial instruction remains central to LD intervention. Structured literacy programs such as the Orton-Gillingham approach and multisensory learning strategies have demonstrated efficacy in enhancing phonological processing and reading skills in children with dyslexia<sup>10</sup>. Computer-assisted programs like “Fast ForWord” utilize principles of neuroplasticity to improve auditory processing and language skills<sup>11</sup>.

Cognitive training programs focusing on working memory, attention, and executive functions have also shown promise in addressing broader cognitive deficits associated with LD. For instance, the “Cogmed Working Memory Training” has been used to enhance

working memory capacity, indirectly supporting academic performance<sup>12</sup>. However, the transfer effects of such cognitive training into academic outcomes remain a matter of scholarly debate.

### 3. Cognitive Behavioural Therapy (CBT) is critical in managing the emotional and

behavioural consequences of LD, such as anxiety, low self-esteem, and depressive symptoms<sup>13</sup>. CBT interventions help in reframing negative self-perceptions, improving emotional regulation, and enhancing coping mechanisms. Social skills training is also essential, especially for children with non-verbal learning disabilities who struggle with pragmatic language and social cues.

### 4. Family and School-Based Interventions

Parental involvement and teacher training are vital in creating a supportive ecosystem for the child. Psychoeducation for families reduces misconceptions and blame, fostering better emotional support at home<sup>14</sup>. School-based accommodations—like extended time on tests, alternative assessment methods, and the use of assistive technologies—help in levelling the playing field for students with LD<sup>14</sup>.

The Individualized Education Plan (IEP) framework, widely practiced in Western contexts, can serve as a model for personalized educational goals and interventions. In India and similar contexts, the implementation of the Rights of Persons with Disabilities (RPwD) Act, 2016 mandates reasonable accommodations for children with specific learning disabilities, necessitating systemic changes in schools<sup>15</sup>.

### 5. Integration of Positive Psychology and Strength-Based Approaches

Traditional deficit-focused models often overshadow the strengths and talents of individuals with LD. Emerging therapeutic frameworks incorporate positive psychology principles, emphasizing resilience, self-efficacy, and strength-building. Programs that integrate mindfulness, growth mindset interventions, and self-advocacy training have shown potential in improving psychological well-being and academic persistence<sup>16</sup>.

### 6. Emerging Therapies and Technological Innovations

The rapid advancement of technology has paved the way for innovative therapies such as Virtual Reality (VR)-based interventions, biofeedback, and neurofeedback, offering new dimensions in the

remediation of LDs<sup>17</sup>. Additionally, Artificial Intelligence (AI)-powered adaptive learning platforms are being explored for their potential to provide real-time personalized learning experiences tailored to individual cognitive profiles.

### 7. Cultural and Contextual Adaptation of Therapies

A crucial but often neglected aspect of LD intervention is cultural sensitivity. Therapeutic models rooted in Western paradigms may not be directly applicable in diverse socio-cultural contexts. Indigenous methods, mindfulness rooted in Indian traditions, and holistic approaches integrating yoga and meditation can complement conventional therapies, fostering greater acceptance and sustainability<sup>7</sup>.

**CONFLICT OF INTEREST:** None

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