Chapter 1

INTRODUCTION

Children are precious. Childhood is a time of remarkable physical, cognitive, social and emotional development. Infant enter the world with a limited range of skill and abilities. Watching a child develop new motor, cognitive, language and skills is a source of wonder for parents and caregivers. What happens or doesn’t happen to children in the earliest years of their lives is of critical important, both to their immediate well-being and to their future. If children received the best start in their earliest years of life, they are more likely to have grown healthily developed language and learning capacities, gone to school and led a productive rewarding life. Every child must be ensured the best start in life their future and indeed the future of their communities, nations and the whole world depends on it.

When children have issues and crises, these issues and crises affects parents just as much, if not more, than it affects them. When it seems like something is not quit right with child perhaps they seems more afraid than other kids, or they seems to get a lot angrier than their playmates do over certain things odd or off behaviour can be experienced as terrifying.

The present research work will be worthwhile for learning disable children. The present research will be useful as this study throw light on psyche of these children. This will be help to add in the main stream of society and hence the outcomes of this work will have a path for progressive nation.

All the learning disorder or disabilities create obstacles to achieve the academic goals of students. It creates the disability to perceive the things. It is essential to diagnose the problem in early stage and appoint the experts to resolve it. Following are the important facts which express the importance of the concept.

• Discover the problem of adults say and know about their feeling and journeys, before and after high school
• collect the information about results of young adults in following areas- emotional well-being, community involvement, social engagement, family
relations, postsecondary education, employment, independent living and life satisfaction

• observe the behaviors, experiences and characteristics that expect or are obstacles to positive outcomes for young adults during this time of transition
• get the idea or perception about the types of services and supports young adults are required to ensure a successful transition to adult life
• Pinpoint the opportunities and experiences that have shaped their post–high school outcomes, and use these self-reported data to inform

1.1 Introduction

Learning disability is a classification including several areas of functioning in which a person has difficulty learning in a typical manner, usually caused by an unknown factor or factors. While learning disability and learning disorder are often used interchangeably, the two differ. Learning disability is when a person has significant learning problems in an academic area. These problems, however, are not enough to warrant an official diagnosis. Learning disorder, on the other hand, is an official clinical diagnosis, whereby the individual meets certain criteria, as determined by a professional (psychologist, pediatrician, etc.) The difference is in degree, frequency, and intensity of reported symptoms and problems, and thus the two should not be confused.

The unknown factor is the disorder that affects the brain's ability to receive and process information. This disorder can make it problematic for a person to learn as quickly or in the same way as someone who is not affected by a learning disability. People with a learning disability have trouble performing specific types of skills or completing tasks if left to figure things out by themselves or if taught in conventional ways.

In the 1980s, the National Joint Committee on Learning Disabilities (NJCLD) defines the term learning disability as:

A heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning or 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 (e.g. sensory
impairment, mental retardation, social and emotional disturbance) or environmental influences (e.g. cultural differences, insufficient/inappropriate instruction, psychogenic factors) it is not the direct result of those conditions or influences.

The NJCLD used the term to indicate a discrepancy between a child’s apparent capacity to learn and his or her level of achievement.

The 2002 LD Roundtable produced the following definition:

"Concept of LD: Strong converging evidence supports the validity of the concept of specific learning disabilities (SLD). This evidence is particularly impressive because it converges across different indicators and methodologies. The central concept of SLD involves disorders of learning and cognition that are intrinsic to the individual. SLD are specific in the sense that these disorders each significantly affect a relatively narrow range of academic and performance outcomes. SLD may occur in combination with other disabling conditions, but they are not due primarily to other conditions, such as mental retardation, behavioral disturbance, lack of opportunities to learn, or primary sensory deficits."

Children or adolescents may be diagnosed with a Learning Disabilities when their achievement on individually administered, standardized tests in reading, mathematics, or written expression is significantly below what is expected for their age, schooling, or level of intelligence. The umbrella term "Learning Disabilities" includes Reading Disabilities, Disabilities of Written Expression, and Mathematics Disabilities.

Estimates of prevalence rates for the learning Disabilities vary widely, ranging between 2 and 10% of all children. Currently, more than of all children who receive special education services have been diagnosed with some sort of learning disability. Males appear to be affected by learning Disabilities more frequently than females.

These days, learning Disabilities are thought to be neurobiological in nature, meaning they are problems that begin as a result of a brain development problem. Learning Disabilities are not caused by other kinds of developmental delays, speech and hearing problems, or by learning a second language as a child.
Deficits in any area of information processing can manifest in a variety of specific learning disabilities. It is possible for an individual to have more than one of these difficulties. This is referred to as co-morbidity or co-occurrence of learning disabilities.

- Individuals with LD have difficulties with academic achievement and progress.
- Discrepancies exist between a person’s potential for learning and what that person actually learns.
- Individuals with LD show an uneven pattern of development (language development, physical development, academic development, and/or perceptual development).
- Learning problems are not due to environmental disadvantage.
- Learning problems are not due to mental retardation or emotional disturbance.
- Learning disabilities can affect one’s ability to read, write, speak, spell, compute math, and reason. They also can affect a person’s attention, memory, coordination, social skills, and emotional maturity.
- Individuals with LD have normal intelligence, or are sometimes even intellectually gifted.
- Individuals with LD have differing capabilities, with difficulties in certain academic areas but not in others.
- Learning disabilities have an effect on either input (the brain’s ability to process incoming information) or output (the person’s ability to use information in practical skills, such as reading, math, spelling, etc.).

1.2 Meaning of Learning Disabilities

Learning Disabilities Association of Ontario, (2001) Learning Disabilities” refers to a variety of disorders that affect the acquisition, retention, understanding, organization or use of verbal and/or non-verbal information. These disorders result from impairments in one or more psychological processes related to learning, in combination with otherwise average abilities essential for thinking and reasoning. Learning disabilities are specific not global impairments and as such are distinct from intellectual disabilities. Learning disabilities range in severity and invariably interfere with the acquisition and use of one or more of the following important skills:
• Oral language (e.g., listening, speaking, understanding)
• Reading (e.g., decoding, comprehension)
• Written language (e.g., spelling, written expression)
• Mathematics (e.g., computation, problem solving)

A disorder in one or more of the basic psychological processes involved in understanding or in using spoken or written language, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations. Learning disabilities include such conditions as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia and developmental aphasia. Learning disabilities do not include learning problems that are primarily the result of visual, hearing, or motor disabilities; mental retardation; or environmental, cultural or economic disadvantage.

**IDEA Definition** According to the Individuals with Disabilities Educational Improvement Act (IDEA)

“A Specific learning disability” means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may evident itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations. 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 problems which are primarily the result of visual, hearing, or motor handicaps, of mental retardation, or emotional disturbance, or of environmental, cultural, or economic disadvantage.

1.2.1 Explanation of Definition

“... a disorder ... basic psychological processes”:

There is an assumption that some type of disorder of perception, language, or cognition (e.g., memory) prevents the student from learning.

“... involved in understanding or in using language, spoken or written”:

A Specific Learning Disability is a language-based disability, meaning that the disability has to do with difficulty with words and rules of sounds that make up words and words to make up sentences. It includes deficient skills in oral expression and listening comprehension
“... that may manifest itself in an imperfect ability to... read... or do mathematical calculations...”": Specific learning disabilities affect the academic performance of the student.

“... does not include learning problems that are primarily the result of visual, hearing. ...": The exclusion component asserts that the specific learning disability is not caused by these factors. However, the word ‘primarily’ suggests that learning disabilities can coexist with those conditions.

Johnson and Morasky, 1980 Learning disabilities were identified as early as 1896 when a British ophthalmologist named Morgan wrote in a journal about what he said was ‘word blindness.’ By 1937, formal clinical studies of the effects of brain dysfunction on learning behavior were being done by Samuel Orton, who was a pioneer in researching problems of children with developmental language difficulties. The field of study has grown steadily since, with many major contributions being made to the body of research in the past two decades.

The National Learning Disabilities Association (LDA) defines a learning disability as a chronic condition of neurological origin. This dysfunction impedes learning, interfering with processing necessary for learning in the visual, auditory, motor and sensory systems. The manifestation and severity of a learning disability is variable, but most individuals experience problems with positive self image, educational achievement, vocational choices, social interaction and time management.

Learning disabilities can interfere with a student meeting his or her intellectual and life potential. Learning disabilities result in unexpected academic underachievement. Learning disabilities may impact the acquisition, organization, understanding, retention and/or use of information.

Learning disabilities are complex and go beyond the stereotypical perceptions of the disorder as simply reading difficulties, or letter reversals. They vary considerably, both in terms of the functions they impact and the severity of the impact experienced. The appropriate accommodations depend upon the individual’s strengths as well as his/her specific difficulties.

1.3 Common Features

Although there is substantial assortment among individuals with learning disabilities, some common characteristics of learning disabilities has been identified to recognize a Student with a Learning Disability.
1.4 Signs of a Learning Disability

Here is no single sign that shows a person has a learning disability. Experts look for a noticeable difference between how well a child does in school and how well he or she could do, given his or her intelligence or ability. There are also certain clues that may mean a child has a learning disability. We’ve listed a few below. Most relate to elementary school tasks, because learning disabilities tend to be identified in elementary school. A child probably won’t show all of these signs, or even most of
them. However, if a child shows a number of these problems, then parents and the teacher should consider the possibility that the child has a learning disability.

When a child has a learning disability, he or she may exhibit the following characteristics:

- Have trouble learning the alphabet, rhyming words, or matching letters to their sounds
- Make many mistakes when reading aloud, and repeat and pause often
- Not understand what he or she reads
- Have real trouble with spelling
- Have very messy handwriting or hold a pencil awkwardly
- Struggle to express ideas in writing
- Learn language late and have a limited vocabulary
- Have trouble remembering the sounds that letters make, or in hearing slight differences between words
- Have trouble understanding jokes, comic strips, and sarcasm
- Have trouble following directions
- Mispronounce words or use a wrong word that sounds similar
- Have trouble organizing what he or she wants to say or not be able to think of the word needed for writing or conversation
- Not follow the social rules of conversation, such as taking turns, and may stand too close to the listener
- Confuse math symbols and misread numbers
- Not be able to retell a story in order (what happened first, second, third)
- Not know where to begin a task or how to go on from there.

Children learn in very different ways and at different rates. When a child has a language or reading problem, the reason might be simple to understand and deal with, or it might be complicated and require expert help. Often, children may just need
more time to develop their language skills, and it is natural for children to experience some ups and downs in their learning patterns.

There is no one sign that shows that a person has a learning disability, but there are some signs and patterns that may indicate a learning disability if your child exhibits them frequently and/or over an extended period of time. A child probably won't show all or even most of these signs, but if your child shows a number of these signs, parents and teachers should consider having the child evaluated for a learning disability. These signs include:

1.4.1 In Preschool

- Trouble understanding what is being said
- Delay in speech development
- Slow vocabulary growth
- Difficulty in learning numbers alphabet, days of the week, colors, and shapes
- Difficulty with rhyming words
- Poor coordination and uneven motor development, such as delays in learning to sit, walk, color, or use scissors
- Difficulty following directions or routines
- Frequent restlessness and distraction
- Trouble interacting with peers

1.4.2 In Elementary School

- Problems connecting letters and sounds
- Problems forming letters and numbers
- Difficulty understanding what she reads
- Many mistakes when reading aloud, and frequent pauses
- Problems with basic spelling and grammar
- Makes consistent reading and spelling errors including letter reversals (b/d), inversions (m/w), transpositions (felt/left), and substitutions (house/home)
- Transposes number sequences and confuses arithmetic signs (+, -, x, /, =)
- Difficulties learning math skills and doing math calculations
- Difficulty with remembering facts
- Difficulty losing, forgetting, or organizing materials (notebook, binder, papers), information, and/or concepts
• Difficulty understanding oral instructions and or expressing oneself verbally
• Difficulty learning about time
• Difficulty gripping a pencil and very messy handwriting
• Poor coordination, frequent accidents
• Trouble following directions.

1.4.3 In Middle or High School

Some types of LD are not apparent until middle school or high school. With increased responsibilities and more complex work, students may avoid using certain skills and new areas of weakness may become apparent such as:

• Difficulty with spelling and letter sequence (left / felt)
• Trouble with handwriting and pencil grip
• Difficulty with grade-level reading comprehension, written language or math skills
• Difficulty planning time and assignments, especially long-term assignments with multiple parts
• Difficulty understanding discussions or expressing thoughts when speaking
• Trouble interacting with peers and making friends
• Difficulty organizing personal space and school materials
• Difficulty organizing thoughts when writing or speaking
• Avoids reading tasks, reading out loud or writing assignments
• Trouble adjusting to new settings

1.5 Types of Learning Disabilities

Dyslexia is one of several distinct learning disabilities. It is a specific language-based disorder characterized by difficulties in single word decoding, usually reflecting insufficient phonological processing abilities. The difficulties in single word decoding are often unexpected in relation to age and other cognitive and academic abilities; they are not the result of generalized developmental disability or sensory impairment. Dyslexia is manifested by variable difficulty with different forms of language, often including, in addition to problems reading, a conspicuous problem with acquiring proficiency in writing and spelling. Simply stated, dyslexia is a type of reading disorder in which the student fails to recognize and comprehend written words. Dyslexia is a severe impairment in the ability to read, despite normal
intelligence, normal opportunities to read, and an adequate home environment. Although the precise organic cause of dyslexia is unknown, it is generally thought that this problem results from difficulties with phonological awareness—a lack of understanding of the rules that govern the correspondence between specific sounds and certain letters that make up words (Lyon & Moats, 1997; cited in Gargiulo, 2004, p. 216). In other words, letter-sound recognition is impaired. Various types of reading disorders have been recently cited by the American Academy of Special Education Professionals’ Educator’s Diagnostic Manual of Disabilities and Disorders (2007). Listed below are the reading disorders most frequently seen in children with dyslexia:

- **Direct Dyslexia.** Direct dyslexia refers to the ability of the individual to read words aloud correctly, yet not comprehend what he or she has just read.

- **Dyseidesia Dyslexia.** Such an affected individuals will have poor sight-word vocabularies and will rely on using time consuming word attack skills (a phonetic approach) to decode many words. As a result, students with this condition will read laboriously. Decoding becomes inaccurate for many phonetically irregular words, log for laugh. Characteristic spelling errors include phonetic equivalents for irregular words, such as rede for ready.

- **Dysidegetic Dyslexia.** Children with the dyseidetic type of dyslexia are able to sound out individual letters phonetically but have trouble identifying patterns of letters in groups. Their spelling tends to be phonetic even when incorrect (laf for laugh). Children in this group have deficits in vision and memory of letters and word shapes, making it difficult for them to develop a sight vocabulary. However, they have the ability to acquire adequate phonetic skills.

- **Dyslexia with Dysgraphia (Deep Dyslexia).** With this condition, a person has a problem in writing letters and words, grasping word-meanings, integrating the sounds of letters, and in pronouncing unfamiliar and, sometimes, even familiar words. People in this category face the biggest challenge and need our closest attention for educational and career planning.

- **Dyslexia without Dysgraphia (Pure Dyslexia).** This disorder occurs when a person has problems reading but not writing. Some students with pure dyslexia have trouble doing written arithmetic because they have to read the text and the numbers, but may not have any problem doing spoken arithmetic. Dyslexia without dysgraphia may never be identified, because, to confuse matters, a person
may have nearly normal oral language and his or her writing and oral spelling may be virtually unimpaired.

- **Dysnemkinesia Dyslexia.** Dysnemkinesia involves minimal dysfunction of the area of the motor cortex involved in letter formation. Individuals with this disorder can be characteristically distinguished by their frequent letter reversals, such as d for b, as in doy for boy.

- **Dysnomia.** A type of dyslexia specifically associated with difficulties in naming and naming speed.

- **Dysphonetic Dyslexia.** Dysphonic readers have difficulty relating letters to sounds, so their spelling is totally chaotic. They are able to recognize words they have memorized but cannot sound out new ones to figure out what they are. They may be able to read near the appropriate grade level but are poor spellers. Dysphonetic dyslexia is viewed as a disability in associating symbols with sounds. The misspellings typical of this disorder are phonetically inaccurate. The misreading are substitutions based on small clues, and are also semantic.

- **Literal Dyslexia (Letter Blindness).** With this condition, a person has difficulty identifying letters, matching upper case letters with lowercase, naming letters, or matching sounds with the corresponding letters. Here, a person may read individual letters of the word but not the word itself, or read a word, but not understand the meaning of the word. Some people with literal dyslexia may read words partially. For example, a person may read the word lice as ice, or like. The person may realize that these words are incorrect, but cannot read the words correctly. Some people with literal dyslexia do better by moving their finger along the outline of a word, or by tracing the letters in the air.

- **Mixed Reading Disability Dyslexia (Alexic Reading Disability).** Children with mixed reading disabilities have both the dyseidetic and dysphonic types of reading disorder. This subtype combines the deficit of the first two groups. This person may have disability in both sight vocabulary and phonetic skills. People with this form of dyslexia are usually unable to read or spell.

- **Neglect Dyslexia.** This condition occurs when a person neglects the left or the right side of words, a problem particularly highlighted in reading long words. For example, if asked to read straight, he or she may read it as own. Given a word such as alphabetically, persons with this particular form of dyslexia will miss some of the first few letters. For example, they may read it simply as
alphabetically. There may be a problem with compound words. For example, a compound word such as cowboy may be read partially, as cow or boy.

- **Phonological Dyslexia.** This disorder occurs when an individual has difficulty in converting letters to their sounds. They can read words that are already familiar to them, but have trouble reading unfamiliar or novel words. They also have difficulty in reading a non-word such as tord. They may misread this non-word as a real word that looks similar. They sometime also misread actual words as other ones that look similar. The word shut may pose this particular problem, much to a listener’s dismay.

- **Primary Dyslexia.** This is a dysfunction of, rather than damage to, the left side of the brain (cerebral cortex) and does not change with maturity. Individuals with this type are rarely able to read above a fourth-grade level and may struggle with reading, spelling, and writing as adults. Primary dyslexia is hereditary and is found more often in boys than in girls.

- **Semantic Dyslexia.** This occurs when a person distorts the meaning of a word or incorrectly reads a word because of the confusion in the meaning of the given word. People with semantic dyslexia may say an antonym, a synonym, or a subordinate of a word instead of the word proper. For example, they may misread dog as cat or fox. They may misread twist as twisted, or buy as bought. Some have trouble reading function words such as of, an, not, and and.

- **Spelling Dyslexia.** This occurs when a person has problems reading all types of words and sometimes has trouble identifying individual letters. Their reading is extremely slow and hesitant, particularly on long words. While a normal reader takes about 30 milliseconds for reading each additional letter, a spelling dyslexic may take about a second to do the same. Some dyslexics tend to read words one letter at a time, even if the words are short and familiar.

- **Surface Dyslexia.** This condition occurs when a person can read words phonetically but has problems with whole word recognition (i.e., yacht = yachet).

- **Trauma Dyslexia.** This condition usually occurs after brain trauma or injury to the area of the brain that controls reading and writing. This type of dyslexia is rarely diagnosed in today’s school-age population because they will often receive a classification in special education of Traumatic Brain Injury (TBI) rather than learning disability.
• **Visual Dyslexia.** People with this condition usually cannot learn words as a whole component. There are problems with visual discrimination, memory synthesis, and sequencing of words. Reversal of words or letters when reading, writing, and spelling is common. It is important to identify students with dyslexia or other severe reading disabilities early, before they fall far behind their peers in word-recognition skills.

Students who appear to be learning letter-names, sounds, and sight words at a significantly slower rate than their classmates are at a risk for developing later reading problems. And yet, despite the enormous problems children with dyslexia face, the general consensus among researchers is that they can improve. When the diagnosis of dyslexia is made in the first two grades, more than 80% of the children are brought up to grade level. However, if the diagnosis is not made until the fifth grade, only 10 to 15% are helped (Kirk et al., 2003). Finally, it is critical to remember that not all children with learning disabilities suffer from dyslexia. The term dyslexia is overused in the popular press, which often gives an inaccurate impression that everyone with a reading or literacy problem suffers from dyslexia.

Reading Comprehension Deficits Students with learning disabilities often have difficulties with reading comprehension (Gersten, Williams, Fuchs, & Baker, 1998). These children often lack the skills required for understanding text and have poor word-analysis skills (Hunt & Marshall, 2005). Reading comprehension refers to a student’s ability to understand what he or she is reading. Some students with reading comprehension difficulties are able to read a passage so fluently that you might assume they were highly proficient readers. However, when they are asked questions about what they have read, they have little or no understanding of the words. Students with this problem sometimes are referred to as word callers (Friend, 2005). It is always necessary to assess not only decoding but also the ability to understand what is being decoded. According to Salvia and Ysseldyke (1998), there are six different types of reading comprehension skills:

• **Literal comprehension.** The student reads the paragraph or story and is then asked questions based on it.

• **Inferential comprehension.** The student reads a paragraph or story and must interpret what has been read.
• **Listening comprehension.** The student is read a paragraph or story by the examiner and is then asked questions about what the examiner has read.

• **Critical comprehension:** The student reads a paragraph or story and then analyzes, evaluates, or makes judgments about what he or she has read.

• **Affective comprehension:** The student reads a paragraph or story, and the examiner evaluates his or her emotional responses to the text.

• **Lexical comprehension:** The student reads a paragraph or story, and the examiner assesses his or her knowledge of vocabulary words.

Here are some common reading comprehension problems of children with LD:

• Difficulties recalling basic facts (unable to answer specific questions about a passage, such as What was the dog’s name in the story?)

• Difficulties recalling sequence (unable to tell the sequence of the story that was read)

• Difficulties recalling the main theme (unable to recall the main topic of the story)

• Problems with Word Recognition Students with learning disabilities often have difficulties with word recognition, which relates to the student’s ability with respect to sight vocabulary. According to Salvia and Ysseldyke (1998): A student learns the correct pronunciation of letters and words through a variety of experiences. The more exposure a student has to specific words and the more familiar those words become, the more readily he or she recognizes those words and is able to pronounce them correctly. (p. 464). In order to identify written words, we use a number of different kinds. Here are some of the most important word analysis skills:

• The ability to associate sounds with the various letters and letter combinations used to write them (phonetic analysis)

• Immediately recognizing and remembering words (sight-word reading)

• Using the surrounding text to help figure out a specific word (using context)

The skills listed above rely heavily on perception, selective attention, memory, and metacognitive skills. Thus, word recognition depends almost entirely on the cognitive skills that are most problematic for individuals with disabilities (Hunt & Marshall, 2005). According to Gargiulo (2004), here are common word recognition errors:

• Omissions. Omitting a word (Tom saw [a] cat.)
• Insertions. Inserting words (The dog ran [fast] after the cat.)
• Substitutions. Reversing letters in a word (no for on, was for saw)
• Mispronunciations. (Mister for miser)
• Transpositions. Reading words in the wrong order (She away ran instead of she ran away.)
• Unknown words. Hesitating for 5 seconds at words they cannot pronounce
• Slow choppy reading. Not recognizing words quickly enough (20 to 30 words per minute)

Dyscalculia

Dyscalculia Arithmetic involves recognizing numbers and symbols, memorizing facts, aligning numbers, and understanding abstract concepts such as place value and fractions. Any of these may be difficult for children with developmental arithmetic disorders, also called dyscalculia, which refers to selective impairment in mathematical thinking or in calculation skills (Fletcher & Forman, 1994). Problems with number or basic concepts are likely to show up early. Disabilities that appear in the later grades are more often tied to problems in reasoning. Various types of mathematical disorders have been cited by the American Academy of Special Education Professionals’ Educator’s Diagnostic Manual of Disabilities and Disorders (2007). Below are mathematical disorders frequently seen in children with dyscalculia.

• **Basic Number Fact Disorder.** Individuals with a Basic Number Fact Disorder have problems memorizing and retaining basic arithmetic facts, such as the answers to $8 - 2$, $7 + 1$, or $12 - 2$. It is not that individuals with Basic Number Fact Disorder do not remember any arithmetic facts, but rather they have problems memorizing as many facts as other children do. Furthermore, they appear to forget facts rather easily. These children may struggle for years, will count their fingers to add and subtract, and seem unable to develop efficient memory strategies on their own.

• **Calculation Disorder.** By definition, calculation is problem solving that involves numbers or quantities. The calculation of numbers often gives students with learning disabilities great difficulties. Inconsistent calculation can lead to numerous errors when doing math work. Students with calculation difficulties often perform the incorrect mathematical operations. For example,
when calculating $8 + 2$, they may respond 6, because they subtracted rather than added the two numbers.

- **Mathematical Abstraction Limitation Disorder.** Individuals with this disorder do not possess the ability to function at a high level of mathematical abstraction and as a result can only function on a concrete level of understanding. Individuals with this disorder tend to reach a ceiling in their ability to comprehend abstract math concepts.

- **Mathematical Estimation Disorder.** Children with dyscalculia seem to have an impaired sense of number size. This may affect tasks involving estimating numbers in a collection and comparing numbers.

- **Mathematical Language Disorder.** According to Garnett (1998), some students with LD are particularly hampered by the language aspects of math, resulting in confusion about terminology, difficulty following verbal explanations, and weak verbal skills for monitoring the steps of complex calculations. Teachers can help by slowing the pace of their delivery, maintaining normal timing of phrases, and giving information in discrete segments. Such slowed-down chunking of verbal information is important when asking questions, giving directions, presenting concepts, and offering explanations.

- **Mathematical Measurement Disorder.** Individuals with this disorder may have difficulty with concepts involving measurements, such as speed (miles per hour), temperature (energy per unit of mass), averages, and proportional measures.

- **Mathematical Navigation Disorder.** Children with this disorder can usually learn the sequence of counting words, but may have difficulty navigating back and forth, especially in twos, threes, or more.

- **Mathematical Organization Disorder.** Individuals with this disorder may have an inability to organize objects in a logical way. They may be unable to comprehend or mentally picture mechanical processes. They may lack big picture/whole picture thinking. They may have a poor ability to visualize the location of the numbers on the face of a clock, the geographical locations of states, countries, oceans, streets, and so on.

- **Mathematical Sequencing Disorder.** People with this disorder have trouble with sequence, including left/right orientation. They will read numbers out of
sequence and sometimes do operations backwards. They also become confused on the sequence of past or future events.

- **Symbolic Mathematical Operations Disorder.** Individuals with this disorder may find it especially difficult to translate between number words, where powers of ten are expressed by new names (ten, hundred, and thousand) and numerals (where powers of ten are expressed by the same numerals but in terms of place value).

- **Temporal/Monetary Math Disorder.** People with this disorder tend to have difficulties in topics relating to time, telling time, keeping track of time, estimating time, monetary concepts, and counting money. Older children may exhibit difficulties with money and credit and cannot do financial planning or budgeting (e.g., balancing a checkbook). Individuals may have fear of money and cash transactions and may be unable to mentally figure change due back, the amounts to pay for tips, taxes, and so forth.

- **Visual–Spatial Math Disorder.** Students with this disorder have disturbances in visual–spatial–motor organization, which may result in weak or missing understanding of concepts, very poor number sense, specific difficulty with pictorial representations, poorly controlled handwriting, and confused arrangements of numerals and signs on the page. Students with this disorder might have spatial problems and difficulty aligning numbers into proper columns.

- **Written Symbol System Disorder.** According to Garnett (2000), many younger children who have difficulty with elementary math actually bring to school a strong foundation of informal math understanding. They encounter trouble in connecting this knowledge base to the more formal procedures, language, and symbolic notation system of school math (Allardice & Ginsburg, 1983). The collision of their informal skills with school math is like a tuneful, rhythmic child experiencing written music as something different from what she already can do. In fact, it is quite a complex feat to map the new world of written math symbols onto the known world of quantities, actions and, at the same time, to learn the peculiar language we use to talk about arithmetic. Whether because of the reading requirement or the ability to understand the mathematical concepts captured in a problem, students with learning disabilities may be unable to sort critical extraneous information, to
recognize the correct computational procedure, or to determine whether the answer they obtain is reasonable (Jordan & Hanich, 2003). Mathematical difficulties are often major obstacles in the academic paths of students with LD and frequently continue to cause problems throughout high school. Mastery of fundamental quantitative concepts is vital to learning more abstract and complex mathematics, a requirement for youth with learning disabilities who are seeking to complete high school and attend colleges or universities (Cirino, Morris, & Morris, 2002; cited in Hardman et al., 2005). Further research on difficulties with mathematics and on effective instruction for students encountering such problems grows more important as such young people seek to achieve more challenging educational goals (p. 178). Given these difficulties, it is not surprising that 50% of students with learning disabilities have IEP goals in math. As with reading and writing, explicit, systematic instruction that provides guided meaningful practice with feedback usually improves the math performance of students with learning disabilities (Fuchs & Fuchs, 2001; cited in Heward, 2003).

Written expression deficits many individuals with LD exhibit deficits in written language (Hallahan, Kauffman, & Lloyd, 1999). Learning disabilities in the area of written expression are beginning to receive more recognition as a serious problem (Smith et al., 2004). Writing is a highly complex method of expression involving the integration of eye–hand, linguistic, and conceptual abilities. As a result, it is usually the last skill children master. Whereas reading is usually considered the receptive form of a graphic symbol system, writing is considered the expressive form of that system. The primary concern in the assessment of composition skills is the content of the student’s writing, not its form. The term written language refers to a variety of interrelated graphic skills.

- **Composition.** The ability to generate ideas and to express them in an acceptable grammar, while adhering to certain stylistic conventions
- **Spelling.** The ability to use letters to construct words in accordance with accepted usage National Association of Special Education Teachers NASET |
- **Handwriting.** The ability to execute physically the graphic marks necessary to produce legible compositions or messages (Hallahan et al., 1999)
The impact of written language problems increases with a student’s age because so many school assignments require a written product. Students with written language problems often exhibit the following characteristics:

- Feel overwhelmed by the idea of getting started
- Struggle to organize and use the mechanics of writing
- Struggle to develop their fluency
- Have difficulties spelling and constructing written products in a legible fashion
- Submit written work that is too brief.

Many students with difficulties with written language use a “retrieve-and-write” approach, in which they retrieve from immediate memory whatever seems appropriate and write it down. They seldom use the self-regulation and self-assessment strategies of competent writers: setting a goal or plan to guide their writing, organizing their ideas, drafting, self-assessing, and rewriting. As a result, they produce poorly organized compositions containing a few poorly developed ideas (Sexton, Harris, & Graham, 1998; cited in Heward, 2003). Handwriting Difficulties
Handwriting refers to the actual motor activity that is involved in writing. Most students are taught manuscript (printing) initially and then move to cursive writing (script) in later grades. Some educators advocate that only manuscript or only cursive should be taught. In truth, problems may appear among students using either system. Children’s writing changes as they mature. The focus of a youngster’s writing shifts from the process of writing (handwriting and spelling), to the written product (having written something), to communication with readers (getting across one’s message) (Hallahan et al., 1999, p. 396). Gargiulo (2004) notes that early on, pupils focus on becoming competent in mastering the mechanical aspects of composition—spelling and handwriting; in the later grades, they learn to organize and present their ideas in a lucid and logical fashion. Children with learning disabilities, however, lag behind their nondisabled peers. Investigators have observed that individuals with LD use less complex sentence structure, incorporate fewer ideas, produce poorly organized paragraphs, and write less complex stories (p. 219).

Dysgraphia. Dysgraphia, the learning disability associated with written expression, entails writing skills that fall substantially below those expected given the individual’s age, IQ, and education, such that academic achievement or activities of daily living
are significantly impaired. Dysgraphia is the inability to perform motor movement, in other words, extremely poor handwriting. It is associated with a neurological dysfunction.

**Agraphia** is an acquired disorder in which the ability to write and make patterns is impaired (Birsch, 1999; cited in Kirk et al., 2003).

Students’ handwriting problems can rise from any of the following conditions:

- A lack of fine motor coordination
- Failure to attend to task
- Inability to perceive and/or remember visual images accurately
- Inadequate handwriting instruction in the classroom

In general, students with dysgraphia often learn less from an assignment because they must focus on the mechanics of writing instead of on the content of their assignment (Turnbull et al., 2004). Three different types of writing disorders have been recently cited by the American Academy of Special Education Professionals’ Educator’s Diagnostic Manual of Disabilities and Disorders (2007). Below are the writing disorders most frequently seen in children with dysgraphia:

**Dyslexic Dysgraphia.** With this disorder, spontaneously written text is illegible, especially when the text is complex. Oral spelling is poor, but drawing and copying of written text are relatively normal. Finger-tapping speed (a measure of fine-motor speed) is normal.

**Motor Dysgraphia.** With this disorder, both spontaneously written and copied text may be illegible, oral spelling is normal, and drawing is usually problematic. Finger-tapping speed is abnormal.

**Spatial Dysgraphia.** Individuals with this disorder display illegible writing, whether spontaneously produced or copied. Oral spelling is normal. Finger-tapping speed is normal, but drawing is very problematic. Spelling Problems Spelling is the ability to use letters to construct words in accordance with accepted usage. Spelling ability is viewed by some teachers and school administrators equally with other academic skills. Being a poor speller does not necessarily mean that a child has a learning disorder. However, when poor spelling occurs with poor reading and/or arithmetic, then there is reason for concern. It appears that many of the learning skills required for good spelling are the same ones that enable students to become good readers. Learning to spell is a developmental process, and young children go through a number of stages as they begin to acquire written language skills. Writing begins in the
preschool years as young children observe and begin to imitate the act of writing. **Dysorthographia** is the learning disability associated with spelling. Individuals with this disorder have difficulties utilizing clues from several sources that aid in deciding on the correct spelling of a word. Marshall and Hunt (2005) note that many students with learning disabilities spell a word as if it were being approached for the first time, without reference to an image of the word held in memory. The difficulties students with LD have in learning and applying the rules of phonics, visualizing the word correctly, and evaluating spellings result in frequent misspellings, even as they become more adept at reading. It is not uncommon to find the same word spelled five or six different ways on the same paper, regardless of whether the student is in the fifth grade or college (e.g., ther, there, thare, and they’re for their). Analysis of Spelling Skills. Several questions should be addressed before one begins to analyze a child’s spelling abilities (Pierangelo & Giuliani, 2005). Does the child have sufficient mental ability to learn to spell? This information can be obtained from the school psychologist if an intellectual evaluation was administered. However, if no such test was administered, you may be able to find the results of a group school abilities index, which may be present in the child’s permanent folder. Are the child’s hearing, speech, and vision adequate? This information can be obtained through the permanent record folder, information in the nurse’s office, or informal screening procedures. What is the child’s general level of spelling ability according to teacher comments, past evaluations, or standardized tests? Teacher comments and observations about the child’s spelling history are very important to show patterns of disability. Also, look at standardized tests to see if patterns exist through the years on such tests. It is also important to look at these attributes:

- The child’s attitude toward spelling in the classroom
- The extent to which the child relies on a dictionary in the classroom
- The extent of spelling errors in classroom written work
- Any patterns of procrastination or avoidance of written work
- The student’s study habits and methods of work in the classroom
- The history of scores on classroom spelling tests
- Any observable handwriting difficulties

Any evidence of fatigue as a factor in the child’s spelling performance Spelling Errors Primarily Due to Auditory or Visual Channel Deficits. Certain
spelling errors may be evident in students with auditory channel deficits (Pierangelo & Giuliani, 2005).

**Auditory discrimination problems.** The child substitutes 't' for 'd' or 'sh' for 'ch' and/or confuses vowels; for example, spells bit as bet. Auditory acuity or discrimination problems. The child does not hear subtle differences in, nor discriminate between, sounds and often leaves vowels out of two-syllable words.

**Auditory–visual association.** The child uses a synonym such as house for home in spelling.

**Auditory–visual associative memory.** The child takes wild guesses with little or no relationship between the letters or words used and the spelling words dictated, such as spelling dog for home or writing pho for home. These spelling errors may be evident in students with certain visual channel deficits:

**Visual memory problems.** The child visualizes the beginning or the ending of words but omits the middle of the words; for example, spells happy for happy.

**Visual memory sequence.** The child gives the correct letters but in the wrong sequence, for example, writes the word the as teh or hte.

**Visual discrimination problems.** The child inverts letters, writing 'u' for 'n', 'm' for 'w'.

**Visual memory.** The child spells words phonetically that are non-phonetic in configuration, for example, tuff for tough.

In general, common spelling errors to look for in students with dysorthographia include the addition of unneeded letters, reversal of vowels, reversal of syllables, and the phonemic spelling of non-phonemic words. Fortunately, the writing and spelling skills of most students with LD can be improved through strategy instruction, frequent opportunities to practice writing, and systematic feedback (Heward, 2003).

Language deficits students with learning disabilities often have difficulties with the mechanical and social uses of language (Hallahan & Kauffman, 2003). Specific mechanical deficits difficulties are often present in the three different areas (Gargiulo, 2004).

**Syntax.** Rule systems that determine how words are organized into sentences

**Semantics.** The study of how individual sounds make up words.
Language deficits are found in the areas of oral expression and listening comprehension.

These two areas control our ability to communicate with others, and therefore a deficit in either or both can have a major impact on the quality of life of a child with a learning disability, as well as his or her life in education (Smith et al., 2004).

Studies have found that more than 60% of students with LD have some type of language disorder (Bryan, Bay, Lopez-Reyna, & Donahue, 1991). Oral Language Problems Students with LD frequently experience difficulties with oral expression—a problem that can affect both academic and social interactions. Common problems associated with oral language include the following:

- Choosing the appropriate word. Children with LD will often use a less appropriate word because the right word will not come to them.
- Understanding complex sentence structures
- Responding to questions
- Difficulties in retrieving words.

The response rate of children with learning disabilities may be slower than that of their nondisabled peers, and they may speak more slowly. Listening Comprehension Problems Listening problems can also be misinterpreted. A child with a disability in listening demonstrates that disability in a negative way, for example, by failing to follow directions or by appearing oppositional or unmotivated. A teacher’s careful observation and assessment of a student’s language ability is important for ensuring the student’s success (Smith et al., 2004)

1.6 Types of Learning Disorder

Arithmetic Disorder (Dyscalculia) is generally characterized by difficulty in learning or comprehending mathematics. It affects a person’s ability to understand and manipulate numbers or understand numbers themselves.

A student with arithmetic disorder might have difficulty with the follow:

- Organizing the problems on the page and keeping numbers lined up.
- Following through on multiple step calculations, such as long division.
- Transposing numbers accurately on paper or on to a calculator, such as turning into
• Distinguishing right from left.

• Using the mathematical calculation signs, confusing basic operations and facts applying logic but not accurately completing calculations.

• Understanding and solving word problems

• being hesitant, refusing or experiencing anxiety when asked to engage with mathematical concepts

• remembering and applying mathematical functions in various ways
  ▪ recalling math rules, formulas or sequences
  ▪ being able to perform an operation one day but not the next
  ▪ understanding abstract concepts like time and direction
  ▪ checking change, reading analog clocks, keeping score during games, budgeting, estimating
  ▪ remembering dance step sequences or rules for playing sports
  ▪ visualizing the face of a clock or places on a map
  ▪ recalling dates, addresses, schedules and sequences of past or future events.

1.6.1 Writing disorder

Writing Disorder (Dysgraphia) is generally characterized by distorted writing in spite of thorough instruction. A student with writing disorder might experience some of the following difficulties:

• inconsistent and sometimes illegible writing; e.g., mixing print and cursive, upper and lower case, irregular sizes, shapes or slant of letters

• Inconsistent positioning on the page, with respect to lines and margins

• Unfinished words or letters, omitted words and many spelling mistakes

• Fine motor difficulty, such as inability to reproduce letters or remembering motor patterns

• Inconsistent speed in writing, either extremely laboured or quick

• writing that doesn’t communicate at the same level as the student’s other language skills

• Odd grip, unusual wrist, body or paper position

• Pain or muscle spasms while writing
• Talking to self while writing, or carefully watching the hand while writing
• Refusal, reluctance or extreme stress when asked to complete a written task.

1.6.2 Reading Disorder

Reading disorders include problems with reading accuracy (i.e., identifying words), reading comprehension (i.e., understanding words), and reading speed. This disorder is more commonly known as "dyslexia". Despite common belief that the term "dyslexia" refers to reading or spelling words backwards, the term actually refers to any difficulty with words that is associated with a reading disorder. Reading disabilities occur in about 20% of school-aged children, and they are the most common type of learning disorder (occurring in 80% of all individuals with a learning disorder).

Reading disorders make it more difficult for children to thoroughly understand material they read. Children with reading disorders may have to read passages over and over in order to understand what they are reading. They may also stumble over or skip words or miss entire lines of text. They may exhibit problems in segmenting words and blending sounds, and difficulty associating sounds with letters.

Common indicators of reading disability include difficulty with phonemic awareness—the ability to break up words into their component sounds, and difficulty with matching letter combinations to specific sounds (sound-symbol correspondence).

Reading Disorder (Dyslexia) is generally characterized by difficulties with the alphabet, word recognition, decoding, spelling, and comprehension.

A student with reading disorder might have difficulty with the following:

• naming, learning the sequence of or printing the alphabet
• memorizing non-phonetic words
• reading words that cannot be translated into a mental picture (and, a, the, etc.)
• sound/symbol correspondence, or sequencing of letters to create a word
• Reading aloud without repeated mistakes and pauses
• comprehending reading material, grasp of vocabulary
• Reading numbers and confusing math symbols
• organizing what he or she wants to say verbally, or not being able to think of the word needed
• retelling a story in sequence of events
• finding a word in the dictionary, naming the days of the week and months of the year
• Understanding inferences, jokes or sarcasm.

1.6.3 Spelling Disorder

Spelling disorders (Dysorthographia) are generally characterized by difficulties with spelling. They stem from weak awareness or memory of language structures and letters in words.

A student with a spelling disorder might present some of the following difficulties, often in conjunction with poor skills in reading and/or arithmetic:

• Arbitrary misspellings, such as addition, omission and/or substitution of letters in words
• Reversal of vowels and/or syllables
• Slow, hesitant or poor written expression
• Errors in conjugation and grammar
• Phonetic spelling of non-phonetic words
• Misunderstanding the correspondence between sounds and letters.

1.6.4 Auditory Processing Disorder

Auditory processing disorder describes a variety of disorders that affect the way the brain processes or interprets what it hears even though the student might have adequate hearing.

A student with an auditory processing disorder might have difficulty with the following:

• listening, particularly where there is background noise or when attention is divided
• processing information if the speaker is speaking quickly
• understanding what is said
• recalling what they have heard or following a sequence of directions
• recognizing and interpreting distinct sounds or attributing meaning to sounds in words
• using phonemes incorrectly when speaking
• applying phonics, encoding (spelling) and decoding (sounding out) words
• reading comprehension, vocabulary and basic literacy.

1.6.5 Visual Processing Disorder

A visual perception disorder involves difficulty making sense of what is seen, even though vision is intact.

A student with visual processing disorder might find the following tasks challenging:

• recalling and using visual information, e.g. remembering the order or meaning of symbols, words or pictures
• differentiating colours, letters or numbers that are similar
• recognizing objects or parts of an object
• noting and comparing features of different items
• distinguishing a particular shape from its background and/or understanding how objects are positioned in relation to one another
• attending when there is competing visual information
• perceiving distances, depth or movement
• Accurately identifying information from books, pictures, charts, graphs and maps
• organizing essays with information from different sources into one cohesive document, or solving math problems
• writing within margins or on lines, or aligning numbers in math problems
• Fine motor tasks, such as writing or copying
• Tracking and reading with speed and precision.

1.6.6 Sensory Integration (or Processing) Disorder

Sensory Integration Disorder is associated with the ability to integrate information from the body’s sensory systems (visual input, auditory input, olfactory input, taste, tactile input, vestibular input (balance/movement), and proprioceptive input (position). Information from the senses is not interpreted in ways that it can be used efficiently by the brain.

A student with a sensory integration disorder might present some of the following difficulties:
• extremely over- or under-reactive to senses, such as touch, sound, light, smells or anything put into the mouth
• strong over- or under-responsiveness to movement: e.g. avoids movement or craves it, startles easily, seems clumsy, careless or very physical
• having a strong attraction to or dislike for getting messy
• knowing where one’s body is in space
• knowing how much physical pressure to apply to something
• unusually high or low activity level, or rapidly moving from one to the other
• calming oneself or unwinding
• social emotional problems, e.g. easily frustrated, tantrums, acting out, poor self concept,
• making smooth transitions
• being easily distracted
• carrying out small or large motor tasks
• determining physical characteristics of objects
• putting ideas into words, delays in speech/language development, articulation

1.6.7 Organizational Learning Disorder

An organizational learning disorder is a type of learning disability related to challenges with executive functions and frequently accompanies other learning disabilities. Organizational learning disorder might include difficulties in handling too much stimuli or information at one time, thinking in an orderly and logical way, distinguishing direction, or organizing materials and time.

A student with an organizational learning disorder might present some of the following difficulties:

• allocating or organizing time
• arranging, or locating the beginning, middle and end
• setting priorities, time management, estimating time
• following schedules and meeting deadlines
• solving problems in stages
• organizing desks or notebooks, finding materials
• settling down and functioning effectively when settings or expectations change
• remembering what they are required to do
• Drafting an outline or assembling materials for presentations.

1.6.8 Social Cue Disorder

Individuals with social cue disorder have difficulty behaving in an automatic way. Picking up on spoken and unspoken cues is a complex process. Information must be detected, processed, have meaning extracted; then a response must be formulated.

A student with social cue disorder might present some of the following difficulties:

• Poor impulse control and/or needs immediate gratification
• Illogical reasons for actions and/or little thought about logical consequences
• Inappropriate conclusions or goals, due to deficient reasoning ability
• Inability to interpret environmental and social cues: e.g. body language, pitch of voice, personal space and/or facial expressions
• trying too hard or inappropriately to be accepted socially
• being disruptive due to low tolerance for frustration
• Not understanding social conventions such as standing too close or turn taking.

1.6.9 Disabilities of Written Expression:

A Disorder of Written Expression (also called Dysgraphia) occurs when children have difficulties in writing, especially with handwriting, that interfere with academic achievement or with activities of daily living (e.g., writing grammatically correct sentences or paragraphs). This disorder commonly occurs in conjunction with Reading and/or Mathematics disabilities.

Children with this disabilities may have problems forming letters or grasping a pencil properly. They may write slowly, or complain that their writing hand is tired. They often have problems writing in cursive (script) and may prefer to print block letters instead. They may also have difficulties with spelling, grammar, punctuation, and capitalization.
Individuals with a diagnosis of a Disorder of Written Expression typically have a combination of difficulties in their abilities with written expression as evidenced by grammatical and punctuation errors within sentences, poor paragraph organization, multiple spelling errors, and excessively poor handwriting. A disorder in spelling or handwriting without other difficulties of written expression do not generally qualify for this diagnosis. If poor handwriting is due to an impairment in motor coordination, a diagnosis of Developmental Dyspraxia should be considered.

1.6.10 Mathematics Disabilities

A Mathematics Disability, also called Dyscalculia, refers to difficulties and underachievement in math, either with learning mathematical concepts or in retaining mathematical information (e.g., problems with writing numbers, arithmetic, visual aspects of math, the language of math, etc.).

A child with mathematics disabilities may have problems calculating the answers to math problems. They may skip problems or steps within problems. They may have difficulty in shifting between one mathematical operation and another. For instance, they may add when they should be subtracting or vice versa. They may misalign columns or rows of numbers or put decimals in the wrong place. There are many different types of Mathematics Disorders, so this is a global term that refers to all learning disabilities involving math. Disorders in this category range from mild to severe and occur in 6% to 8% of the population.

1.7 History of Learning Disability

The history of learning disabilities has been classified into five periods:

European Foundation Period (1800 to 1920);

U. S. Foundation Period (1920 to 1960);

Emergent Period (1960 to 1975);

Solidification Period (1975 to 1985); and

Turbulent Period (1985 to 2000).

1.7.1 European Foundation Period – (1800 to 1920)

During this period, two main lines of work were related to learning disabilities. Franz Joseph Gall explored the relationship between brain injury and
mental destruction through observations of brain-injured soldiers. Others contributed to localizing the areas of the brain associated with speech and language. Several discoveries had been occurred in the field of neurology, and significant decisive articles and books on reading disabilities were published.

Adolph Kussmaul acknowledged the concepts of “word/text blindness,” which originated birth to the idea of specific reading disability. John Hinshelwood and W. Pringle Morgan highlighted the heritability of reading disability.

1.7.2 U.S. Foundation Period (1920 to 1960)

The period was known as a foundation period. Samuel Orton was one of the first to introduce multisensory training for children with reading problems, an approach made famous by the Orton-Gillingham method for teaching reading particularly influential, introducing descriptions of and interventions for reading disabilities (RD). In 1920s clinicians and researchers in the United States began to take an interest in the work of the Europeans who had been studying brain-behavior relationships and children and adults with learning difficulties. The U.S. researchers focused their efforts on language and reading disabilities and Orton also emphasized on the fact that many of the students he worked with scored at average or above on the Stanford Binet IQ test, providing an empirical basis for earlier observations of this phenomenon. Samuel Kirk developed and refined an assessment approach for pinpointing specific learning disabilities in children, the Illinois Test of Psycholinguistic Abilities (ITPA).

1.7.3 Emergent Period (1960 to 1975)

During this period, learning disability initiated its emergence as a formal category. And the following events were appear (1) the term learning disabilities was introduced; (2) the federal government included learning disabilities on its agenda; (3) parents and professionals founded organizations for learning disabilities; and (4) educational programming for students with learning disabilities blossomed, with a particular focus on psychological processing and perceptual training. Samuel Kirk was the discoverer of the term learning disabilities. In 1963 he used this term to address the parents of “perceptually handicapped” children.

The organizations that arose were the Division for Children with Learning Disabilities of the Council for Exceptional Children (CEC) and the Association for
Children with Learning Disabilities (presently LDA). Federal interference was started in the early 1960s with 2 task forces. One composed primarily of medical professionals and another with primarily of educators.

In 1969 congress passed the act for The Children with Specific Learning Disabilities

In 1970, Public Law 91-230 combined the Education of the Handicapped Act with other programs on the education of children with disabilities. The USOE also introduced the strategies for educational models and technical assistance, the Child Service Demonstration Projects, and the Leadership Training Institute in Learning Disabilities. during this period, a number of remedial techniques were develop to address what researchers and educators supposed as visual and visual-motor disabilities. However, these were generally found to be ineffective in addressing the academic problems of LD students.

1.7.4 Solidification Period (1975 to 1985)

The period from about 1975 to 1985 was relatively constant as the field moved toward consensus on the definition of learning disabilities and the methods of identifying students with learning disabilities.

The Education for All Handicapped Children Act has been passed by congress in 1975, Public Law 94-142. It was also a period of extensive applied research, much of it financed by the U.S. Office of Education that resulted in empirically validated educational procedures for students with learning disabilities.

By the early 1970s, the definition of learning disabilities formulated in 1968 by the National Advisory Committee on Handicapped Children (NACHC) had become the most popular one among state departments of education.

In 1977, the federal government issued regulations regarding the recognition of students with learning disabilities that integrated the idea of an ability-achievement discrepancy. The remedial technique has disappointed to researcher and they move to developing educational methods for students with LD. A major impetus for this was the USOE’s funding of five research institutes focused on a variety of LD issues:

- Columbia University on information processing difficulties
University of Illinois at Chicago on social competence and attributions about success and failure
University of Kansas on educational interventions for adolescents
University of Minnesota on the decision-making process related to identification and on curriculum-based assessment
University of Virginia on children with LD

1.7.5 Turbulent Period (1985 to 2000)

During this period, the issue of defining LD has been further solidified. The research institutes’ continuing work has verified that students with learning disabilities are competent of learning task-appropriate strategies that facilitate them to do well in school.

In this period the phonological processing has led to great breakthroughs in knowledge about how children learn to read and what constitutes effective reading programs.

From 1976–77 to 1998–99, the number of students were identified as LD doubled to more than 2.8 million.

Further, enduring studies have sustained earlier outcomes that LD may be the result of neurological dysfunction and that heredity is drawn in many cases of LD. Tension and discord in the field have arisen from a concern that identification procedures not only are inconsistent, but also are resulting in the misidentification of too many minority students as LD.

Scores of LD students with reading disabilities may be underestimated because of their reading disabilities; the discrepancy approach makes it very difficult to identify children early enough for protective intrusions; and researchers were not able to distinguish between students with a discrepancy and students with low reading achievement who have no discrepancy. Another issue that has created discord in the field is the full inclusion movement. Parents of students with LD are fearful that their children are not receiving sufficient or appropriate Services when they return to regular classrooms.
Definitions of learning disabilities have evolved over time. These definitions have been attempts at describing a condition that had been labeled, among other terms, aphasia, neurologically impaired, Strauss Syndrome, and minimal brain dysfunction.

History suggests that the term learning disabilities originated with and became popularized by Dr. Samuel Kirk based on his writings in the early 1960s and comments that were made at the April 6, 1963 Conference on Exploration into Problems of the Perceptually Handicapped Child. His proposed label was “enthusiastically received and helped to unite the participants into an organization known as the Association for Children with Learning Disabilities, the forerunner of today’s Learning Disabilities Association” (Lerner, 2000).

I have used the term “learning disabilities” to describe “a group of children who have disorders in development in language, speech, reading, and associated communication skills needed for social interaction. In this group I do not include children who have sensory handicaps such as blindness or deafness, because we have methods of managing and training the deaf and the blind. I also exclude from this group children who have generalized mental retardation. (Kirk, 1963, p. 2)

During the latter part of the 1960s, there became greater awareness about learning disabilities, both from the general public and Congress. In response, the U.S. Office of Education was charged with creating a federal definition for what constituted a learning disability. Samuel Kirk chaired this committee. In 1968, the first annual report of the National Advisory Committee on Handicapped Children, headed by Dr. Kirk, wrote:

Children with special learning disabilities exhibit a disorder in one or more of the basic, psychological processes involved in understanding or in using spoken or written languages. These may be manifested in disorders of listening, thinking, talking, reading, writing, spelling, 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 which are due primarily to visual, hearing, or motor handicaps, to mental retardation, emotional disturbance, or to environmental disadvantage. (Special Education for Handicapped Children, 1968)
By the end of 1968, “specific learning disability” (abbreviated SLD or LD) became a federally designated category of special education (U.S. Office of Education, 1968), and in 1969, the Specific Learning Disabilities Act was enacted, Public Law 91-230. In 1975, Congress enacted P.L. 94-142, the Education for All Handicapped Children’s Act. Here, the definition of a learning disability was formalized for children in special education. Under P.L. 94-142, a specific learning disability was defined as follows.

... a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. However, learning disabilities do not include, “... learning problems that are primarily the result of visual, hearing, or motor disabilities, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage.

The continuance of the P.L. 94-142 definition in federal law prompted further analysis. In the 1980s, a coalition of parent and professional organizations, described as the National Joint Committee on Learning Disabilities (NJCLD), criticized the definition under P.L. 94-142 for including concepts that were unclear or difficult to use to identify children with learning disabilities. In response to the criticisms, the NJCLD proposed an alternative definition.

1.8 Identification of Learning Disabilities

Usually, a teacher or parent notices that a child is struggling to learn or is behind in class. An evaluation can be requested by the teacher or the parent. A comprehensive set of tests is given to see why the child has difficulty. The earlier a child gets tested, the more likely it is that a child can overcome a learning disability.

It is important for children who are learning a second language to be evaluated in their native language when possible so that a professional can determine whether a child's difficulties are due to a learning disability and or a problem learning the second language. If a child is misdiagnosed, she may end up in the wrong kind of class — for example, she may be placed in a special education class when she needs more English instruction, or vice versa.
1.9 The Effects of Learning Disability

Children or young people who have a general learning disability are aware of what goes on around them. However, their ability to understand and communicate may be limited, and they can find it hard to express themselves. Speech problems can make it even harder to make other people understand their feelings and needs.

For a parent, it can be distressing to find out that their child has a general learning disability. It may be hard for them and other members of the family to understand why the child is like this. It can also be hard to communicate with the learning disabled child, difficult to manage their behaviour and hard for other people to understand.

They can become frustrated and upset by their own limitations. When they compare themselves to other children, they can feel sad or angry and think badly of themselves. Learning disabilities affect many psychological aspects of their life like intelligence, attention, achievement, memory, creativity and mental health etc.

1.9.1 Academic Achievement :-

A comprehensive dictionary of psychology (Horace, 1988) defines achievement in three ways:

1. Success in bringing an effort to an desired end.
2. The degree or level of success attained in some specified area specially academic.
3. The end gaining the thing accomplished in some specified area specially academic.

According to Traverse (1984) the term achievement refers to any desirable learning. It encompasses enhancement, self actualization, self-improvement and some form of competitiveness. Good’s dictionary of education defines academic achievement as the knowledge attained or skill developed in the school subjects, usually designated by test scores or by marks assigned by teachers.

Academic achievement has always been considered to be a very important factor in life of an individual because of the assumption that good academic record over years to a large extent predicts future success of the person especially in field allied to academic ones. In this age of competition the academic record invariably
figures as the main basis of selection for admission to higher studies and entrance into jobs thereafter.

1.9.2 Intelligence

Intelligence has been defined in many different ways including, but not limited to, abstract thought, understanding, self-awareness, communication, reasoning, learning, having emotional knowledge, retaining, planning, and problem solving. Human intelligence, mental quality that consists of the abilities to learn from experience, adapt to new situations, understand and handle abstract concepts, and use knowledge to manipulate one’s environment.

Based on the definitions, intelligence is:

• Rational thought and reasoning
• The ability to act purposefully in an environment.
• The ability to deal with situations, in an effective manner, within an environment.
• Cognitive – Examples of cognitive ability: memory, perception, concept formation, problem solving, mental imagery, action, association, language and attention.
• The ability to learning from experience
• The ability to live and cope with the demands of daily life.

1.9.3 Creativity

From a psychological perspective, creativity has been defined as "the production of ideas and objects that are both novel or original and worthwhile or appropriate, that is, useful, attractive, meaningful or correct".

Creativity involves two aspects, creative behaviour and a dispositional creativity trait. Creative behaviour results in something that is "...novel, original, surprising, and unusual or unique... [with] some degree of social usefulness." To enable a person to behave in ways that result in a creative outcome, a dispositional trait of creativity is required. The psychological disposition towards creativity varies from individual to individual, with the propensity to creative behaviour falling on a continuum from little or no creativity through to extreme levels of creative behaviour.
Biological and psychological factors are thought to be important causal mechanisms in the creative process. Social aspects such as upbringing and general cultural inclinations must also have an influential role in the development of creativity. Therefore, those people that display creative tendencies exhibit traits that have been affected by genetic, cognitive/psychological, and social factors. Sutherland defines a trait as "any persistent characteristic of an organism, whether learned or inherited, and whether physical or mental".

1.9.4 Mental Health

The term mental health is often used loosely, but generally it means to convey the idea of psychological well-being, or absence of mental illness, merely in term of what is going in the mind.

Thus health is a broader concept includes physical, social and psychological health. Mental health has been reported as important factors influencing individual’s various behavior, activities, happiness and performance. Before the second half century, mental health was considered as the absence of mental disease but now it has been described in its more positive connotation not as the absence of mental health. Mental health has mentioned as the ability of person to balance one’s desires and aspiration, to cope life stress and to make psychological adjustment.

1.10 Conclusion

The present chapter deals with conceptual clarification of learning disability and their types. The present chapter also elaborates the effects of learning disabilities on academic achievement, intelligence, creativity and mental health. The next chapter deals with the review of literature.