

LEARNING DISABILITIES

Prof. Manjeet Dhariwal

Mehar Chand College of Education

Bhanopli

Imagine a child having important ideas and need to communicate then, but one who is unable to express them .

Abstract

Learning disability is an emerging dynamic and expanding field. Children with learning disabilities are found across all ages, socio- Economic level and races . The problem of these children may range from mild to severe . There is still a great deal of debate about what is meant by the term ' Learning disabilities ' . Learning disabilities may affect individual different and different stages of life early childhood , the elementary school years , adolescence and adulthood. In some cases , other problems also coexist with learning disability. First, Having a learning disability means that the brain "processes" information differently from what most other student do . Certain kinds of information get stuck or lost while travelling through the brain. Only in recent years have the problems related to learning disabilities been acknowledged and begun to receive acceptance and recognition. Yet this shows that the number of children is not new. Observations in school shows that the number of children with learning disability in a class room considerable. Dropping out is usually attribute to economic reason, but impact, if these children do not receive special intervention , it is apprehended that a large number of drop - outs could be children with learning disabilities.

Objectives

- * Understand the concept of learning disabilities .
- * Define learning disabilities
- * Characteristics of learning disabled children .
- * Perceive the three phases of origin of the field of learning disabilities .

The field of learning disabilities is the newest challenging sub area of the broader field of special education. It was a parents meeting in New York city in the early 1960s that this term was proposed by Samuel Kirk. In those days such a child was likely to be referred to as being minimally disabled. Hence this label learning disabilities was most welcome to parents who had anticipated a diagnosis of mental retardation. It is learning disabilities that are the most vague and mystifying when compared to other major handicapping or disabling conditions with the possible exception of emotional disturbances. It is only at a later that learning disabilities were officially recognized than other handicapping conditions and so there is still great deal of debate as to what is meant by the term learning disabilities. There are many reasons why the field of learning disabilities is receiving considerable public attention. In this text we are taking broad view of learning disabled. As we explore the field of learning disabilities a challenging sub area of the broader field of special education.

History of Learning disability:- According to some reviewer of the History of learning disabilities the work of Frans Joseph Gall , a Viennese physician is the earliest that might be readily traced to what we presently call learning disabilities. In 1802 Gall published a description of a theoretical construct in which he related specific brain activities to identifiable parts of the brain. Gall had worked with adults who had brain injuries resulting from a variety of causes. These patient developed language disorders consequent to the known injuries So, Gall believed that he could relate specific areas of damage to what we now call aphasia. he delineated how patients whose brain was damaged were unable to express feelings and ideas in spoken language later on , Gall became connected with phrenology a system that allegedly could predict personal characteristics through knowledge of the shape and character or protuberances of the skull because of which he was soon discredited. Gall loss of direct influence on further scientific developments in the search to relate specific areas of the brain to particular types of brain dysfunction did not deter his followers such as Bouillaud from carrying on his original intentions forward Broca proposed the idea that the functions of the two hemispheres of the brain were in many ways separate and different.

The advent of Twentieth Century witnessed increasing concern with a person might be able to learn and how to teach him with the elements of overall mental ability that were intact or functional. In 1926, Head concluded loss of their abilities like mechanized aptitude and disorders in language are based on integrated function higher on

the neural hierarchy than motor or sensory abilities and thus cannot necessarily be classified as motor, visual or auditory disorders. Gall early efforts formed parallel in other efforts that became part of the base of in another strand of the developing field of learning disabilities. William Dember Sziues accounts of contributions relating the recognition of visual perceptual problems as early as 1801 in visual perception. It evinces that research in visual perception was under way throughout most of the nineteenth century. In 1885 James Hinshelwood a Scottish ophthalmologist expounded visual perceptual problems. Which he termed ' word blindness ' His reports of severe defects in visual memory documented severe reading difficulty in children with normal intelligence. James Kerr, a physician and W.P Margan, an ophthalmologist who brought to light cases of persons with severe reading problems despite normal intelligence. This paved way for substantiating another type of learning problems, which was later recognized as a learning disability.

The establishment of a maternal Advisory Committee on Handicapped children marked the second major event in the evaluation of a definition of learning disabilities. the first National Advisory Committee on Handicapped Children was headed by Samuel Kirk the first annual report of the committee was presented on January 31, 1968. The committee made ten recommendations including a definition. The committee suggested the following definition.

Children with special learning disabilities exhibit a disorder in one or more of the basic psychological processes in valued in understanding or in using spoken or written languages. Those may be manifested in disorders of listening, thinking, talking, reading, writing, speaking or arithmetic. They include conditions, which have been referred to as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, developmental aphasia etc. They do not include learning problems that are due primarily to visual hearing or motor handicaps to mental retardation, emotional disturbance or to environmental disadvantage. The third step in the development of national definition in relation to public law 94-142, the education for all Handicapped children Act of 1975 in U.S.A. The Bureau of education for the Handicapped was instructed to find a better definition and to expound precisely how children can be identified as learning disabled. The bureau made an extensive effort to develop more specific definition. Ultimately after months of lack of consensus the following definition and criteria were published in the Federal Register.

"Specific learning disability means a disorder more or more of the basic psychological processes in valued in understanding or in using language, spoken or written which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell or to do mathematical Calculation. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction dyslexia and developmental aphasia. The term does not include children who have learning problem which are primarily the result of visual, hearing or motor handicaps or mental retardation of emotional disturbance or of environmental, culturally or economic disadvantage".

Criteria for developing the Existence of a specific learning Disability

(a) A team may determine that a child has a specific learning disability if :-

(1) The child does not achieve commensurate with his or her age and ability levels in one or more of the areas listed in paragraph (a) (2) of this section , when provided with learning experiences appropriate for the child's age and ability levels; and

(2) The team finds that a child has a severe discrepancy between achievement and intellectualability in one or more of the following areas :

- (i) Oral expression
- (ii) Listening Comprehension
- (iii) Written expression
- (iv) Basic reading Skill
- (v) Reading Comprehension
- (vi) Mathematics Calculation
- (vii) Mathematics reasoning

(b) The team may not identify a child as having a specific learning disability the sever discrepancy between ability and achievement is primarily the result if :

- (i) A visual , hearing or motor handicaps
- (ii) Mental retardation
- (iii) Emotional disturbance
- (iv) Environmental, cultural or economic disadvantage

The committee proposed the following definition that does, in the opinion of many educators, provide for more clarity and less confusion :

Learning disabilities is a generic term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning and mathematical abilities. These disorders are intrinsic to the individual and presumed to be due to central nervous system dysfunction. Even though a Learning disability may occur concomitantly with other handicapping conditions (such as sensory impairment, mental retardation, social and emotional disturbance) or environmental influences (such as cultural differences, insufficient or inappropriate instruction, psychogenic factors), it is not the result of those condition or influences.

There is no end to the problem and vagueness and ambiguity with definitions of learning disabilities, at least no solution, acceptable to a majority of advocates for the learning disabled.

From the above discussion it can be seen that learning disabilities are formally defined in many ways. However they usually contain three essential elements . They are a discrepancy clause, an exclusion clause and an etiology clause .

The discrepancy clause asserts that there is a significant disparity between aspects of specific functioning and general ability. The second exclusion clause states that the disparity is not due to intellectual, physical, emotional or environmental problems. The etiology and usually is not part of the educational assessment or remedial programme commended for the students (Crealock and Kronick, 1993)The difference between areas of functioning is the most frequent clause used in determining whether a student has a learning disability . When an individual evinces a great disparity between those areas of functioning in which he or she does well and those areas in which he or she experience considerable difficulty, he or she may be deemed to have a learning disability .Individuals of any intellectual level can have a learning disability, although most countries define a learning disabled as having a near normal, normal or above normal intelligence . Persons with other handicaps also can have a learning disability and they can be considered as multiply handicapped . Learning disability can affect one or more of a person's intelligence language , spatial temporal , visual , mathematics , knowledge of one's body and what it can do , social or practical . Crealock and Kronick (1993) state that even when one's learning disability appears to be confined to a specific area of intelligence, frequently there are some problems in other areas of intellect also .

Need and Importance : Only in recent years have the problems related to learning disabilities been acknowledged and begun to receive acceptance and recognition . yet this condition in children is not new. There have always been children struggle to cope with the demands of their home, school and society. what is now is that finally the problem are being acknowledged. Today learning disability from other childhood disorders, Although, this is a group of disorders which affects the lives of million of children, it has not yet received legal recognition. The persons with Disabilities Act, 1995 refers to mental illness , therefore, schools are at present not abliged to provide special resources to children with learning disabilities .

Observation in schools shows that the number of children with learning disabilities in a classroom is considerable. Dropping out is usually attributed to economic reasons, but , infact , if these children do not receive special interventure it is apprehended that a large number of drop out could be children with learning disabilities .

Causes of Learning Disabilities

There is no single or a primary cause of learning disabilities. Infact, the causes are many. There are people who view that the problem lies in the child's environment and situation out side the child (e.g. inapprppriate instruction, lack of appropriate reinforcement etc.) There are people who view that problem dies with in child. Both view points are true to some extent. The definition of learning disability implies that the problem is related to the central nervous system (neurological deficit). The neurological deficit could be the result of genetic , prenatal, perinatal and postnatal factors.

Genetic factors:- Is learning disability hereditary ? There is someevidence to suggest that learning disability and hyper activity tend to run in families. Morrison and start (1981) fund that 2% of a group of hyperactive children had at least one parent who was hyperactive. Only 5% non hyperactive children had a hyperactive parent. So genetic basis of learning of genetic factors does not helps in providing remedial assistant to the learning disabled child.

Prenatal Cause :- When the child is in mother's womb, certain maternal factors can influence the development of the fetus. The neurological deficit in the child may be brought absent if the mother (i) uses drugs (ii) consumes excessive alcohol , (iii) suffers from malmnutrition (iv) suffers from rubella (German measles) or (v) suffers from severe sickness and fever to the point being physically immobile .

Perinatal Causes :- (i) Perinatal factors refers to those that occur at birth , (ii) injury to the child's brain as he passes through the birth canal or immediately after birth , and (iii) any other method of delivery , causing injury to the brain cells of the child .

Postnatal Causes:-

Biological or Biochemical Causes:-The factors in this category responsible for learning disabilities include (i) Hypoglycemia or low blood sugar , (ii) nutritional deficits (iii) food allergies , particularly to sugar , eggs . wheat and chocolate , (iv) hyperactivity caused by certain substances in the diet such as artificial coloring or certain chemicals found in fruits and (v) use of certain types of drugs .

Environmental Causes:- Several environmental factors are linked to learning disabilities, Any factor that can cause neurological problems can cause a learning disability. These factors include (I) accidents or other types of traumata the brain ,(ii) mgestion of certain substances (e.g. lead panel) and (iii) exposure to emissions from huorescent lights and television .

Development Causes:- Learning disability may be caused by lags in neurological development (not loss of neurological function). This is called maturational lag. This theoretic model presumes that there has been some delay in the development of certain central nervous system components and in many cases, this may be overcome through natural development , sometime in the future .

The development of listening, speaking, reading and writing skills for the learning disabled children is slow. Researchers believe that learning disabled children take longer to go through the process of myelinization (i.e, the myelin, which is a protective cover for the nervous system and vehicle for electrochemical communication develop slowly in the learning disabled children.

Medical Causes:-This regales such as diet or allergies might be called medical theories.

Prominent Models:-

- (i) A specific - area brain defect model
- (ii) Perceptual - motor model
- (iii) The language development model
- (iv) Information processing model
- (v) learning strategy deficit model
- (vi) Behavioral theory model
- (vii) Met cognitive Model

(viii) other Models

(i) A Specific - Area Brain Defect Model :- Learning disabilities are associated with specific area brain defects . There are adequate studies which provide evidence for this fact. These studies may be classified on the basis of their focus as shown below.

(a) studies of localization of function

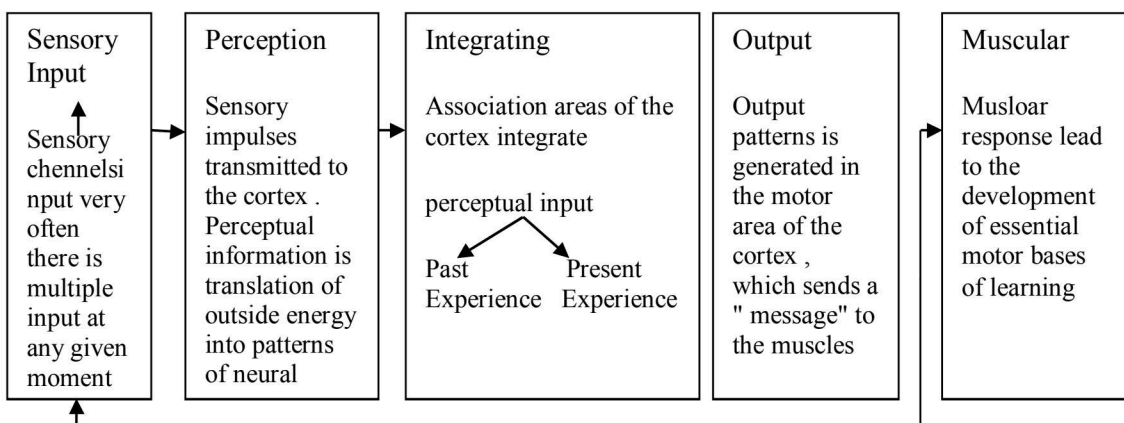
(b) Neuroimaging studies

(c) Post mortem studies

(d) Electrophysiology studies

The Perceptual-Motor Model :- The perceptual -motor Model is a more complex model that relates learning disabilities to intermediate problems, which are in turn caused by brain dysfunction. Perceptual disturbances or abnormalities are caused by brain injury or brain dysfunction. Hal lagan And Cruickshank have discussed all epidotic factors in detail. In their discussion they note that there is one large group of students, whose learning disorders are based on perceptual psychopathology which inturn is imbedded in neurological dysfunction. The intermediate effects brought about by brain dysfunction /defect are visual perception disorder and language disorder. The find effect brought absent by visual perception disorder intermediate effect is hyperactive and severe reading disability. Language disorder culinates is severe reading disability and and other learning difficulties specific area brain defect model in which the final effect is severe reading disability and the perceptual - motor model of learning disabilities relate to each other and to more recent conceptualisations . This perceptual disorder model has been supported by many researches.

Perceptual- Motor Learning Theory



Continuous feedback is provided to the input end of the system

The perceptual motor process, when working properly, leads to normal learning; when working improperly; it may lead to learning disabilities.

Intervention Strategies for Attention Problem

Attention is the process of focusing on certain stimuli while screening out others. Attention problems among students with learning disabilities are apparently quite common. Numerous teachers report attention problems among students with learning disabilities and researchers have feurly probed in to the attention problems of learning disabled students. Parents and teachers have long complained that children with learning disabilities do not pay attention. Also, research supports the suggestion that these children have difficulty with attention. Most clinical research to date on the attention problems of students with learning disabilities has focused on only two aspects of attention sustained attention and selective attention, sustained attention refers to the degree to which attention is maintained over time where as selective attention ree to the ability to identity important stimuli and important aspects of a stimulus and disregard other stimulus in the environment.

A diagnosis of attention problems requires a multi method behavioural assessment. This assessment is necessary for making appropriate administrative decisions as well as designing intervention strategies. In addition to formal academic assessment and school based assessment; there are multiple measures such as teacher rating scales, socio metry measures; and direct observation in both according to the level in which the disability is experienced first at initial level i.e. perception, it will lead to disabilities at other levels also. Hence it is very essential for all teacher to ascertain the level in which the learning disabilities is first experienced.

Is the deficiency one in which the sensations reading the brain are meaningful or non meaningful? Is the problem basically verbal or nonverbal? For example is the basic problem in auditory reception or visual imagery? Is it one of abstracting conceptualizing, that is of gaming meaning? This information will facilitate effective use of appropriate remedial techniques.

- which of the subject matter areas does this disability affect most? Is it primarily a reading or an arithmetic problem, or does it also show up in art and physical education? This is very important not only in planning intervention programmers but also in providing guidance regarding course work, life planning, and so forth.

- What are the effects both present and potential , of the disability on the development of social maturity ? If the goal of education includes development of independent , responsible , self- supporting citizens , this dimension is of prime importance .

Unlike perceptual - motor based programmers, which were considerably criticized, remedied programmers based on the language development theory have not been the target of mordant criticism and charges of ineffectiveness. The theoretic model and remedial suggestions provided by Johnson and My klebust can be used in parallel with other models as well. Further they have much in common with information processing models.

Information Processing Models:- Information processing theory is a cognitive theory of learning that describes the processing , storage and retrieval of knowledge form the mind. Information processing mode; is that most influential model in cognitive psychology to date the teacger, taking notes when appropriate only 30% of the time. Then they were given self monitoring treatment in which they were given a recording sheet with the printed direction to record their attending behaviours whenever they thought of it by marking at when they were on Task and a when they were not . During the next phase self recording was continued with the addition of the condition of praise by the teacher for good study habits. After that self recording was withdrawn and the praise was continued. The study was concluded with a return to initial phase. The obtained result established that their attention behaviours improved during treatment phase. Also the frequency of these behaviours remained at relatively high levels when self monitoring and preise were with drawn.

Medically Based Interventions:- Medical sciences can play a major role if the attention problems are due to hyperactivity . If a student is hyperactive , he or she is more likely to have difficulty with learning . when there are attention problems , educational remedies interventions should be applied . If these intervention strategies do not alleviate the problem , a drug intervention maybe attempted.

Type of Drug Interventions:-

Offer the medication chosen for hyperactivity and attention problem is one in the ampheta mine family . The three stimulant medications most often prescribed for attention deficit disorder are cylert , Ritalen and Dexedrime . These medications vary in lerins of their effective in less than half an hour but cylert takes up to for weeks . There is a striking contrast in the duration of action also . Cylert is Taken once a day and its effect

are long lasting where s the effect of Ritalin and Dexedrine last for three to five hours only . Therefore , it becomes necessary for a second doest be administered at School . It poses administrative problems .

Effectiveness of Drug Intervention:- Numeric studies have shown that medically based intervention are effective in controlling problem behaviours in the classroom . Some research indicates that drug intervention improves academic classwork as well as behaviours . However , parents and teachers are often more interested in performance on standardized achievement tasks , where the impact of drug interventions has been only modest , Further research is needed in which longitudinal studies are use to track children for a number of years to determine whatever they think , learn and socially function morw effectively with medication , not whether they are quick more attentive or productive in one particular situation.

Combined Approach:- Medication treatment by itself is seldom sufficient for dealing effectively with the total set of symptoms associated with attention difficulties . In the majority of cases , the children do not take medication treatment at home for attention difficulties . As a result the home - work hour becomes a currently being thought about is stored . Information may enter short - term memory from sensory registers or from the third basic component of memory system , long term memory . It is not possible to assess the exact rate of decay of information as this component is controlled by the subject short term memory retains information in auditory verbal linguistic repretation . For example , while recalling letters , the child may sub vocally rehearse a letter by voicing the letter .

Working Memory :- Working memory is viewed as a dynamic and active system because it simultaneously focuseson both processing and storage of information and is considered term memory is partly under stood as a component of a limited capacity system from accumulating and holding segments of information in order as they arrive during a listening or reading task . Material in short term memory is retained if it is rehearsed . In contrast , working memory is concerned with the interpretation of and integrating of information with previously stored information occasion for a specific response to occurs while the consequences alters the portability that the behavior will mcrease or decrease in the future . Behavioural intervention strategies include direct instruction and errorless learning.

Numerous teachers report attention problems among students with learning disabilities and researches have fairly worked into the attention problem of learning

disabled children . A diagnosis of attention problems requires a multi method for making behavioural assessment. This assessment is necessary for making appropriate administrative decisions as well as designing intervention strategies. After making proper assessment of the attention problems an appropriate course of action should be devised. Intervention Strategies for circumventing attention problems include behavioral intervention, cognitive behavioral intervention and medically based intervention

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