Imagining Learning Disability: A Systematic Search and Review of Empirical Evidences

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Abstract

Every children of a nation has equal right to education. Children built their conception in different ways and learn at different rates. Most of the times, it has observed that a certain number ofstudents learn at slower rate than other students of the same age. This may be due to some intellectual disability. Children who deserve special need are called to be Special Children. "Special Needs" is a kind of umbrella underneath which a staggering array of diagnoses can be wedged. Children with Learning disabilities show problems in any of the three academic areas namely; reading, writing and mathematics. Moreover, the academic problems are also accompanied by co-morbid conditions. Although researchers have expressed the need for interventions focusing on both the academic as well as behaviour problems, most of the studies on children with LD have focused only on their academic performance. This study focused on the different types of disability and writing problems of children with LD. The purpose of this study was to examine the differential effects of interventions designed only for writing problems and intervention designed for the writing problems as well as the behavioural problems. This study also highlighted the present scenario of Learning Disability in India.

Keywords: Learning Disability, Special Children, Special Needs, writing problems, behavioural problems

Introduction

Every disabled person should have a right to live in the world that does not see him or her as handicapped but as a person with a unique set of abilities and life potentials. Children and young people with disabilities continue to be one of the most disadvantaged groups in all our societies. Accepting them is a problem and knowing what to-do about it is quite different thing of course. Children develop and learn at different rates and in different ways. However, some children will learn at a much slower rate than other children of the same age. This may be due to the intellectual disability. Children who deserve special need are called to be Special Children. "Special Needs" is an umbrella underneath which a staggering array of diagnoses can be wedged. Children with special needs may have mild learning disabilities or profound mental retardation; food allergies or terminal illness; developmental delays that catch up quickly or remain entrenched; occasional panic attacks or serious psychiatric problems. Learning disabilities is a known issue in the USA amongst the average population, however, in India; knowledge about LD is limited to professionals dealing with the mental health issues of school going children. For this reason, the investigator provides a brief introduction to the subject of LD and its subtype writing disabilities, before discussing the purpose and need for this study.

Disability

The inability to carry out the regular activities is termed as 'Disability'. Some people in our community have difficulties which other people do not have. For instance, some people have difficulty in seeing. Some people have difficulty hearing, speaking, learning, or moving around in the same way as others. Some people show strange behaviour or have fits. Other people have no feeling in hands and feet. Such difficulties are called disabilities. Every community has some people with disabilities. We find people with disabilities live their lives in the same way as others in our community. But we also find that because of their disabilities some people have problem living their lives in same way others. It is difficult for them to do all activities that other family and community members do.

Types of Disability

- Autism
- Deaf- Blindness
- Deafness
- Emotional Disturbance
- Mental Retardation
- Multiple disabilities
- Orthopaedic impairment
- Other health impairment
- Learning Disabilities
- Speech Impairment
- Traumatic Brain Injury
- Visual Impairment

Learning Disabilities

The history of Learning disabilities (LD) can be traced back to the early 19thcentury. The need to study LD perhaps came from the concern about students, who continually failed in school in spite of possessing average intelligence (Hirisave & Kapur, 2002). The study of LD has undergone several conceptual changes. Several terms have been used to describe LD and children who have LD. The study on learning disabilities was initially started by Strauss and his colleagues in the 1930's. The term brain-injured was changed to minimal brain damage during 1960's. The term LD itself was coined by Kirk in 1962. The first definition of LD was also submitted under his leadership. The National Advisory Committee on handicapped children (USA) presented a new definition with some modifications in 1968. In 1982, Myers and Hammill challenged this definition. According to them, the definition included phrases regarding "basic psychological processes" and "the ability to listen, speak, read and write" that were vague and ambiguous. Later, the National Joint committee for Learning Disabilities (NJCLD) gave a definition that rectified the flaws found in the definition given by the National Advisory Committee. According to APA (1994), the prevalence rate of LD is between 2-10%.Approximately 5% of students in the public schools in the United States are identified as having LD. Even Indian studies have reported an incidence rate of approximately 10% of all school going children. The USA and several countries in Europe have a long history of research in the area of LD. Definition of LD Today the most widely accepted definition of LD is the one proposed by Diagnostic and Statistical Manual, 4th edition (DSM-IV) published by the American Psychiatric Association (APA) in 1994. They state,

"Learning disorders are diagnosed when the individual's achievement on individually administered, standardized tests in reading, mathematics or written expression is substantially below that expected for age, schooling and level of intelligence. The learning problems significantly interfere with academic achievement or activities of daily living." (APA DSM-IV, 1994)

Status of LD in India

In India, interest in the area of LD has risen only in the last decade or so (Karanth, 2003). In the past couple of years, independent professionals and researchers in India have studied learning disabilities. However, there are few epidemiological studies conducted in India (Karanth, 2003). Most of the work done in this area is scattered and sporadic in nature. A

number of studies have been conducted in India, however they are scattered across individuals and institutions. A diverse range of professionals such as psychiatrists, psychologists, special educators, medical professionals, teachers and parents have shown interest in this area (Karanth & Rozario, 2003). Medical institutions, University departments, Governments agencies, Non-government organizations (NGO) and other such institutions have played a partin this area so far. The efforts of these institutions and researchers have led to some positive achievements. With the help of the State Council for Education Research and Training (SCERT), Maharashtra, SNDT University was able to formulate certain provisions for the benefit of children with LD. The list of provisions included exemption from a third language and higher mathematics, allowing extra time during examinations and provision of a scribe for students with writing disabilities (Pandit,2003). However these provisions are limited only to one state. Due to the lack of proper information dissemination, most of the time, parents and teachers remain unaware about these provisions (Karanth, 2003). However in India, due to the lack of collaboration between the researchers and the teachers, hardly any classroom intervention takes place. Research from the US indicates that most of the intervention strategies for students with learning disabilities can be easily applied within the classroom by the teacher (Graham & Harris, 1985). In India, estimate for children with academic difficulties in different settings range from 9 to 39% (Kapur, 1995; Kumar, 1999; Rozario, 1990; Sarkar, 1990;Shenoy, 1992). Kumar (1999) estimated that 10% of school children in India have specific learning disabilities. An extensive survey conducted in the State of Kerala, India reported that nearly 10% of children and adolescents in the age range of 1-18 years experienced learning difficulties (Suresh & Sebastian, 2003). In the same on-going research, rural schools have also been studied. A number of these studies assessed academic or learning difficulties; very few assessed learning disabilities (LD).Most of the work conducted in India is concentrated in the urban schools where English is the medium of instruction (Karanth 2003). Very few studies have been conducted in the rural areas. The assessment tools and remedial procedures are often influenced by the western practice. These tools do not take into account certain cultural dimensions such as bilingualism/multilingualism, literacy support at home, or classroom conditions. India is a multilingual society where children grow up speaking at least two languages. Children who study in schools where the medium of instruction is English have the task of learning an additional language (Karanth 2003).It becomes especially difficult when parent at home do not speak in English, it has been found that children who belong to non-English speaking homes learns lower than those who come from English speaking backgrounds (Loomba,

1995). In India, literacy support at home varies from zero (illiterate parents) to a fairly high degree (highly educated parents-Post graduation) (Karanth & Rosario,2003). Classroom conditions are also inadequate. A typical classroom comprises between 50-100 students supervised by a single teacher (Karanth, 2003). Teachers are often inadequately trained and equipped. Often teachers themselves have a lack of understanding about learning disabilities. Under these conditions, identification and remediation of learning disabilities becomes a problem. Even if they are identified, there are not enough trained professionals to cater to all the children with learning disabilities in India (Karanth, 2003).

Co-morbid conditions

The definition of LD eliminates persons whose primary problem is emotional disturbances. If the emotional disturbance is the cause of the learning problems the nelimination of the emotional problem will lessen the learning disability. Severe anxiety, need for support as well as feelings of being unloved has been reported amongst children with LD by Bender (1998). The effect of damaged sense of self on the development of many children with LD has become an interesting concern. A child aware of his limited abilities may be unable to act appropriately, may compensate by becoming aggressive or may try to mask his inability by overcompensating. Passivity, dependency, aggressive compensation, withdrawal, copying, shame, and guilt are possible reactions to the realization of one's disability. Stress and tension often raise the frequency of ineffective behaviour and forms a vicious circle of disapproval, thought of inadequacy, and leading to more aberrant behaviour. Students with LD are poorly accepted by peers and consistently exhibit deficiencies in social behaviour. Learning disabilities not only interfere with academic tasks, but also interfere with all stages of psychosocial development, as well as peer and family interactions (Gaur, 2000). Such studies have created interest in the area of emotional and behaviour dimensions of children with LD. Intervention for LD Children with LD may experience difficulties in one or several of the academic areas such as reading, writing, spelling and arithmetic. While some of these students excel in areas other than the problem area, others may be slow in acquiring the required skills. It has now been understood that there is no single cause for this difficulty. Rozario, Oommen and Hirisave (2002) have talked about four categories of problems namely

i) Academic discrepancy
ii) Cognitive problems;
iii) Biological correlates and

iv) Social emotional problems.

Children with LD often exhibit behavioural and emotional problems. Intervention programs should also involve behavioural and cognitive behavioural approaches (Graham & Harris, 2003; Hirisave, 2002). Research supports the effectiveness of behavioural intervention for a variety of behaviours including attention problems. Contingency contracting, peer-mediated interventions, token economy, time-out, positive reinforcement and other reductive procedures based on reinforcement have been successfully utilized to deal with such problems (Abramowitz & O'Leary, 1991; Brown, 1986). Cognitive behavioural instructions involving self-monitoring are found to be a very effective strategy.

Subtypes of LD

The subtypes of LD are as follows:

1. Disorders of listening and oral expression.
2. Disorders of reading: (Dyslexia)
3. Disorders of written language: (Dysgraphia)
4. Mathematical disabilities: (Dyscalculia)

- ***Reading Disability (Dyslexia)***

Reading disabilities are commonly known as “dyslexia”. Children with reading disability read slowly, often reversing letters, words or numbers. Additionally the child may have poor vocabulary and poor comprehension. Approximately 4-10% children in a normal class room and about10-15% of the general school going population experience difficulty in reading(Mann & Brady, 1988; Mercer & Mercer, 1985).

- ***Mathematics Disability (Dyscalculia)***

Students’ with mathematics disability experience difficulty mastering arithmetic and mathematical skills and concepts. These children face difficulty in a variety of tasks such as sorting objects by size, matching objects, understanding the language of arithmetic, grasping concepts of rational counting etc. In higher grade levels children with LD may have trouble with computational skills, fractions, decimals and measurement. These children may also experience difficulty in performing basic calculations such as addition, subtraction, multiplication and division (Hirisave, Oommen & Kapur, 2002). Mathematics disabilities are understood to be a result of incomplete concept formation (Ashlock, 1982).

- ***Writing disabilities (Dysgraphia)***

Writing disabilities have been noted consistently in children with learning disabilities (Johnson & Myklebust, 1967; Myers &Hammill,1976). According to these researchers there are three main types of difficulties inwritten language:

(a) Disorders in visual-motor integration.

(b) Disorders in revisualization

(c) Deficiencies in formulation and syntax.

Disorders in visual-motor integration (handwriting difficulties) are viewed as a result of the fact that the student cannot transducer visual information to the motor system (Johnson & Myklebust, 1967). The child has great difficulty writing, or copying letters, words, and numbers. This type of disability is called Dysgraphia. Disorders in re-visualization (spelling disorders) according to Johnson and Myklebust (1967) may occur in students, who can speak, read, and copy with a fairdegree of competence but who have visual memory problems. There are degrees ofrevisualization difficulties, ranging from total inability to re-visualize to partial inability. The degree of inability is important in order to recommend appropriate remedial activities. Disorders of deficiencies in formulation and syntax (written expression) may be seen only after the student has developed some elementary level of reading and spelling skills. Deficiencies in handwriting skills of many learning disabled students are; the result of never actually learning to write legibly because of more basic learning deficits. In addition to difficulties generated in simply interpreting such handwriting, it often has related effects in spelling and reading. Although difficulty in writing (e.g. particularly poor handwriting or copying ability or inability to remember letter sequences in common words) may appear as early as the first grade, disorder of written expression is seldom diagnosed before the end of the first grade because sufficient formal writing instruction has usually not occurred until this point in most school settings. The disorder is usually apparent by second grade. Disorder of written expression may occasionally be seen in older children or adults, and little is known about its long-term prognosis (APA,1994).

Signs and symptoms of writing disability

1. May have illegible printing and cursive writing (despite appropriate time and attention given the task)

2. Shows inconsistencies: mixtures of print and cursive, upper and lower case, or irregular sizes, shapes or slant of letters

3. Has unfinished words or letters, omitted words
4. Inconsistent spacing between words and letters
5. Exhibits strange wrist, body or paper position
6. Has difficulty pre-visualizing letter formation
7. Copying or writing is slow
8. Shows poor spatial planning on paper
9. Has cramped or unusual grip/may complain of sore hand
10. Has great difficulty thinking and writing at the same time (taking notes, creative writing)

Assessment

There are two broad categories involved in the process of assessment of writing. The first one is the performance of the students on the copy written passage and the second is written expression. Both these areas have to be assessed at the age and grade appropriate levels. Writing may be assessed by formal or informal methods.

- ***Informal Assessment***

Many skills deficiencies can be individually assessed through various informal, teacher made tests. Direct observation of written language skills will provide the teacher with exacting data in knowing precisely what a child can and cannot do in this area. The teacher should be particularly observant of the followings:

1. Consistent difficulty in copying or re-visualizing specific letters
2. Patterns of linguistic errors in the spelling of specific words.
3. Misapplication of various spelling rules.
4. Pencil grasp and body posture problems
5. Consistent syntactical or grammatical errors in the written expression of ideas.
6. Difficulties with the writing form (manuscript or cursive) being used.

Written expression is an important part of writing skills. Teachers often focus on the basic mechanical skills such as handwriting, grammar and spelling while assessing students writing skills. Mykelbust (1965) proposed that to assess a student's ability in written expression, the students should be asked to write a story. This story should be evaluated for productivity, correctness and meaning. The number of words, sentences and words per sentence can be as indicators for productivity, capitals, word usage, word endings and punctuation may be used to compute correctness while the story content may be appraised for meaning. Potato (1994) talked about the development of idea or ideation, which is the

essence of the expression of ideas and feelings in written expression. This method assessed student's performance on five areas: audience awareness, organization, content development, cohesiveness and unity.

- ***Formal Assessment***

According to Beninger (1994), assessment of writing can be either product oriented or process oriented. Product oriented measures typically involve the use norm-referenced psychometric instruments measuring IQ achievement discrepancy and a standard battery. The wide range achievement test revised (WRAT-R), Woodcock Johnson psycho-educational battery-revised (WJR) and the test of written language (TOWL) are examples of product oriented tools (Schrank, 2006). Product oriented tools measure the product of writing and the process oriented approach measures the writing process contributing to the product (Beminger, Mizokawa & Bragg 1991). Tools for the formal assessment of writing disabilities can be classified into three groups: handwriting, spelling, and written expression. Most of the tools for assessing handwriting focus on legibility, quality of handwriting product, slant, proportionality of letter, spacing of letters and relative legibility of letter formation (Graham 1986). The Copy Test of the Monroe Sherman Test (1986) assesses handwriting fluency by assessing the ability to produce legible words under time constraints.

Remediation of Writing Disabilities

According to Graham and Harris (1997), intervention for writing difficulties should focus on both prevention and remediation. The instruction should be tailor made for the specific needs of each child. These authors also suggest the use of formal as well as informal methods to address the writing problems of children with writing disabilities (Graham, 1998). As mentioned earlier, writing problems may occur in any of the three areas of the writing process, handwriting, spelling, or composition and hence writing instruction should be designed with a balance between meaning, process and form (Graham & Harris, 1997a, 1997b). Writing is essential for learning to read and spell for most students with LD, hence its importance has been stressed upon. According to Beminger et al (1992) the process of learning to write should focus on the two components of the writing process, the low-level and the high level. Examples of low-level processes comprise creating letter representations in memory, motor planning, and motor production, and that of high level process comprise strategies for planning, generating language at the sentence and text levels, and reviewing and revising written text. Instructional methods should be aimed toward improving skills at both these levels (Beminger et al).Often children with LD face difficulties with the basic

mechanics of writing such as handwriting and spelling (Beminger et al. 1998). These mechanical skills are very important for the writing quality and fluency. Hence, it is of potential value and it is essential for professionals/educators to pay close attention to the handwriting of students with LD. The most common and the most primary remedial procedure involve the mastery of the manuscript or the cursive writing. Graham and Miller (1980) suggest a neutral procedure involving the use of manuscript in the initial stage and then gradually switching over to cursive method. Other methods for developing handwriting skillsare tracing folds, drawing roads, tracing with copy paper, dot-to-dot- figures and reversals. Beminger et al (1997) used handwriting treatments which evaluated five alternatives for learning how to write lower case letters of the alphabet. This method also proved to be beneficial for the compositional fluency of the children with writing difficulties. Graham, Harris and Larsen (2001) have emphasized the role of early intervention in the prevention and remediation of writing problems. If low level skills such as the mechanics of writing become automatic, the children have resources such as memory free for tasks requiring high level skills (Beminger et al 1997).

Neurodevelopment training can also be used for handwriting problems. This training involves activities designed to increase hand strength, kinaesthetic awareness in the finger and hand, dexterity, eye-hand coordination and motor planning. Several methods for improving spelling skills have been developed by researchers from the US. Strategies using one or more of the sensory modalities such as the multi-sensory fading model, or activities such as the sensory modality preference, the cover and write method or spelling games could be used for students with spelling difficulties. In the past few years, technology has been used to improve the writing skill sof children with LD. These tools help the children by minimizing the writing difficulties and by providing them with additional support to overcome other difficulties. Tools such as the word processor, provides help in planning, revision, formatting, spell check, style, alleviates fine motor difficulties via typing and also provides motivation. Remedial program should also involve methods to enhance motivation, and reinforcements. According to Graham and Harris, it is important to identify and address academic as well as non-academic roadblocks in children with LD. Maladaptive behaviours such as low tolerance to failure, attention difficulties, impulsivity, disorganization, inflexibility lack of persistence, frequent absences have been observed in children with LD (Harris 1990). Intervention can be designed to address the maladaptive attributions of children with LD (Graham, Harris& Sexton 1998). Children can also be taught to self-monitor their daily behaviour by

maintaining a daily report and by plotting graphs. Graham et al (1994) observed a50% increase in on-task behaviour and in the written compositions of children with LD.

Conclusion& Suggestions

Students with LD are poorly accepted by peers and consistently exhibit deficiencies in social behaviour. Learning disabilities not only interfere with academic tasks, but also interfere with all stages of psychosocial development, as well as peer and family interactions. Now a day no. professionals such as psychiatrists, psychologists, special educators, medical professionals, researchers are working for the benefit of LD students with the help of Medical institutions, University departments, SCERTs, Non-government organizations (NGO). So it is not only in the hands of the government but also in the hands of every healthy citizen in the nation. Epidemiological research on learning disability is sporadic and scattered in nature. Need more incentives from government side. It also revealed that there is a lack of studies where intervention has been designed for LD and the associated problems. Reformation is needed in large scale, i.e. removal of third language and higher mathematics from the curriculum along with allocation of extra time during examinations and provision of a scribe for students with writing disabilities.

Most of the parents are unaware of the characteristics of disabilities. Government should have to conduct programme district wise to provide proper information dissemination regarding LD. In USA most of the intervention strategies for students with learning disabilities can be easily applied within the classroom by the teacher. While in India Teachers are unaware about the disabilities and its remedies. In India, estimate for children with academic difficulties in different settings range from 9 to 39%. But no set up has been made so far to deal with LD. Most of stakeholders are unaware about inclusive classroom. Classrooms are unprivileged. A typical classroom comprises between 50-100 students supervised by a single teacher. Teachers are often inadequately trained and equipped. Often teachers themselves have a lack of understanding about learning disabilities. Under these conditions, identification and remediation of learning disabilities becomes a problem. Even if they are identified, there are not enough trained professionals to cater to all the children with learning disabilities in India. Besides that most of the work conducted in India is concentrated in the urban schools where English is the medium of instruction and rural areas are exempted. The assessment tools and remedial procedures are often influenced by the western practice.

These tools do not take into account certain cultural dimensions such as bilingualism/multilingualism, literacy support at home.

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