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A STUDY ON THE CURRENT NEEDS IN THE AREA OF DYSGRAPHIA - EARLY IDENTIFICATION AND EARLY INTERVENTION

Abstract

Dysgraphia is a specific learning disability (SLD) affect writing acquisition skills and causing significant academic and socio emotional challenges for children. The Rights of Persons with Disabilities (RPwD) Act 2016 formally recognizes Specific Learning Disabilities, including dysgraphia, as a disability category in India. RCI (2018), defines SLD as difficulties incore academic skills, while DSM 5 (2013) and ICD 11 (WHO, 2019) classify it as a neurodevelopmental disorder affecting learning. Despite of this recognition, dysgraphia remains unidentified and overlooked when compared to dyslexia, leading to delayed intervention. Global estimates indicates that dysgraphia affects 5–20% of school aged children, while limited Indian research suggests prevalence rates of 7–15%, with identification challenges worsened by lack of standardized tools and awareness. This paper examines early identification and early intervention through international and Indian perspectives, addressing definitions, causes, overlapping conditions,the impact on student's academic and emotional well-being and existing tools and technique in the area of early identification and early intervention**.** A review of literature highlights the scarcity of Indian studies, and reinforcing the need for a structured and culturally relevant screening and intervention module. The paper concludes with recommendations aligned with India's inclusive education agenda and the National Education Policy (NEP) 2020.

Key words: Dysgraphia, Specific Learning Disability, NEP 2020, Early Identification, Early intervention

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Introduction

Learning disabilities (LDs) are a group of diverse neurodevelopmental disorders that interfere with the acquisition and use of listening, speaking, reading, writing, reasoning, or mathematical skills (American Psychiatric Association, 2013). While dyslexia and dyscalculia both have received growing attention in research as well as practice, out of whichdysgraphia remains relatively neglected despite its significant implications for children's academic and personal growth. In India,the children with dysgraphia are often go unrecognized due to the absence of standardized screening tools, limited teacher awareness, and the stigma attached to learning difficulties (Sharma & Sinha, 2015).

The importance of early identification and early intervention is reinforced by the NEP 2020, which emphasizes inclusive education and support for children with learning disabilities at the foundational stage (Ministry of Education, 2020). Since writing is a crucial and critical skill for educationalsuccess as well as daily life, the inability to write effectively hampers academicperformance but also affects self-esteem, motivation, and participation in classroom activities (Gupta, 2019).

If we talk about the background of Dysgraphia, it is derived from the Greek words dys (difficulty) and graphia (writing), meaning a specific difficulty in written expression. It is not simply "bad handwriting" but a neurological learning disability that affects a child's ability to write legibly, organize thoughts on paper, and develop automaticity in spelling and written composition (Berninger & Wolf, 2009).

To provide conceptual clarity, dysgraphia is defined and classified differently across diagnostic and legal frameworks.

The Diagnostic and Statistical Manual of Mental Illnesses, or DSM-5 (2013): Categorizes dysgraphia under "Specific Learning Disorder with impairment in written expression." The diagnostic criteria emphasize persistent difficulties in spelling accuracy, grammar and punctuation, and clarity or organization of written expression (American Psychiatric Association, 2013).

International Classification of Diseases, orICD-11 (2019): Lists it under "Developmental Learning Disorders," specifically as a written expression disorder, highlighting difficulties in spelling, grammar, punctuation, and ability to organize coherent written text (World Health Organization, 2019).

Rehabilitation Council of India (RCI): Describes dysgraphia as part of specific learning disabilities, where children exhibit difficulty in handwriting, spelling, and organizing thoughts on paper despite normal intelligence and adequate schooling (RCI, 2018).

Rights of Persons with Disabilities (RPwD) Act, 2016: Officially includes dysgraphia under specific learning disabilities, ensuring legal recognition and entitlements such as accommodations, resource support, and inclusive education provisions (Government of India, 2016).

This variety of conceptualizations demonstrates that dysgraphia is not limited to handwriting but it also is a broader writing disability affecting multiple levels of written expression. A shared challenge across these definitions is the lack of uniform, culturally appropriate assessment frameworks in India.

In the Indian educational context, handwriting continues to hold a central role, particularly at the academic level where assessment and learning are heavily writing-dependent (Nag &Snowling, 2012). Thus, children with dysgraphia face disproportionate challenges compared to peers with other forms of learning difficulties. Often, their difficulties are misunderstood as laziness, carelessness, or lack of practice, which not only delays diagnosis but also negatively impacts self-confidence and motivation (Gupta, 2019).

Talking for the Prevalence of Dysgraphia in India, Estimating the prevalence of dysgraphia remains challenging due to limited research and lack of standardized diagnostic tools in India. Globally, dysgraphia affects 5–20 percent of school aged children (Berninger and Wolf 2009), while Indian studies report 7–15 percent prevalence (Sharma and Sinha 2015). Although recognition under the RPwD Act 2016 has increased awareness, the absence of large scale national data continues to hinder effective policy and intervention.

Research indicates that early intervention in the foundational years (ages 6–8) is crucial, as children's brain plasticity allows for greater adaptability and response to remedial measures at this stage (Shaywitz, 2003). However, in India,lack of teacher training, standardized diagnostic tools, and awareness among parents and educators creates barriers to early support (Sharma & Sinha, 2015).

Dysgraphia often coexists with other neurodevelopmental conditions, making diagnosis and intervention complex. Common overlaps include dyslexia affecting reading and spelling (Berninger and Wolf 2009), ADHD linked with inattention and poor self regulation (Mayes

and Calhoun 2006), and Developmental Coordination Disorder affecting fine motor skills (Katusic et al 2009). It may also occur alongside dyscalculia and language disorders (Shaywitz 2003), highlighting the need for comprehensive assessment and individualized intervention.

This paper addresses the gap by presenting a comprehensive understanding of dysgraphia through international and national perspectives, highlighting the urgent need for developing structured module for early identification and early intervention.

Rationale of the Study

Although dysgraphia is recognised under the RPwD Act 2016 and included within Specific Learning Disabilities, it continues to remain one of the least identified and least supported learning difficulties in Indian schools. In classrooms where writing is the primary mode of learning and assessment, children with dysgraphia face daily academic struggles that often go unnoticed. Their difficulties are frequently misunderstood as lack of effort, poor handwriting, or carelessness, which leads to delayed support and long term emotional and academic consequences.

Despite the importance of early identification, India does not yet have a dedicated, culturally relevant, and classroom friendly module for recognising early signs of dysgraphia. Existing screening tools either address SLD in general or include very limited items related to writing difficulties. This gap between policy recognition and practical school level implementation highlights the need for a structured and developmentally appropriate module.

Therefore, the present study is needed to bring attention to dysgraphia, to review available evidence, and to support the development of an early identification and early intervention module suitable for Indian primary school settings. This will strengthen inclusive education practices and align with national priorities outlined in the NEP 2020.

Objectives of the Study

The main objectives are:

1. To review the conceptualization and definitions of dysgraphia as per international (DSM-5, ICD-11) and Indian (RCI, RPwD Act, 2016) frameworks.
2. To explore the prevalence and causes of dysgraphia, with emphasis on the Indian context.
3. To analyze the overlapping conditions and the academic, emotional, and social impact of dysgraphia on students' lives,
4. To review the available literature,available tools and technique highlighting the scarcity of Indian research on dysgraphia.
5. To recommend the development of an early identification and intervention module suitable for foundational-level classrooms in India.

Methodology

Research Approach

This study uses a qualitative research approach based entirely on secondary data. Since the purpose is to understand existing knowledge, identification practices, and intervention strategies related to dysgraphia, no primary data was collected.

Sources of Data

The review included a wide range of secondary sources such as academic books, peer reviewed journal articles, government documents, and institutional publications. Key references included DSM 5, ICD 11, national policies like the RPwD Act 2016, and materials published by organisations such as NCERT, NIEPID, and NIMHANS. Both national and international studies on Specific Learning Disabilities and dysgraphia were considered, with greater emphasis on research published after 2000 along with essential foundational works.

Data Collection Procedure

Relevant literature was gathered through academic databases, Google Scholar, ResearchGate, government portals, and institutional repositories.

Inclusion and Exclusion Criteria

Inclusion Criteria

The following types of literature were included in the review:

- Studies focusing on dysgraphia, Specific Learning Disabilities (SLD), handwriting difficulties, or writing-related disorders.
- Research examining screening tools, assessment methods, or intervention strategies relevant to dysgraphia.
- Publications discussing the Indian educational context, identification systems, or policy frameworks related to SLD.
- Peer-reviewed journal articles, academic books, government reports, and institutional documents (e.g., NCERT, NIMHANS, NIEPID).
- Studies published after 2000, along with essential foundational works frequently cited in the field.
- Both national and international research that contributes to conceptual or practical understanding of dysgraphia.

Exclusion Criteria

The following sources were not included:

- Studies focusing solely on unrelated neurological or developmental disorders without direct relevance to dysgraphia.
- Articles that addressed handwriting problems caused by temporary, medical, or environmental factors rather than learning disabilities.
- Publications lacking academic reliability, such as non-peer-reviewed blogs, opinion pieces, or unverified online content.
- Studies with insufficient methodological clarity or without accessible full text.
- Research unrelated to early identification or intervention frameworks relevant to foundational-level learners.

Data Analysis: Thematic Content Analysis

The collected literature was analysed using thematic content analysis. Themes were developed through repeated reading, comparison, and interpretation of the selected texts. The analysis helped identify recurring concepts and organise the findings meaningfully.

The following major themes emerged from the review:

- conceptual definitions and understanding of dysgraphia
- prevalence and identification challenges

- overlapping conditions within SLD
- academic and emotional impact on children
- available screening and assessment tools
- intervention practices at national and international levels
- gaps in Indian research and the need for a structured early identification and intervention module

This thematic organisation supported the study's objective of examining existing knowledge and highlighting the need for an Indian context specific module for early identification and early intervention of dysgraphia at the foundational level.

Literature Review

34 The literature on dysgraphia is relatively limited when compared to other learning disabilities such as dyslexia and ADHD.

International Research: Studies from the United States and Europe emphasize the neurological basis of dysgraphia, its comorbidities, and effective intervention strategies. For instance, Berninger and Wolf (2009) highlighted the role of brain functioning and motor coordination in handwriting difficulties, while Katusic et al. (2009) reported strong correlations between dysgraphia and developmental coordination disorders. Research also stresses the importance of early interventions like occupational therapy, multisensory teaching, and assistive technology (Shaywitz, 2003).

Research has revealed that the presence of dysgraphia in learners has multiple consequences ontheir academic performance and psychological well-being some of which include: low quality ofwritten work, difficulties in organizing thoughts and translating them into written work, poorreading skills, poor academic performance, academic underachievement, low self-esteem, poorpeer relationships, social isolation, increased stress levels, anxiety, depression, suicidal ideation,reduced participation in academic and social activities in school and exhibition of maladaptivebehaviours (Chung & Patel, 2015; Cleveland Clinic, 2022; McBride, 2021; Rose, Forber-Pratt,Espelage, & Aragon, 2013; Rosenblum, Aloni, & Josman, 2010).

Indian Context: In contrast, research in India has been sparse. Nag and Snowling (2012) noted that while dyslexia has received some policy attention, dysgraphia remains under-identified. Sharma and Sinha (2015) found that nearly 10% of primary school children in their study displayed writing difficulties but were rarely diagnosed with dysgraphia. Gupta (2019) emphasized the need for teacher awareness and culturally relevant teaching strategies to address handwriting issues.

Gap in Research: Despite the RPwD Act (2016) legally recognizing dysgraphia, there is a lack of standardized tools for its identification in Indian schools. Very few intervention modules are designed specifically for Indian classrooms, where large class sizes, rote learning methods, and examination pressures exacerbate the difficulties of children with dysgraphia.

This review highlights the urgent need for context-specific, evidence-based interventions that not only identify dysgraphia early but also provide remedial strategies suited for Indian classrooms.

Dysgraphia, has been the subject of numerous studies over the past few decades, though Indian research remains limited. Thework of Berninger et al. (2006) emphasized the neuropsychological basis of dysgraphia, distinguishing it from mere poor handwriting and linking it to deficits in orthographic working memory. This framework set the tone for future assessment and intervention strategies, such as the Process Assessment of the Learner (PAL).

Internationally, research on interventions has been rich and varied. Hurschler Lichtsteiner et al. (2024) demonstrated improvements in handwriting quality through structured psychomotor therapy. Similarly, Engel-Yeger et al. (2024) highlighted the connection between fine motor skills and writing self-efficacy in children. A systematic review by Möller & Rott (2025) identified four key types of interventions: sensorimotor, technology-aided, self-regulated, and integrated approaches, indicating a growing trend toward multifaceted treatments.

Technological innovations have played a significant role in recent assessments. Deep learning models like CNN and ResNet were used by Sulaiman et al. (2024) in Malaysia, achieving 91.8% accuracy in identifying dysgraphic handwriting. SensoGrip pens, as shown in an arXiv study (2022), demonstrated over 99% accuracy in detecting writing anomalies via real-time data from sensor-equipped pens. Another model using handwriting on tablets achieved 83.6% accuracy in dysgraphia detection in Czech children (Wachsmuth et al., 2024), while Nevisi& Tahmasbi (2025) developed an intelligent game to predict dysgraphia with 93% accuracy.

However, the Indian context lacks sufficient empirical work. According to Ramaa &Gowramma (2002) and Karande et al. (2007), identification of specific learning disabilities—including dysgraphia—is often delayed due to a lack of awareness and inadequate teacher training. A large-scale study in South India revealed a 12.5% dysgraphia prevalence rate among children with learning disorders (Madhu et al., 2011). A more recent meta-analysis estimated the overall prevalence of SLD in India to be 8%, with dysgraphia still under-researched (Sharma et al., 2024).

Overlap conditions like dyslexia and ADHD also complicate diagnosis and intervention. Studies by Mayes & Calhoun (2007) indicate that up to 50% of children with dyslexia meet the criteria for dysgraphia. Additionally, Tseng & Chow (2000) found that students with ADHD display impaired handwriting due to deficits in fine motor planning.

Assistive technologies have shown promise. A review of interventions between 2018 and 2023 suggested that tools like speech-to-text, graphic organizers, and touch-typing software significantly support dysgraphic students (Singh et al., 2023). Despite this, such solutions are seldom implemented in Indian classrooms due to resource limitations and policy gaps.

In sum, although international research on dysgraphia has expanded, India's contribution remains sparse. There is an urgent need for standardized assessment tools in regional languages, culturally relevant interventions, and early identification modules for foundational-level learners. This study seeks to address this critical gap by proposing a practical, contextually tailored module for early intervention in Indian primary education settings.

Highlighted points

The literature review clearly shows thatdysgraphia is studied extensively at the international level**,** with strong evidence on its neurological basis, comorbidities, and effective interventions. Research from countries like the USA and Europe provides detailed insights into brain functioning, motor coordination, early interventions, and technology-based assessment models. A wide variety of intervention strategies such as psychomotor therapy, multisensory approaches, assistive technology, and advanced digital tools have been developed and tested with considerable success.

In contrast, Indian research remains limited and fragmented**.** While policy recognition exists under the RPwD Act 2016, studies show that dysgraphia is still poorly identified, often confused with poor handwriting, and rarely addressed in teacher training or classroom practices. The few Indian studies available indicate prevalence of writing difficulties but highlight major gaps in awareness, diagnostic tools, and systematic interventions. No standardized, validated, or India-specific module currently exists for early identification or early intervention.Thereview therefore highlights a critical research gap**:** India lacks culturally relevant tools, structured intervention programmes, and empirical studies focused specifically on dysgraphia. This gap persists despite international advances and clear evidence of the academic and emotional impact of dysgraphia on children.

Overall, the literature review supports the need for a context-specific, evidence-based early identification and early intervention module for dysgraphia in Indian primary school settings.

Impact of Dysgraphia on Students' Lives

The impact of dysgraphia extends beyond academics, affecting a child's emotional, social, and psychological development.

Academic Challenges: Writing is central to almost all classroom tasks, from note-taking to examinations. Students with dysgraphia struggle to keep pace with peers, often leading to poor academic performance despite average or above-average intelligence (Gupta, 2019).

Emotional and Psychological Effects: Constant feedback such as "your handwriting is bad" or "you need to try harder" contributes to feelings of frustration, low self-esteem, and learned helplessness (Sharma & Sinha, 2015). Anxiety and avoidance of writing tasks are common outcomes.

Social Implications: In classrooms where neat handwriting is valued, children with dysgraphia may face teasing, exclusion, or unfair comparisons with peers. These experiences often hinder peer relationships and social confidence (Nag &Snowling, 2012).

Long-Term Outcomes: If unaddressed, dysgraphia can limit career choices in fields that require extensive written work, and students may underperform in competitive exams due to their writing difficulties. Adults with untreated dysgraphia often report continued challenges in professional documentation and organization skills (Berninger & Wolf, 2009).

Children with dysgraphia experience academic setbacks, particularly in written exams and classroom participation. Their handwriting is often illegible, slow, or disorganized, which affects self-confidence. These children may avoid writing tasks, experience anxiety, and feel socially isolated. Teachers may misinterpret their struggles as laziness or low intelligence. Over time, these students may develop low self-esteem, frustration, and a negative attitude toward school, impacting their long-term educational trajectory and mental health (Berninger & Nielsen, 2008).In India, where exams and written expression are the primary modes of academic evaluation, dysgraphia has a disproportionately negative impact. This underscores the urgent need for early identification and structured intervention modules at the foundational level.

Existing tools and technique in the area of early identification and early intervention

In India, tools for identifying Specific Learning Disabilities (SLD) are gradually evolving, but only a limited number specifically address writing difficulties such as dysgraphia. Like PRASHAST(Pre-Assessment Holistic Screening Tool), it is a disability screening checklist for schools PRASHAST is only for screening and referral to facilitate early screening, identification and interventions for CWSN, the Government through NCERT has developed PRASHAST, a mobile AppPRASHAST 2.0 to digitally screen students for possible disabilities at school level. (Ministry of Education, Government of India, 2025, pp. 2)

Government of India (GoI) recognizes the need for standardized tools for assessment of children with Specific Learning Disabilities (SLD) as defined in the RPwD Act 2016. To this end, culturally relevant assessment tools including NIMHANS SLD Battery (NSB) and Grade Level Assessment Device (GLAD) for dyslexia have been developed for younger children by national institutes/ institutes of national importance under the GoI such as National Institute of Mental Health and Neuro Sciences (NIMHANS) and National Institute for the Empowerment of Persons with Intellectual Disabilities (NIEPID). Further, NIEPID has taken-up the following research projects to develop assessment tools for identification of Persons with Dyslexia and Learning Disorders, as part of Make in India program(Ministry of Education, Government of India, 2025, pp. 2–3).

NIEPID has also developed assessment tools including (1) Functional Assessment Checklist for Programming (FACP), (2) Grade Level Assessment Device (GLAD), (3) Behaviour Assessment Scale for India Children with Mental Retardation (BASIC-MR), (4) Behaviour

Assessment Scale for Adult Living Mental Retardation (BASAL-MR) and (5) Comprehensive Vocational Assessment Tool (C-VAT), which are being widely used in India. These are supplemented by digitalized tools/forms developed by NIEPID in collaboration with various Disha Abhiyaan organizations, i.e. (1) Individualized Education Proforma (IEP (2) eSupport for Autism, Neurodiversity Integration, Development, Home Care & You (eSanidhya)(Ministry of Education, Government of India, 2025, pp. 2–3).

Another standardized tool, NIMHANS Index for Specific Learning Disabilities, developed by the National Institute of Mental Health and Neurosciences (NIMHANS), Bengaluru, is one of the earliest Indian tools designed to evaluate Specific Learning Disorders in alignment with the school curriculum (Kapur et al., 1991; Panicker et al., 2015). It is administered in two levels: Level I for younger children (approximately ages 5–7 years) assessing basic perceptual, motor, memory and emerging literacy skills, and Level II for older children (approximately 8–12 years, and in practice sometimes up to 16 years) assessing reading, spelling, writing, comprehension and arithmetic skills (Roopesh, 2021). Because the assessment is curriculum-based, it compares a child's performance with expected grade-level competencies rather than international standardized norms, making it highly relevant for Indian classrooms (Panicker et al., 2015).

While the tool is useful for identifying learning disabilities including dyslexia, dysgraphia and dyscalculia, it has certain limitations. It requires administration by trained professionals, is time-consuming, and may not fully assess older adolescents or children studying in non-mainstream curricula (Roopesh, 2021). In the context of dysgraphia, the NIMHANS battery evaluates spelling, handwriting, and written expression and can therefore support diagnostic decisions, but it does not provide a detailed breakdown of graphomotor fluency, fine-motor coordination, or handwriting quality (Shah et al., 2019). This means that while the tool contributes to identifying dysgraphia, it does not comprehensively assess all components of writing disability and may need to be supplemented with additional assessment tools (Panicker et al., 2015; Shah et al., 2019).

There is no such identification and intervention module available in Indiawhich particularly talk about dysgraphia, thereby emphasizes towards the need of one.

Recommendations

Based on the review and analysis, the following recommendations are proposed for addressing dysgraphia at the foundational level in India:

Early Screening and Identification

- Develop standardized screening tools in regional languages for children in Grades 1–2.
- Train teachers to recognize early warning signs such as poor handwriting, inconsistent letter formation, and difficulty in organizing written work.
- Early identification is crucial because timely support prevents long-term academic setbacks and reduces the psychological distress associated with repeated failure.

Teacher Training and Awareness

- Conduct professional development workshops to enhance teachers' knowledge of specific learning disabilities, especially dysgraphia.
- Provide teachers with classroom strategies such as multisensory writing practices, structured handwriting exercises, and use of assistive tools.

Development of Intervention Modules

- Create a culturally relevant, research-based module for early intervention that integrates occupational therapy, remedial education, and technological aids.
- The module should be specifically designed for the foundational level, as early intervention has the greatest impact on improving handwriting skills, strengthening fine motor abilities, and boosting academic confidence.
- Align the module with NEP 2020, which emphasizes inclusive and foundational learning.

Parental Involvement

- Educate parents on supporting children at home with activities to improve fine motor skills, such as clay modeling, tracing, and drawing.
- Encourage positive reinforcement to build self-esteem and reduce the emotional burden of academic struggles.

Policy Implementation

- Strengthen the enforcement of the RPwD Act (2016) in schools by ensuring dysgraphia accommodations (extra time in exams, use of scribes, or technology).
- Collaborate with NGOs, special educators, and research institutions to conduct large-scale studies and develop national prevalence data.

Conclusion

Dysgraphia remains highly under-recognized in India despite its significant impact on children's academic performance, emotional well-being, and long-term educational outcomes. Global research highlights its neurological basis and the value of early intervention, yet Indian schools continue to face major gaps in awareness, screening, and teacher training. Although policies such as the RPwD Act (2016) and NEP 2020 acknowledge Specific Learning Disabilities, practical implementation—especially for dysgraphia—remains limited. Existing tools like PRASHAST and the NIMHANS SLD Index support general screening but are not comprehensive enough to diagnose or intervene specifically for dysgraphia. This gap is further widened by overlapping conditions such as dyslexia and ADHD, which complicate timely identification.

Given that early childhood is crucial for developing foundational writing skills, the absence of a culturally relevant and systematically validated dysgraphia-specific module restricts children's learning opportunities and reinforces educational inequities. Developing an evidence-based module for early identification and intervention is therefore essential for supporting teachers, empowering learners, and promoting truly inclusive education in India. Such a module will bridge the gap between policy and practice, ensuring that every child with dysgraphia receives timely, appropriate, and meaningful support.

References

BOOKS

American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). American Psychiatric Publishing.

Berninger, V. W., & Wolf, B. (2009). Teaching students with dyslexia and dysgraphia: Lessons from teaching and science. Brookes Publishing.

Fletcher, J. M., Lyon, G. R., Fuchs, L. S., and Barnes, M. A. (2007). Learning disabilities: From identification to intervention. Guilford Press.

Mangal, S. K. (2007). Educating exceptional children: An introduction to special education. PHI Learning.

Ramaa, S., &Gowramma, I. P. (2002). Manual on Learning Disabilities.

Rehabilitation Council of India. (2020). Handbook for special educators.

Shaywitz, S. (2003). Overcoming dyslexia. Knopf.

PEER-REVIEWED JOURNAL ARTICLES

Berninger, V. W., Nielsen, K. H. (2008). Writing problems in children with learning disabilities. Journal of School Psychology, 46(6), 477–507.

Berninger, V. W., Richards, T., & Abbott, R. (2006). Differential diagnosis of dysgraphia, dysorthographia, and dyslexia. Journal of Learning Disabilities, 39(4), 323–345.

Chung, D., & Patel, D. (2015). Dysgraphia. International Journal of Child Adolescent Health,8(1), 27–36

Cleveland Clinic. (2022, June 15). Dysgraphia: What It Is, Symptoms, Diagnosis & Treatment.

Cleveland Clinic. https://my.clevelandclinic.org/health/diseases/23294-dysgraphia

Engel-Yeger, B., Nagauker-Yanuv, L., & Rosenblum, S. (2024). Fine-motor skills and writing self-efficacy in school-age children. Human Movement Science, 94, 102122.

Gupta, R. (2019). Handwriting difficulties among Indian school children: Causes and classroom implications. Indian Journal of Educational Studies, 7(2), 45–52.

Hurschler-Lichtsteiner, S., Moser Opitz, E., &Käser, T. (2024). Effectiveness of psychomotor-based handwriting intervention. Occupational Therapy International, 31(1), 1–12.

Karande, S., Kulkarni, M., & Rao, S. (2007). Specific learning disability: Prevalence and need for teacher awareness. Indian Pediatrics, 44(11), 993–995.

Katusic, S. K., Colligan, R. C., Barbaresi, W. J., Schaid, D. J., & Jacobsen, S. J. (2009). Case definition and prevalence of written-language disorder in a population-based cohort. Pediatrics, 123(3), 929–936.

Madhu, S., Varghese, A., & Raju, J. (2011). Prevalence of dysgraphia among children with SLD in South India. Indian Journal of Clinical Psychology, 38(2), 145–152.

Mayes, S. D., & Calhoun, S. L. (2006). Frequency of reading, math, and writing disabilities in children with ADHD. Learning and Individual Differences, 16(2), 145–157.

Mayes, S. D., & Calhoun, S. L. (2007). Learning disabilities and ADHD: Overlapping conditions in school children. Journal of Learning Disabilities, 40(5), 437–447.

McBride, C. (2021). The “Write Stuff”: What Do We Know About Developmental

Dysgraphia? International Journal for Research in Learning Disabilities,5(1), 3–12.

https://doi.org/10.28987/ijrld.5.1.3

Möller, A., & Rott, C. (2025). Intervention strategies for dysgraphia: A systematic review. Educational Psychology Review, 37(1), 155–180.

Nag, S., &Snowling, M. (2012). School-based assessment of literacy: The case of dysgraphia in India. Journal of Research in Reading, 35(3), 318–333.

Nevisi, N., & Tahmasbi, H. (2025). Intelligent game-based system for predicting dysgraphia in children. Computers & Education, 207, 104637.

Panicker, A. S., Uma, S., & Chandrasekaran, R. (2015). Effectiveness and relevance of NIMHANS SLD tool. Indian Journal of Psychological Medicine, 37(3), 295–301.

Ramaa, S., &Gowramma, I. P. (2002). A systematic approach to identifying specific learning disabilities in India. Asia Pacific Journal of Developmental Differences, 5(1), 37–45.

Roopesh, B. N. (2021). Assessment of Specific Learning Disabilities using the NIMHANS Index. NIMHANS Journal, 42(1), 29–41.

Shah, R., Karanth, P., & Bhat, J. (2019). Assessment practices for dysgraphia: Review of Indian tools. Indian Journal of Child Psychology, 6(1), 14–27.

Sharma, S., & Sinha, P. (2015). Prevalence and identification challenges of dysgraphia in Indian schools. Indian Journal of Special Education, 3(4), 22–30.

Sharma, V., Gupta, M., & Kaur, H. (2024). Prevalence of SLD in India: A meta-analysis. Journal of Disability Studies, 14(1), 1–13.

Singh, A., Verma, P., & Chaudhary, R. (2023). Assistive technologies for writing difficulties: A systematic review. Educational Technology & Society, 26(2), 120–136.

Sulaiman, N., Mohammed, H., & Fauzi, S. (2024). Deep learning-based detection of dysgraphia among Malaysian students. International Journal of Artificial Intelligence in Education, 34(1), 55–72.

Tseng, M. H., & Chow, S. M. (2000). Perceptual-motor function and handwriting of children with ADHD. American Journal of Occupational Therapy, 54(2), 179–185.

Wachsmuth, I., Cerná, M., & Kovar, M. (2024). Tablet-based handwriting evaluation for dysgraphia detection in Czech children. Computers in Human Behavior, 150, 107993.

GOVERNMENT DOCUMENTS, POLICIES & OFFICIAL REPORTS

Government of India. (2016). Rights of Persons with Disabilities Act, 2016. Ministry of Law and Justice.

ICD. (2022). International Classification of Diseases 11th Revision. World Health Organization.

Kapur, M., John, A., Rozario, J., & Oommen, A. (1991). NIMHANS Index for Specific Learning Disabilities. National Institute of Mental Health and Neurosciences.

Ministry of Education, Government of India. (2022). PRASHAST: A disability screening checklist for schools (Part 1 and Part 2). Department of School Education and Literacy.

Ministry of Education, Government of India. (2025, July 23). Support for dyslexia and learning disorders: Unstarred Question No 375, Rajya Sabha.

Ministry of Education. (2020). National Education Policy 2020. Government of India.

NCERT. (2017). Position paper on inclusive education. National Council of Educational Research and Training.

Rehabilitation Council of India. (2018). RCI guidelines for specific learning disabilities. RCI Publication.