

## A Systematic Review on Specific Learning Disability among School Students

**M. Sivalingam and R. Venkateswaran**

Department of Education, Periyar University, Salem

The term specific learning disorders (SLD) refers to a group of ailments characterized by persistent difficulties in one of the three educational skill domains reading, writing, and math that are crucial to the learning process. There are very few systematic reviews that are only concerned with the incidence of SLD in India. In order to determine the prevalence of SLD in Indian youngsters, this study was conducted. This systematic review examines learning disabilities, including dyslexia, ADHD, and other learning disabilities, as well as how they are incorporated into society. Articles from the field of education will be reviewed for this study. The study aims to draw attention to the learning challenges faced by school-age youngsters. The primary findings indicate that a range of research methodologies, including survey and experimental methods, were employed in a variety of SLD studies involving different populations.

**Keywords:** Dyslexia, ADHD disorder, reading, writing, and arithmetic disabilities

Learning impairments are unfairly dismissed as deviations on typical development and are only classified as disabilities when they substantially impair an individual's capacity to learn and function in daily life. The term learning disability describes performance gaps, delays, and deviations in the fundamental academic subjects such as math, reading, writing, spelling, and speech that cannot be linked to emotional disorders, mental retardation, or sensory deficiencies. It is an umbrella term used in education that encompasses a wide range of situations. Dyslexia (a reading impairment), dysgraphia (a writing disability), and dyscalculia (a calculation-related arithmetic disorder) are the three main categories of learning difficulties.

Learning disabilities, also known as specific learning disorders (SLD), are a type of neurodevelopmental disease (NDD) that are characterised by persistent difficulties with one of the three fundamental skills required for learning: reading, writing, and

math. These challenges dyslexia, dysgraphia, dyscalculia, dyspraxia, and developmental aphasia—can manifest individually or in a variety of combinations that range in severity from mild to severe.<sup>3</sup> In terms of specific learning disabilities, dyslexia is the most prevalent, making up to 80% of all cases.<sup>4</sup> Despite clear instructions, dysgraphia is typically characterized by deformed writing.

The inability to comprehend or learn mathematical computations is a key feature of dyscalculia. Children with SLD are more likely to experience hyperactivity and other comorbidities, and about 30% of them struggle with emotional and behavioral issues. Even though there is no known cure for SLD, there are underlying condition interventions that can help children with the disorder adapt, achieve academic success, and lead happy, productive lives. According to the Diagnostic and Statistical Manual of Mental problems (DSM-5), between 5% and 15% of people globally are estimated to be

affected by learning problems, which include difficulties with writing, reading, and math. In the USA, 9.7% of children had a learning handicap at some point in their lives.

The prevalence of SLD in India is said to range from 3% to 10%. The Rights of Persons with Disability Act of 2016 lists SLD as one of the disabilities in India, yet the screening and diagnosis of SLD remain challenging. A variety of tools, each with advantages and disadvantages, are employed for the evaluation. There are a few widely used instruments for assessment, such as the National Institute of Mental Health and Neurosciences (NIMHANS) index for SLD10 and the AIIMS SLD: full diagnostic battery, although there are few defined criteria for the subtypes of SLD.

Teachers cannot use a screening instrument to diagnose SLD, since the academic curricula of different education boards (state and central) vary. In contrast to India, where 42% of children attend Hindi-medium schools, some instruments, such as the NIMHANS index for SLD, are only available in English-medium schools. Despite the fact that several tools are created in regional languages like Tamil, Kannada, and Marathi, these tools are not accepted nationally for the purpose of certifying children with special needs.

To understand the scope and depth of the issue as well as the variations in the diagnostic standards applied throughout the research, a review is essential. The evidence about the occurrence of SLDs is lacking, and most of the time, they go unnoticed. It is imperative that children with SLD receive early diagnosis and support, thus understanding the diagnostic techniques employed is equally crucial. Systematic reviews that are solely concerned with the prevalence of SLD in India are scarce. When arranging for diagnostic and intervention

services, it is helpful to estimate the prevalence of SLD in India.

A school-based policy for the early identification, referral, and management of children with SLDs will be developed with the aid of information regarding the estimated total number of SLDs in the nation. Therefore, the purpose of this study was to conduct a systematic review in order to determine the prevalence of SLD among children in schools and to examine the diagnostic instruments for SLD.

### **Objectives**

A comprehensive literature review process was used to address the goal. Analyzing more studies on particular learning disorders and challenges is the aim of the systematic review. Its goal is to identify school-age children who have particular learning challenges. In order to do this, the research topic to identify various Specific Learning Difficulties among school students? is addressed.

### **Method**

A thorough systematic search approach was ensured by doing a literature search to determine the key terms, inclusion and exclusion criteria, and to create a data collection form prior to beginning the systematic review. In this context, scholars have employed the statement preferred reporting items for systematic reviews, which are intended to support systematic reviewers in providing transparent reports on the purpose, methods, and conclusions of their reviews. The guideline has had to be updated in the last ten years due to advancements in systematic review, methodology, and nomenclature. These developments have led to new approaches for finding, picking, analyzing, and synthesizing data.

### **Psychological Intervention for SLD**

An organized endeavor by one or more individuals to assist someone in seeking

professional assistance for a crisis or traumatic incident is known as an intervention. It is an act of sharing the victim's experience in order to intervene. Professional care is given to help with medical support, social or psychological alleviation, and situational improvement. By successfully interfering in undesirable behavior, intervention strategies can encourage desirable behavior and aid in the development of positive behavior. With parental input, school psychologists, counselors, and teachers typically create them. For parents and needy children, clinical psychologists can offer specialized assistance with behavioral interventions that will help them better manage the components of their interventions that work.

Counseling, systemic and family therapy, psychodynamic/psychoanalytic psychotherapy, and cognitive behavioral therapy (CBT) are a few examples. Psychological treatments have typically been provided at the behavior management level in conjunction with skill instruction and pharmacological techniques, particularly the use of psychotropic drugs (Waitman and Conboy-Hill, 1992; Arthur, 2003; Willner, 2005). Recently, authorities in the United Kingdom have become more aware of the mental health requirements of those with intellectual impairments, which has resulted in the realization that development is necessary.

Willner (2005) reviewed the research on the efficacy of cognitive behavioral, psychodynamic, and cognitive approaches for individuals with intellectual disabilities and came to the conclusion that, for individuals with mild disabilities and for a portion of those with more severe and complex presentations, all approaches can be helpful. It was suggested that more study in this field, including experimental designs and research to pinpoint the therapies' active ingredients, is required.

## **Procedure**

A survey of scientific literature was carried out between 2023 and 2018, gathering recent works that explicitly dealt with learning challenges, ADHD, dyslexia, virtual reality, and augmented reality that were published during the last six years. Because of their scientific rigor, the multidisciplinary databases Web of Science and Scopus are the most widely utilized in the social sciences, and that is why they were chosen for the bibliographic search procedure. On the other side, Boolean operators (AND, OR, NOT) have been utilized to further refine the search and describe the relationships and combinations of descriptors. Learning problems OR learning disabilities AND learning difficulties AND ADHD OR dyslexia AND augmented reality OR dyslexia AND dyscalculia OR dysgraphia NOT Physical disability are the descriptors (keywords) and Boolean operators utilized in the search.

Following the descriptor identification process, inclusion and exclusion criteria were developed to make the database search clearer and to discover scientific journal articles that were more noteworthy and helpful in connection to the topic under consideration. The inclusion and exclusion criteria established for the selection of articles were as follows:

### **Inclusion criteria:**

- Articles released from 2023 to 2018.
- Publications available in Tamil, English, and additional languages.
- Articles that look at how students with certain learning challenges might be used.
- Only papers that have been published in scholarly publications.

### **Exclusion criteria:**

- Articles that aren't educational.

- Articles lacking enough information for a meta-analysis.

### Population

We discovered variety in the study population among the many research publications we chose. The demographic clearly shows that children and youth make up the majority (n = 22). The majority of the research studies included in this systematic review were released in 2021. This study found that studies on learning disabilities were carried out primarily with elementary school children, secondary school students, teachers, college students, pre-school

teachers, students studying mathematical languages, and high school students in particular.

### Results

A method of meaningful data extraction has been carried out in order to analyze the data from the chosen research articles: Author(s), publication year, study kind, sample, and target population. Regarding the edits, they are displayed as follows: Author(s), publication year(s), intended audience, and keywords from the article's abstract.

Table 1. shows the results of systematic review studies

Authors and Year	Population	Types of Research	SLD Studied
Anita Gautam (2023)	school children	survey	SLD-General
McKenzie, et al (2023)	UK primary care staff	Survey	screening tools for learning disabilities
Alsarawi and Aeshah (2023)	students with learning disabilities	Survey	identifying and supporting-SLD
Wu, Ting-Fang; Chen and Cheng-Ming (2023)	university students with and without learning disabilities	Survey	Assessing
Weber, et al (2023)	young people with learning disabilities	Survey	SLD with digital tools
Konuk Er, (2023)	pre-school teachers	Survey	cognitive, affective, social and motor characteristics of learning disabilities
Bajaj, Lata, Ahmed and Ambrien (2022)	students with learning disabilities	Experimental study	social support, then negative self-perception, then behavioural issues
Peltier, et al (2022)	students with learning disabilities	Single-case research design	mathematics interventions
Bishara and Saied (2022)	students with and without learning disabilities	Survey study	cognitive load, mindfulness, and self-efficacy
Sobha and Bindu (2022)	primary school level	Experimental study	Learning disability in Malayalam and Mathematics
Sosamma Varugheses and Jacob (2021)	secondary school students with learning disabilities	Survey study	creativity achievement motivation and academic attainments

Brunow, David (2021)	students with learning disabilities	Experimental	text-to-speech and human reader on listening comprehension
Kumar, Anil and Prasad, Sanjay Kant (2020)	students with a specific learning disability	Survey study	adjustment pattern
Thoke, et al (2020)	School students	Experimental study	dyslexic learning disabilities
Mathew and Shalini (2020)	adolescents with specific learning disabilities	Survey study	coping and perceived social support-SLD
Kusuma Harinath and Lokanadha Reddy (2019)	school students	Survey study	spelling difficulties
Lee, Okin; Shin and Mikyung (2019)	school students	Online survey study	understanding of learning disabilities
Azzopardi Lane, et al (2019)	young persons with learning disability	Survey	social acceptance-SLD
Southby and Kris (2019) Kaur, Parampreet, Vinayak and Seema (2019)	adults with learning disabilities. children with learning disabilities	Survey Survey study	yet casual leisure activities-SLD general caregiver strain, family environment characterized by control, achievement orientation and moral-religious orientation-SLD
Gayathri Devi and Muhamad Mustafa (2018)	students with learning disabilities and without learning disabilities	Survey study	self-concepts about goals and values-SLD
Jebakumar, et al (2018)	school teachers on learning disabilities	Survey study	Knowledge of SLD

The following are a few of the reviewed Indian studies: Anita Gautam (2023) investigated the role of psychological intervention in school-aged children with learning disabilities. The findings showed that certain children, even with enough learning opportunities, are unable to pick up one or more age-appropriate language and/or math skills, even when they have normal cognitive ability and normal visual, auditory, or physical capacities. These children have difficulties with their learning. If learning difficulties are not treated as soon as possible, they will cause exam failure and increase the risk of stress-related problems in these children.

The efficacy of educational and psychosocial interventions in improving the self-concept and self-esteem of students with learning difficulties was evaluated by Bajaj, Lata, Ahmed, and Ambrien (2022). The study's findings shed light on the various ways that adolescents with cognitive difficulties perceive themselves, which may also be influenced by factors such as age and gender. As a result, various interventions can be designed to support these adolescents. According to Sobha and Bindu (2022), a learning package for elementary school-aged children with learning disabilities has been developed.

The findings demonstrated that the learning package for mathematics and

Malayalam was successful in reducing the mistakes made by childrens with learning disabilities in these subjects and in raising their primary school achievement in these subjects. Sosamma Varugheses and Jacob (2021) examined the academic achievements and creativity, achievement, and motivation of learning-disabled secondary school pupils. According to the study's findings, learning-disabled and typical childrens' academic attainment and achievement motivation were significantly correlated.

Anil Kumar and Sanjay Kant Prasad (2020) observed patterns of adjustment in students with particular learning disabilities. The results showed that a variety of factors affect how well childrens with particular learning difficulties adjust. It was shown that students have difficulty adjusting to both their home and school environments. Thoke, et al. (2020) investigated the creation of educational materials for people with learning difficulties. The results of this study clarified why, following the adoption of an instructional program, dyslexic students' post-test errors were reduced when compared to their pre-test scores.

Additionally, dyslexic students' pre- and post-test results differed significantly, indicating that there was a significant difference in the improvement of reading skills following the implementation of the instructional program. In 2019, Kusuma Harinath and Lokanadha Reddy conducted research on the variables associated with English language learning difficulties in schoolchildren. The findings also showed that children's combined spelling and learning impairments were less common in families with better parenting attitudes. However, there is a strong correlation between the attitude of English teachers and the spelling problems that their students encounter. Kaur, Parampreet, Vinayak, and Seema (2019)

found that siblings and children with learning difficulties have cognitive and social ramifications within the home setting.

The control, achievement, and moral-religious orientation of a family environment emerged as predictors of general caregiver strain, and the achievement- and control-oriented family environments also showed a positive relationship with general caregiver strain, according to the results. Students with and without learning difficulties were compared in terms of temperament, character, and executive functions by Gayathri Devi and Muhamad Mustaffa (2018).

The study's findings showed that genetic factors are more closely associated with a set of cognitive skills that govern behavior in learning disabled pupils than are individual differences in self-concepts regarding values and aspirations. In metropolitan Vellore, Jebakumar et al. (2018) discovered how knowledgeable teachers were about learning difficulties. In comparison to private school instructors, government/aided school teachers demonstrated significantly greater levels of knowledge in the majority of general knowledge domains, according to the study's findings.

A few studies conducted abroad have reported on SLD. McKenzie et al. (2023) investigated the opinions of regional primary care practitioners in the UK regarding the application and function of learning disability screening instruments in their programs. According to the survey, the majority of practitioners were aware of screening techniques and generally agreed that they were helpful. However, participants tended to rely on unofficial methods or other services to determine whether learning problems were present rather than using screening instruments consistently and/or methodically.

In Saudi Arabia, detecting and assisting students with learning difficulties is compared by Alsarawi and Aeshah (2023). The findings looked at the discrepancy model and recommended using the reaction to intervention strategy as a substitute model. The article also recommends recognizing and assisting students with learning impairments through a multimodal approach. Wu, Ting-Fang; Chen and Cheng-Ming (2023) examined the variables influencing the usage of ICTs by college students, both those with and without learning difficulties. The findings showed that the suggested model might account for how university students, with and without learning difficulties, use information and communication technology.

For students without learning impairments, the model explains 92% of information and communication technology use; for students with learning difficulties, it explains 73% of it. Creating visual physical artifacts was investigated by Weber et al. (2023) as an inclusive approach to investigating digital activities with youth with learning difficulties. The study's important methodological conclusions included the recommendation that VTAs be helpful in helping young individuals with learning difficulties explore digital activities. Konuk Er (2023) looked at pre-school teachers' understanding of learning disability symptoms based on a variety of factors.

According to the length of service, teaching students with learning disabilities, having inclusive students in their class, having a relative in need of special education, and teaching students with learning disabilities variables, the results also revealed statistically significant differences in their knowledge levels about the cognitive, affective, social, and motor characteristics of learning disabilities. The application of single-case study methodologies in practice for evaluating mathematical therapies for

students with learning difficulties was examined by Peltier et al. in 2022.

When assessing if there is a functional relationship between an intervention and the arithmetic performance of students with learning disabilities, single-case research design is a helpful tool. However, risks to the design's internal validity preclude the establishment of a functional relationship. College students with and without learning difficulties were compared in terms of cognitive load, mindfulness, and self-efficacy by Bishara and Saied (2022). The population with learning disabilities regularly outperformed the normally developing population in terms of cognitive load, mindfulness, and self-efficacy, according to the study's findings.

The students without learning difficulties were the only group in whom significant relationships between the factors were discovered. Mathew and Shalini (2020) examined how teenagers with certain learning difficulties in South India coped and felt supported by their peers. The findings showed that, in comparison to their counterparts without learning impairments, adolescents with specific learning difficulties employed more coping mechanisms, such as humor, denial, mental and behavioral disengagement, and religious coping. Perceived social support was significantly inversely correlated with substance usage.

According to a nationwide online poll conducted in 2019, Lee Okin, Shin, and Mikyung examined high school students in South Korea's comprehension of learning disorders. Chi-square test results showed that there were often no significant variations in views and attitudes toward students with learning disabilities based on one's acquaintance with terms linked to learning disorders. Nonetheless, compared to respondents who had never heard the term before, a greater proportion of those who

had previously heard it thought that learning difficulties would have an impact on adult activities. Muted voices of the unexplored sexuality of young people with learning disabilities in Malta.

The results showed that a setting of social behaviors that exclude people, gender stereotypes, and inhibiting attitudes. The basic social understanding that people with learning disabilities are sexual beings with the freedom to express their sexuality and engage in relationships is lacking in Malta, it is decided. For people with learning difficulties, Southby and Kris (2019) investigated and presented a taxonomy of leisure-befriending activities. The study's findings on befriending activities were primarily restricted to pleasurable but informal leisure pursuits that persons with learning difficulties may already engage in with their loved ones and professional support providers.

Many studies from India and other countries are included in the review of studies linked to learning difficulties. These studies provided insight into the psychological, social, emotional, and physical issues these children were dealing with. The prevalence rate of learning disorders was determined by several investigations. However, there are wide variations in the prevalence of math, writing, and reading disabilities. The investigator's development of goals and hypotheses was aided by the evaluation of relevant studies.

It was also quite helpful in the tool construction process. These investigations offered the researcher the impression that, for children with learning disabilities, self-instructional techniques and contemporary instructional strategies work better than conventional approaches to accomplish various goals. It is clear from the review of related literature that not much is being done to create learning resources for high school-

aged children with learning disabilities, which emphasizes the necessity of expanding the current study.

### **Conclusion**

In the areas of a child's cognitive, linguistic, emotional, social, and moral development, schools are vital and formative. Children's learning difficulties can be effectively controlled with the help of scientific guidance, early intervention, and rigorous one-on-one remedial instruction. In India, learning difficulties affect 13–14% of all students enrolled in school. The education system has failed in identifying and supporting these children, despite the fact that the society in which we live labels these children as failures.

Teachers are the children's first point of contact with the educational system, so their degree of knowledge and awareness determines whether or not these children's will eventually be diagnosed with learning disabilities. Regrettably, the majority of these children are never recognized as having learning disabilities. Teachers, parents, and school administrators often fail to recognize these youngsters, labeling them as slow, behind, and failures.

The first issue that has to be addressed is the general lack of understanding among educators, members of the public, and officials in the education department. The study's review found that the teachers' understanding of learning disabilities was quite limited. It has been suggested that workshops and orientation programs be held in order to identify the issues these children are facing and take the appropriate action.

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**M. Sivalingam**, Ph.D. Scholar, Department of Education, Periyar University, Salem, India. Email: msivalingamphd@gmail.com

**R. Venkateswaran**, PhD., Professor, Department of Education, Periyar University, Salem, India