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Dysgraphia: A Specific Learning Disability

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Abstract: Learning Disability is an umbrella term that describes a number of difficulties in a child in his academic field. It is a type of neurological disorder which significantly affect the use and acquisition of academic and language skills such as reading, writing, listening, reasoning and mathematical abilities. It is now more accurately referred as Specific Learning Disability to emphasize the domain-based and specific nature of language and academic difficulties that occur despite educational opportunity and average intelligence. Among these SLD, writing difficulty otherwise known as Dysgraphia is considered as more crucial disability at early stage of life. Dysgraphia as a specific learning disability is neglected and to some extent remains unidentified at early stage of education due to ignorance and lack of awareness among teachers and parents which ultimately affect the academic skills of the individual. In Indian educational context, two to five students in every classroom were suffered from dysgraphia. Studies showed that early identification and intervention are widely recognized as critical factors to minimize the psychological consequences and long-term academic skills of learning disabled children.

Index Terms**:** Learning Disability, Specific Learning Disability, Dysgraphia, Identification and Intervention.

Introduction:

Learning disability is considered as a type of neurodevelopmental disorder that significantly affects the ability of a child to store, receive, process and respond the information. These difficulties occur in a child having normal intelligence and are not primarily related to sensory motor and environmental factors (American Psychiatric Association [APA], 2013). It is considered as a huge difference between a child's ability to learn and his achievement level (Dash and Behera, 2010). It significantly affects more than one cognitive process of a child which influence the basic skills of academics, i.e. reading, writing, speaking and calculations (Indira & Vijayan, 2018). The term "Learning Disability" was first used by Samuel A. Kirk in Chicago in the year 1963. Under the Rights of Person with Disabilities Act (RPwD), 2016, the term "Specific Learning Disability" now being prevailed to a great extent, focus on intellectual disability and other developmental disorders of children. This refers to major problems in one of three basic skills of learning, i.e. reading, writing and arithmetic, which are considered as the essential components of learning (American Psychiatric Association, 2013).

Concept of Specific Learning Disabilities:

Specific Learning Disability is considered as a kind of disability in which students suffered from writing disability (Dysgraphia), reading problems (Dyslexia) and impairment in mathematical calculations (Dyscalculia) (Lyon, Shaywitz & Shaywitz, 2003). Epidemiological studies indicate that SLD affects approximately 5-15% of school-age children. Given typical classroom sizes, this suggests that most regular classroom likely to include two or three students with SLD, many of whom remain unidentified (APA,2013; Cortiella & Horowitz, 2014, Snowling, 2013). Many students were admitted to school with specific learning difficulties and failed to complete their education due to their disabilities and eventually quit the school before completing their education (Gandhimathi, 2010). In India, it is found that 5-20% of

school going children were suffering from some specific form of Learning Difficulties (American Psychiatric Association, 2013; Fletcher et al., 2007; Reid et al., 2005). Most of the students (13-15%) at the school going age were suffered from more than one specific difficulty (Chacko & Vidhukumar, 2020). In each and every classroom, there must be two to five students who were suffering from specific kind of SLD (Snowling, 2013 & Fletcher et al. 2019). Early detection of these disorders are very much essential for giving them appropriate interventions for their better improvement at their early stage of life (Johnston & Rogers, 2011; Jyothi, 2021). Among various specific learning difficulties, Dyslexia and Dysgraphia are found to be most common in school-aged children. Dysgraphia is related to Writing difficulties in students where as Dyslexia is related to reading problems. Most of the cases were found in reading and writing problems of the child rather than mathematical difficulties (Goel, 2021).

Dysgraphia: A Specific Leaning Disability-

Among various specific learning disabilities, handwriting difficulties or dysgraphia are significantly found in school going children, but most of the cases remain unidentified or under-recognized in educational setting due to lack of awareness and ignorance among teachers and parents. Dysgraphia is characterized by a neurological disorder that hampers one's ability to communicate in written form (Hamdioui, et al., 2020). Students with dysgraphia may develop low self-esteem, avoidance of written tasks and academic anxiety (Snowling,2013) and also faces problems in relation to oral expression, reading paragraphs and language tasks (McCloskey, & Rapp., 2019; Gargot, et al. 2020;Döhla & Heim., 2016). Dysgraphia is considered as a form of specific leaning difficulty which primarily affects the writing ability of the individual while expressing their thoughts (Richards, 1999). It is characterized by slow writing speed, poor and illegible handwriting, reversal errors,, incomplete sentences, improper spacing between letters and words, omission of letters, incorrect punctuation and difficulty in organizing thoughts in written form (Berniger & Richards, 2010). Some of the major characteristics of dysgraphia were mixture of upper and lower case letter, irregular letter sizes and shapes, inefficient speed in copying, general illegibility, excessive erasures, cramped fingers on writing tool, odd wrist and paper positions, poor organization on the page, insufficient and decreased speed in writing and copying, slow implementation of verbal directions that involve sequencing and planning (Richards, 1999). Fiefer (2001) stated that there are majorly four sub-types of dysgraphia, namely- phonological dysgraphia, surface dysgraphia, mixed dysgraphia and semantic dysgraphia. The phonological dysgraphia reflect the misbalance between phonological representations involved in speech production or perception (Plaut et al.,1996; Patterson et al., 1996; Farah et al., 1996; Patterson & Ralph, 1999; Harm and Seidenberg, 1999; Crisp & Lambon Ralph, 2006; Wellbourne & Lambon Ralph, 2007). It is a writing disorder related to difficulty in sound to letter conversion process, while spelling familiar words might remain relatively intact. The second type of dysgraphia named surface dysgraphia is a form of dysgraphia characterized by impaired spelling of irregular words due to deficits in the lexical spelling route, with relative preservation of phonological spelling abilities (Ellis, 1982; Coltheart et al.; 2001). The third type of dysgraphia, i.e., mixed dysgraphia is characterized by difficulty in both regular and irregular words due to both lexical and phonological spelling routes (Ellis, 1982; Coltheart et al.; 2001). The last type of dysgraphia, i.e. semantic dysgraphia is a type of dysgraphia that results in meaning-based spelling errors during written word production (Ellis & Young, 1988; Hills & Caramazza,1995).

Dysgraphia includes many issues related to social, professional and academic domains and becomes complicated by the advancement of science and technology (Aziz et al., 2024). Around one in five students are suffering from writing problems which greatly affect their academic career (Berninger & Niedo 2014; Berninger & Swanson 2013). It is found that the major hereditary cause for dysgraphia may be ill health, excessive use of drugs or lack of medical care of mother during pre-natal or post natal period (Premils, 2014). The other general factors that causes dysgraphia are organic or physiological factors and some environmental factors (Mangal, 2007). Focusing on these causes, handwriting disabilities of children can be reduced by longitudinal studies, various standardized diagnostic tools, advanced educational strategies and equitable access to interventions (Rokade, et al., 2024). Longitudinal research is very much essential to get an in depth idea about the origin and progression of dysgraphia and to understand educational strategies, particularly for adults (Ceccacci, et al., 2024).

A child with SLD may be academically weak but his/her performance may excel in extracurricular activities like sports, dance, art,etc. (Elliott & Grigorenko 2015). Based on this statement, a film was also launched named "Taare Zameen Par (2007)" in which a child named Ishaan Awasti who had a specific kind of disability, was academically poor but his creative artistic talent was identifieid by his art teacher. This film reflects the role of teacher and parents are very much essential for proper development of learning disabled students. Early identification, individualized instructional support and educational strategies were

highly needed for proper screening of writing difficulties and improvement of academic outcomes of the students (Vaughn & Fletcher, 2020). In the Indian educational context, limited screening of the problematic students and lack of awareness among teachers and parents hinders the early detection of disability to a great extent (Karande, 2008). This can be improved through various interventions like assistive technology, focused training of handwriting and accommodations for their social development and academic performance (Moss, et al., 2024).

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