Chapter 2

DYSLEXIA: AN OVERVIEW

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DYSLEXIA: AN OVERVIEW

The teaching methods found to be most successful with the Dyslexic child who has already started to fail, are also appropriate for small children receiving their first instruction in reading, writing and spelling in pre-school.

(Hornsby, 1989)

Every individual should be helped to develop fully according to his/her unique nature and needs. This concept is in harmony with the modern democratic ideals which seeks optimum development by providing suitable educational facilities to all children: the gifted, the emotionally, socially and educationally maladjusted and physically and intellectually handicapped. These children need to be systematically taught those skills for independent living which are learnt naturally by other children of their age.

It is known that disabilities, poverty, limited family support, cultural differences, language differences, ineffective teaching and lack of educational funding contributes to failures in learning in many of our school going children. These students share the unfortunate experience of low academic achievement that results from problems in receiving instruction, connecting new knowledge with prior knowledge to create new learning that is organised and stored in a meaningful way or recalling new information in such a way that it can be expressed or demonstrated at the appropriate time. Learning difficulties may be transient or non-transient in nature. The learning difficulties of students vary considerably. These students represent a heterogeneous group whose educational programmes must be planned on the basis of individual characteristics and needs. To plan an appropriate educational intervention programme, it is necessary to assess some of their learning characteristics.

Special education refers to instruction that is specifically designed to meet the needs of exceptional children. It is a specially designed instruction that meets the individual educational needs of a student with a disability or students who are gifted and talented and have special learning needs. The aim of special education is to facilitate optimal development, learning and life adjustment in exceptional individuals, which may not occur through the regular educational experiences available to people without disabilities.
There are children and adults whose learning problems consistently challenge the skills of special as well as general educators. They seem to have the ability to achieve but actually do not. School is obviously the most challenging event in the child’s life and since it is compulsory, it serves to evince in many children dramatic behaviour disorders. Reading and writing are the first scholastic achievements on which some of the children fail. In some of these children mental retardation from birth or early childhood may be the cause of their failure. In others, intelligence being normal, language problems, etc. may be unmasked when the child is confronted for the first time by the demanding tasks of schooling.

Learning disabilities is a general term that refers to 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, presumed to be due to central nervous system dysfunction, and may occur across the life span. It is important to stress from the outset that one must not confuse a learning disability (LD) with other handicapping conditions such as mental retardation, slow learning, hyperactivity, or emotional problems. The learning disabled individual has a unique set of characteristic which must be recognised for effective educational intervention to occur.

LD varies from person to person. One person with learning disabilities may not have the same kind of learning problems as another person with learning disabilities. One person may have trouble with reading and writing. Another person may have problems with understanding maths. Still another person may have trouble in each of these areas. Researchers think that LD is caused by differences in how a person's brain works and how it processes information. Children with learning disabilities are not "dumb" or "lazy." In fact, they usually have average or above average intelligence. Their brains just process information differently. There is no "cure" for LD. They are life-long. However, children with learning disabilities can be high achievers and can be taught ways to get around the LD. With the right help, children with LD can and do learn successfully.
Learning disabilities tend to be diagnosed when children reach school age. This is because school focuses on the areas that may be difficult for the child - reading, writing, math, listening, speaking, and reasoning. It's important to remember that a child's learning disabilities may need help at home as well as in school. Teachers and parents should notice that the child is not learning as expected. Parents can ask teachers for their child to be evaluated. With hard work and the proper help, such children can learn more easily and successfully. For school-aged children (including pre-schoolers), special education and related services are important sources of help. School staff can work with the child's parents to develop an Individualised Education Programme, or IEP. This document describes the child's unique needs. It also describes the special education services that will be provided to meet those needs. These services are provided at no cost to the child or family.

Supports or changes in the classroom (sometimes called accommodations) help most students with learning disabilities. Assistive technology can also help many students work around their learning disabilities. Assistive technology can range from "low-tech" equipment such as tape recorders to "high-tech" tools such as reading machines (which read books aloud) and voice recognition systems (which allow the student to "write" by talking to the computer).

The actual number of children who have a learning disability problem in India is difficult to assess because no national census has been taken. According to the National Council of Educational Research and Training (NCERT) in New Delhi, there has been no systematic collection of data and they follow the figures generally quoted by international agencies. Figures issued by American educators place the number of children having learning disability at 10 to 12% in schools within Delhi.

Very little attention is paid to the needs of the learning disabled students at the secondary and post-secondary level. In India, no specific services are offered to students entering university; although in the United States colleges develop programmes explicitly to meet the needs of learning disabled adults.
2.1 Specific Learning Disabilities

The Individuals with Disabilities Education Act (IDEA) is the federal law that guides how schools provide special education and related services to children with disabilities. The IDEA defines a specific learning disability as 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.

In 1997 the U.S. Office of education brought out the final definition which is currently in operation within the United States: “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 manifest 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, of emotional disturbance, or of environmental, cultural, or economic disadvantage” (Federal Register, 1997).


“Learning disability 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 difference, insufficient or inappropriate instruction, psychogenic factors), it is not the result of those conditions or influences” (NJCLD, 1981).
The NJCLD definition has several advantages over the Federal definition. It acknowledges that the disability may occur at any age. It deletes the phrase “basic psychological processes” and replaces it with the statement that the problems is “intrinsic” to the person and may “be due to central nervous system dysfunction”. It rejects ill-defined conditions (perceptual handicaps, minimal brain dysfunction) which have caused a great deal of controversy. It clarifies that a learning disability can occur with other handicaps.

The NJCLD discusses the following five constructs underlying the definition of specific learning disabilities.

- Learning disabilities are heterogeneous, both within and across individuals. Intra individual differences involve varied profiles of learning strength and need and/ or shifts across the life span within individuals, whereas inter individual differences involve different manifestations of learning disabilities for different individuals.

- Learning disabilities result in significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning and or mathematical skills. Such difficulties are evident when an individual’s appropriate levels of effort do not result in reasonable progress given the opportunity for effective educational instruction and with the recognition that all individuals learn at a different pace and with differing effort. Significant difficulty cannot be determined solely by a quantitative test score.

- Learning disabilities are intrinsic to the individual. They are presumed to be related to differences in central nervous system development. They do not disappear over time, but may range in expression and severity at different life stages.

- Learning disabilities may occur concomitantly with other disabilities that do not, by themselves, constitute a learning disability. For example, difficulty with self regulatory behaviours, social perception and social interactions may occur for many reasons. Some social interaction problems result from learning disabilities; others do not. Individuals with other disabilities, such as sensory impairments, ADHD, mental retardation, and serious emotional disturbance, may also have learning disabilities, but such conditions do not cause or constitute learning disabilities.
Learning disabilities are not caused by extrinsic influences. Inconsistent or insufficient instruction or a lack of instructional experience causes learning difficulties but not learning disabilities. However, individuals who have had inconsistent or insufficient instruction may also have learning disabilities. The challenge is to document the notion that inadequate or insufficient instruction is not the primary cause of a learning disability. Individuals from all cultural and linguistic backgrounds may also have learning disabilities, therefore assessments must be designed acknowledging this diversity in culture and language and examiners who test students from each background must be sensitive to such factors and use practices that are individualised and appropriate for each student.

2.2 Signs of Specific Learning Disability

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

2.3 Causes of Specific Learning Disabilities

The etiology of learning disability is a sensitive area of research because of the lack of an explicit cause and effect relationship. The causes of learning disability could be organised under organic, environmental and genetic.

**Organic causes**

LD arises because of Minimal Brain Dysfunction (MBD). The dysfunction occurs in central nervous system which consists of the brain and the spinal cord. The malfunctioning is not due to damage, but due to dysfunction which is only minimal. Minimal brain dysfunction arises due to (a) cerebral haemorrhage, cerebral disease because of high fever, head injury; (b) intrauterine environment, premature birth, anoxia, physical trauma (c) constitutional- genetic- neuro- chemical dysfunction. It must be noted that all brain dysfunctions are not associated with learning disability and all types of learning disability do not arise due to brain dysfunction.

Hypoglycemia or low blood sugar is a cause of learning problem. Any factor that can cause neurological damage can cause learning problems. Many Dyslexic children come from families with a history of lower blood pressure - adding weight to theories of a common cause of the disorder. One possibility is that Dyslexics have too much of a particular body chemical called phospholipid Platelet Activating Factor (PAF) blood vessel function.
**Genetic Causes**

Learning problems and hyperactivity run in families. Nearly 20% of hyperactive children had one parent hyperactive. Children with Turner’s syndrome have higher incidence of learning disabilities.

**Environmental Causes**

Maternal factors known to have a negative effect include the use of drugs, the consumption of alcohol and contraction of rubella. Complications during pregnancy such as anoxia (loss of Oxygen), birth injury causing brain damage, and children who received neo-natal intensive care subsequently become LD. Learning disability may be caused due to insufficient early experience and stimulation. It is also caused by poor or inadequate instruction.

**2.4 Criteria for determining the existence of a Specific Learning Disability**

A) A team may determine that a child has a Specific Learning Disability if:

- The child does not achieve commensurate with his or her age and ability levels, when provided with learning experiences appropriate for the child's age and ability levels; and
- The team finds that a child has a severe discrepancy between achievement and intellectual ability 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, or
  
  vii. Mathematics reasoning

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

- A visual, hearing, or motor handicaps
- Mental retardation
- Emotional disturbance, or
- Environmental, cultural, or economic disadvantage.
2.5 Types of Specific Learning Disabilities

Learning disability (LD) may occur in various forms such as reading disability, writing disability, communication and comprehension disability and numerical disability.

**Reading Disability (Dyslexia):**

Children suffering from reading disability are unable to read. There are two forms of this disability. In a mild form, the affected person has difficulty in reading, but in severe cases of the impairment, there is a total loss of the ability to read. This is sometimes also known as ‘Word Blindness’. Children with the mild form of the disability are already in the general classroom. If identified early, proper help can be given and integration with their normal peers is also easier. This severely affected child will need intensive remedial exercises.

**Writing Disability (Dysgraphia):**

The affected children are not able to write spontaneously. There are two forms of this impairment: the mild and severe. Children affected by the mild form have difficulty in learning to write legibly. They study in general schools. Their problems can be corrected if identified early and provided timely help. Those affected by the severe type of impairment can copy writing without distortion but they cannot write spontaneously. They are identified by their inability to learn to write. The severely affected children need remedial exercises and are thus hard to integrate in the academic areas. Problems may include fine-motor muscle control of the hands and/or processing difficulties. Sometimes occupational therapy is helpful. Most successful students with dysgraphia that does not respond to occupational therapy or extra writing can use a typewriter, computer, or verbal communication.

**Problems in Comprehending Communication:**

Children with this disability have a problem in communication through writing, speaking, or reading. Those affected by the mild form of this impairment have difficulty in understanding both the spoken and written words. The child finds it difficult to understand even signs and gestures. These children can be integrated if corrective measures are given in time. Otherwise, linguistic
problems of articulation and fluency may develop. The severely affected child is unable to understand speech and written material, nor can be learnt to speak, read and write. He/she is unable to communicate even through signs and gestures. Such children are difficult cases for integration. They need intensive remedial exercises.

**Problems of Numerical Ability (Dyscalculia):**

The affected child has problems in calculations, even simple arithmetic because of an inability to manipulate number relationships. Numerical inability is again of two kinds- mild and severe. Numerical problems seem difficult even if they are very simple for a normal child to do. Children with the mild form of this disability may already be studying in the general classroom. They are not easily identified at pre-primary levels. The disability becomes obvious when they start learning numbers and simple addition and subtraction, if identified at pre-primary levels. The disability becomes obvious when they start learning numbers and simple addition and subtraction. If identified early and with appropriate correction, they can study in the regular classes. If the problem is severe, the child will not be able to learn number symbols and their relationships. This is also termed as loss of arithmetic ability. The severe cases are difficult of integration and will require intensive remedial exercises.

**2.6 Dyslexia**

Reading is an integral part of education and everyday life. It appears to be a skill that can be acquired by people almost with effortless ease, if given the right opportunities. Reading is a two-way process involving both recognition of a word and understanding its meaning. Most teachers have a rather incomplete knowledge of the different elements that enter into the process of reading. Ignorance of the subject can damage the academic future of the Dyslexic reader and it is absolutely imperative that teachers become familiar with how to teach reading. Dyslexia is the most common learning disability in children that persists throughout life. The inability to read is probably the first indicator that there is something wrong with the child. A dyslexic child will read slowly, often reversing letters, word or numbers. The child may try to guess while reading, omitting or adding words not in the text. He/She may have a poor vocabulary and weak comprehension. The dyslexic reader fails to perceive and analyse
distinctive features automatically, overlooks the sequential features of a story which affects comprehension, and focuses less on meaning.

The severity of Dyslexia can vary from mild to severe. The sooner Dyslexia is treated, the more favourable the outcome; however, it is never too late for people with Dyslexia to learn to improve their language skills. Children with Dyslexia have difficulty in learning to read despite traditional instruction, at least average intelligence, and an adequate opportunity to learn. It is caused by impairment in the brain's ability to translate images received from the eyes or ears into understandable language. It does not result from vision or hearing problems. It is not due to mental retardation, brain damage, or a lack of intelligence.

Dyslexia can go undetected in the early grades of schooling. The child can become frustrated by the difficulty in learning to read, and other problems can arise that disguise Dyslexia. The child may show signs of depression and low self-esteem. Behaviour problems at home as well as at school are frequently seen. The child may become unmotivated and develop a dislike for studies. When parents are confronted with a child who is unable to read, they react with predictable dismay and bewilderment. Their tendency is to blame the school, the teachers or the syllabus for their child’s inability to read. When told their child could be Dyslexic, parents typically respond with “Oh no! Is this another new fashionable term you educators have coined to make money”. Worse, many parents think Dyslexia to be some kind of mental retardation and refuse to acknowledge the existence of a problem. However, Dyslexia or reading disability is a problem that is on the increase in India and its wide presence has to be acknowledged and dealt with. It might come as a comfort to parents to know that many famous persons have been Dyslexic: Edison; Cushing, the noted brain surgeon; Wilson; Einstein; Patton; Rodin, the famous painter, and Rockefeller are few of them.

2.6.1 Background

Dyslexia is a term coined by Berlin of Stuttgart, Germany in the year 1887. It is probably the most widely used term to describe a child who is unable to read. Other words frequently used are severe reading disabilities, primary reading disabilities, specific reading disabilities and word blindness. It has been estimated that of the children who go to school, 10 to 15% have some difficulty
in reading and 85 to 90% of all learning disabled children have reading problems. Boys with reading problems outnumber Girls at the surprising rate of 4 to 1. In fact, Dyslexia has become synonymous with learning disability to such an extent that it has been suggested to use Dyslexia as an umbrella term for all learning disabilities in general.

A great deal of research has been done, and numerous theories have been developed on the cause of dyslexia. In 1925, Orton a U.S. neuro-psychiatrist, was one of the first scientists to investigate Dyslexia. He thought the deficiency originated in the visual system. He concluded from his research that Dyslexia was the result of a failure of one of the two hemispheres of the brain to dominate language development. Galaburda a neuroscientist at Harvard Medical School and a world authority on brain anatomy, considers Dyslexia to be a problem that results from mistakes in brain development. Several areas in the higher cortex that over time specialise in language development may be abnormal.

Originally, researchers looked for one single cause of Dyslexia, but they now believe many factors may be involved. Some believe that Dyslexia is caused by either motor or visual defects, such as difficulties in eye tracking, directional scanning, or eye movement. Both visual problems and a lack of cerebral dominance are still considered by many to be valid causes of Dyslexia. Other researchers believe that Dyslexia is caused by alternations in specific parts of the brain. Recent evidence shows that there is a lag in the brain’s maturation and a high degree of left-handedness in people with Dyslexia, which may indicate differences in brain function. Still other researchers have theorised that disorders in the structure of the brain may be a factor. This was not an accepted theory until recently when postmortem examinations show characteristic disorders of the brain. Although there is an ongoing debate about this theory, some researchers believe it may have some validity. Some experts believe that Dyslexia can be attributed to methods of teaching. For example they criticise the method of teaching reading by using the whole language approach and claim that students with Dyslexia can learn to read by using the phonetic approach. Other experts believe that reading should be taught using a combination of phonics and the whole language approach (National Institute of Health and Human Development, 1993).
Vellutino working at the Child Research and Study Centre of the State University of New York at Albany, believes that Dyslexia is a language deficiency. Because Dyslexic readers can perceive and reproduce letters at the same level as normal readers, the problem may be not the visual coding system but, rather one of linguistic. He states “Far from being a visual problem, Dyslexia appears to be the consequence of limited faculty in using language to code other types of information”.

Advanced imaging technology has made it possible to identify specific patterns of brain activity. Scientists are now able to identify brain malfunctions involved in Dyslexia. Using magnetic resonance imaging, researchers were able to observe computer-generated images of the brain while the individual do various reading tasks. This imaging showed the person with Dyslexia to have less brain activity in the areas of the brain that link the written form of words to the phonic components. This dysfunction in brain timing makes it difficult to accurately process speech sounds. The lack of phonic awareness is what distinguishes the student with Dyslexia from those without Dyslexia.

Some studies have found that people with Dyslexia have no greater incidence of eye problems than those without Dyslexia (U.S. Department of Education, 1984). Their visual acuity, stereo acuity, ocular alignment, motility fusion status and refractive errors do not differ from those of the general population. In Contrast to language problems only 5% of people diagnosed with Dyslexia have visual-spatial-motor problems that interfere with sequential organizations, scanning, and the perception of temporal and spatial cues. Such problems are common in young children who are just beginning to read and are self-correcting. However, a child with Dyslexia whose deficits are undiagnosed and ongoing will miss out on basic instruction in reading.

Studies suggest that 15% to 17% of the population have Dyslexia. It occurs among all groups regardless of age, race, gender or income. Dyslexia occurs in people of all backgrounds and intellectual levels. Studies also show that one of the most important risk factors is the family history. If the child has a parent who has Dyslexia, there can be as much as a 65% chance that this dysfunction is inherited. Many are gifted and talented in areas that do not require strong language skills such as art, music, and sports.
Diagnosis is extremely important to isolate the person with Dyslexia. Generally a physician is the first diagnostician to investigate the problem. If indicated a neurological exam may be given, along with a battery of assessment instruments to find how the specific reading problems are related to the intellectual, achievement, perceptual, motor, linguistic and adaptive capabilities of the individual. Only after an accurate diagnosis, proper intervention techniques can be applied. Persons with Dyslexia have the same wide range of intelligence as the general population. Although a student with Dyslexia, may lag behind in reading and language skills, with individualised instruction, reading, writing, and spelling can usually be mastered at least at a functional level.

2.6.2 Dyslexia Defined

Dyslexia has been around for a long time and has been defined in different ways. Dyslexia is a term that applies to a specific reading disability. Medically, it is defined as a condition resulting from neurological, maturational, or genetic causes.

According to the U.S. National Institutes of Health, Dyslexia is a learning disability that can hinder a person's ability to read, write, spell, and sometimes speak.

2.6.3 Different types of Dyslexia

There are several types of Dyslexia that can affect the child's ability to spell as well as read.

- **Trauma Dyslexia**

  It usually occurs after some form of brain trauma or injury to the area of the brain that controls reading and writing. It is rarely seen in today's school-age population.

- **Primary Dyslexia**

  This type of Dyslexia is a dysfunction of, rather than damage to, the left side of the brain (cerebral cortex) and does not change with age. 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 passed in family lines through their genes (hereditary). It is found more often in boys than in girls.
• **Secondary or Developmental Dyslexia**

It is felt to be caused by hormonal development during the early stages of foetal development. Developmental Dyslexia diminishes as the child matures. It is also more common in boys.

Johnson & Myklebust (1967), made an important distinction between visual and auditory Dyslexia. Visual Dyslexia is characterised by number and letter reversals and the inability to write symbols in the correct sequence. Auditory Dyslexia involves difficulty with sounds of letters or groups of letters. The sounds are perceived as jumbled or not heard correctly.

The characteristics they outlined are specially valuable for planning an intervention programme. They are described in Table 2.1.

### Table 2.1

<table>
<thead>
<tr>
<th>Visual Dyslexia</th>
<th>Auditory Dyslexia</th>
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<tbody>
<tr>
<td>Visual discrimination difficulties</td>
<td>Auditory discrimination and perception problems</td>
</tr>
<tr>
<td>Reversal tendencies</td>
<td>Auditory analysis and synthesis difficulties</td>
</tr>
<tr>
<td>Inversion of tendencies (n for u, m for w)</td>
<td>Difficulty reauditorising sounds of words</td>
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<tr>
<td>Problems with visual retention of sequence</td>
<td>Auditory sequencing problems</td>
</tr>
<tr>
<td>Visual memory deficits</td>
<td>Preference for visual tasks</td>
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<tr>
<td>Inferior drawings and lack of details</td>
<td>Auditory analysis and synthesis difficulties</td>
</tr>
<tr>
<td>Problems with visual analysis and synthesis (part-whole relationships)</td>
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<tr>
<td>Difficulties with visual- motor tasks such as games and sports.</td>
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</tbody>
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### 2.7 Characteristics of the Dyslexic Reader

Over the years, researchers have tried to determine what characteristics are shared by Dyslexic readers as a group. From the large number of studies conducted, the following conclusions can be drawn:

1. The Dyslexic reader is more often a boy than a girl. Males outnumber females approximately in the ratio 4:1.
2. The Dyslexic reader has average or above average intelligence. However verbal IQ tends to be significantly below performance IQ.
3. Severely disabled readers often have comprehension difficulties and cannot understand the meaning of a given passage.

4. Members within the family may show similar reading problems.

5. Dyslexic readers tend to be spatially disoriented, with pronounced left-right confusion. This effects the way they perceive words:
   a) there is frequent kinetic reversals of letters (filim-film); of words and sometimes of entire sentences.
   b) sounds are confused (empty-entry)
   c) concepts are reversed (floor for ceiling, cake for bread; east for west).
   d) the reader is usually left-handed, and has difficulty identifying right from left.

6. There may be poor figure-ground discrimination and motor and visual-motor patterning. Fine motor movements tend to be clumsy. The child may write very untidily with jerky irregular strokes. The letters tend to be poorly formed, irregular and uneven in formation.

7. Speech difficulties are also a typical characteristic of the Dyslexic reader. Stuttering, lisping, cluttering are quite common. Slowness in learning to talk is often indicative of later problems in reading.

8. There is a tendency to be hyperactive, impulsive and distracted. Most Dyslexic readers have a short attention span, and low frustration level. They tend to perseverate (get fixated on words) and lack the ability to scan lines, an ability required for successful reading. They are unable to discriminate between letters and cannot attend to critical features of a word.

9. Dyslexic readers tend to have an inefficient visual memory system. This means they cannot recall the sequence of letters in a word and this prevents their reading from becoming automatic.

10. Longitudinal studies confirm that severely Dyslexic readers continue to manifest severe reading problems as adults, despite intensive remedial intervention.

11. The Dyslexic reader functions one grade below expectancy in the primary classes and two or more grade levels below in later school years.

12. There is little or no progress despite intensive instruction.
2.7.1 Common Reading Errors of disabled readers

Reading errors are common in majority of disabled readers. However, certain errors are more specific such as visual and auditory reading disorders. Children with reading disability tend to

- Read letter by letter and have difficulty blending the letter sounds to form words
- Read word by word
- Phrase words incorrectly
- Omit syllables and sometimes whole words
- Repeat syllables and words
- Reverse letters and words
- Substitute or guess at words
- Be disorganised

There are some errors specific to Dyslexic readers which need to be specially mentioned. These are errors of:

- **Omissions**: The reader omits letters (for example belt/bet) or whole words when reading. Generally, it is the middle and end part of a word that is omitted, so the child’s attention must be directed to special features of the word. Teaching him to scan the complete word is a useful strategy. Auditory sequential memory disturbances may give rise to omission of initial consonants (the child reads member for remember or suitcase for suitcase) or distortion of the sequence of sounds (the child reads lowbe for below). Teachers must note the frequency of errors and the kind of omissions or distortions the child makes as this will form the basis of any remedial programme.

- **Additions and Insertions**: The child inserts a letter/s where it is not required (play/played) or a syllable (care/careful). This happens because he fails to follow the context, is unable to identify the words quickly, or fails to comprehend the meaning of what he is reading. Choral reading, and having the child read along with a taped reading can minimise this error.

- **Substitutions**: The reader substitutes words which look the same (house for home; guess for guest). There is a great deal of wild, meaningless guessing (bus is called biscuit). One reason why this occurs is that the child focusses only on the initial-part of the word and ignores the rest. It may be that the child is
over-relying on configuration cues and ignoring the context. He probably has a
poor sight vocabulary and inadequate word-recognition and decoding skills. The
use of flash cards is a good method of remediating substitutions because it directs
the student's attention to the sounds and syllables of individual words. Teach the
child how to tackle new words when he comes across them in a passage. Some
children feel they have to read very fast without interruptions and so they
substitute any word that they can think of, rather than trying to analyse the word
and the context.

- **Mispromunciation:** It is also a form of substitution, could be the result of
poor auditory discrimination, undetected hearing or vision defects, poor
syllabification and phonics skills. To remedy mispronunciations, teach the child
to listen for sound differences. Practice with choral reading and rhyming also
help for the remedy.

- **Repetitions or Regressions:** A child frequently repeats words because he
cannot make sense of the meaning or is embarrassed and nervous when reading.
The end result is a very slow, erratic rate of reading. Regressions occur generally
because the child feels a need to verify what was read, he missed the meaning in
the sentence, or there is lack of confidence. One way to correct regressions and
repetitions is to ask the child to first read silently before reading aloud. Use
phrase cards instead of a passage which may appear overwhelming to the child;
develop a stock of sight words which he can read fluently; let the child listening
to himself while he read so that he realises that he is repeating words.

- **Reversals:** Orton first introduced the term "reversal" to explain how
learning disabled persons twist symbols when reading and writing. Letters, parts
of words, or whole words may be reversed, for example, p and q, b and d; was for
saw; aminal for animal. Sometimes an entire part of the sentence is reversed:
"The boy went into the garden" becomes "garden into the went the boy." Or, part
of a compound word gets transposed: postman becomes manpost. Letters within a
word may also get reverted when reading: me becomes we; bad becomes bag;
bun is confused with bus. Orton suggested that reversals indicate inadequate
cerebral dominance and some kind of defective neurological organization. More
specifically, there is a perceptual disorder that reflects a developmental delay or
deficit. Another group of researchers attribute reversals to a lack of figure ground
discrimination, that is, the child is unable to perceive spatial relationships. However, perceptual errors of reversals are very common among kindergarten children (as high as 90%) and children grow out of this usually by the age of seven. If the tendency to reversals persists into Class two and three, both in terms of duration and intensity, it indicates a more serious problem. Moyer and Newcomer (1977) suggested that reversals occur because the child is unfamiliar with the concept of directionality and the problem is one of letter sequencing. Most young children reverse letters and words introduced to reading and writing in the nursery and primary classes. The difference is that a Dyslexic child continues to do so well into the higher classes and the frequency of the occurrence is also much greater. With repeated instruction, normal children outgrow the orientation confusion which is responsible for such reversals, but a learning disabled child takes much longer to overcome the problem. The elimination of reversals is a challenging task because they are very resistant. A remedial step is to establish the concepts of right and left by using motor movements. Direct their attention to the fact that reading involves sweeping from left to right.

• **Word-by-Word Reading:** The reader frequently loses his place when reading, using no intonation, expression or punctuation, and pausing so long that he loses sight of the meaning. Poor word-identification skills, lack of a sight vocabulary and inability to use context are some common causes to explain word-by-word reading. Some remedial tips are: increase the pace of the reading by moving a piece of paper along the page; read along with the child at a faster pace; use flash cards with phrases; give the student practice in choral reading. Auditory sequential memory disturbances may give rise to omission of initial consonants or distortion of the sequence of sounds. Teachers must note the frequency of errors and the kind of omissions or distortions the child makes as this will form the basis of any remedial programme.

### 2.8 Assessment of Reading Disorders

Assessment is the systematic process of collecting information about the child, his past and current levels of performance, his strengths and weaknesses, in order to help make educational decisions about his future. Proper assessment of the learning disabled child is very important, because it must be relevant to the
goals and objectives, the teaching methods, and the kind of help the child will receive.

As far as possible, testing of a learning disabled child must be done on an individual basis and not in a group, because the characteristics of each child are unique. Assessment defines the degree of disability not as an end in itself, but as an aid to learning. The information collected must be relevant and of practical help in the classroom. Moreover, the assessment is not a "once-in-a-lifetime" stamp, but must be repeated at suitable intervals, so that decisions can be changed and new goals set. Assessment helps parents to better understand their child's problems, and adjust their expectations on the basis of the assessment data.

There is a wide range of testing procedures that one can choose from when testing the learning disabled. Generally, assessment tests fall into two groups formal and informal. Formal testing uses standardised tests, while informal testing uses non-standardised tests.

**Formal Assessment**

Formal assessment involves the use of standardised tests, which demand a high degree of uniformity in administration and interpretation. They allow comparison of students of the same age or grade, and can be used individually or in groups. It is generally expected that standardised tests select items of high technical quality, provide explicit directions for administration and scoring of the tests, and outline technical information related to the instrument's adequacy. One of the most important advantages of a standardized test is that it allows one to compare the ability of an individual (or group), with a normative sample (a sample drawn from the population). When selecting a standardised test, certain cautions must be kept in kind. The test manual must be carefully reviewed to ensure the test is used for the purpose it was intended. Teachers must know why they are testing, which test to select, and how the results will be used. A test need not be the best one simply because it is popular or expensive. They must be sensitive to technical factors like reliability and validity of tests. A test is said to be reliable if the scores obtained are consistent over repeated administrations. It is valid if it truly measures what it proposes to measure. Teachers need some kind of training in how to administer these tests and, more important, in how to interpret the results. Standardised tests have to be administered under very specific directions laid out in the manual. The person conducting the test is
usually not required to help the examinee in any way. Timing is another important factor which, if not adhered to, can distort the results. Interpretation of scores too, is a fairly skilled process. In fact, much of the difficulty with interpreting scores arises from the fact that tests yield many different kinds of scores which can be confusing: Raw scores, grade equivalent scores, age equivalents, percentiles, and standard scores. However, scores should never be over generalized, that is, applied to something for which the test was never intended. Formal tests are generally of three kinds: (1) General intelligence and aptitude tests; (2) General achievement tests; and (3) Personality tests.

Some frequently used standardised reading tests are the Woodcock Reading Mastery Tests (Woodcock, 1974), Gray Oral Reading Tests (Gray and Robinson, 1967), and Durrell Analysis of Reading Difficulty (Durrell, 1955). Tests are also available to assess many other specific reading skills. For example, the Slosson Oral Reading Test (Slosson, 1963), the reading subsection of the Wide Range Achievement Test (Jastak and Jastak, 1978) or the Peabody Individual Achievement Test (Dunn and Markwardt, 1970) can be used.

**Informal Assessment**

Informal methods of testing are non-standardised procedures used by teachers and other professionals, to collect information about the learner. The advantage of informal testing procedures is that they are relevant to the kind of practical instruction that occurs in the classroom. However in order to be effective, these tests too must be systematic, structured and designed along scientific principles. The most frequently used informal procedures are observations, interviews, questionnaires and test.

Most teachers and parents may not have the resources to purchase the above mentioned tests. Informal testing is an equally (if not more) reliable method of identifying the child's strengths and weaknesses. For this, teachers need to be familiar with the reading process described earlier so that they know what areas of reading skills to assess. Checklists and record forms can be used during classroom-observations. Using record form, a teacher can test both oral and silent reading. The child's progress can be monitored at regular intervals.

An Informal Reading Inventory (IRI) is another instrument which helps to estimate the child’s general reading level. The IRI is a series of sequentially graded reading paragraphs taken from one book. Unlike a standardised test the
child is not tested with reference to other children but an overview of his general level of reading competence is obtained. The IRI has several advantages. It is an easy-to-construct assessment tool that also helps in planning remedial reading materials. Results from an IRI can be used in classroom instruction.

**The Cloze Technique**

The cloze procedure is very popular because of the simplicity of its design and because teachers appear to use it in the normal process of teaching to evaluate comprehension skills. The reader is given an unfamiliar passage in which every fifth word is omitted and replaced by a blank (starting from the second line). The reader has to supply the missing word. If the reader fails to supply 40% of the responses, the passage is too difficult.

The main advantage of the cloze procedure are that (a) it is easier and quicker to construct, administer, score, and interpret than the IRI; (b) its use requires less expertise (c) it can be group administered; (d) it provides a good measurement of the ability to use semantic and syntactic cues, and (e) research findings for pupils over age eight are impressive. However, one must remember that the cloze procedure provides diagnostic information limited to word recognition, decoding skills and comprehension only.

**Miscue Analysis**

Another method of assessing a child's reading level is by analysing the errors made while reading. Known as the psycholinguistic process, it was developed by Goodman and Burke in 1970. Psycholinguistic reading is a guessing game in which the reader's thought and language ability interact in anticipating what will come. Miscues or errors refer to deviations from the printed text that the student makes while reading orally. These miscues provide diagnostic opportunities to the teacher to understand the student’s language patterns. Such analysis also provides information on whether the student makes phonic errors or morphological errors.
2.8.1 The Role of Professionals in the Assessment Process

Learning disabled children need the support of a multidisciplinary team. It should consist of regular teachers, specialists, psychologists, speech therapists, physicians, and school counsellors. The general physician or paediatrician is usually the first person to notice any developmental delays in the child's progress. Parents frequently complain that many of the doctors are ignorant of learning disabilities and cannot advise them about treatment methods. A visual examination conducted by an optometrist and/or an ophthalmologist is also necessary to rule out the possibility of any eye defect. A great deal of debate has
been generated over the relationship between reading and visual defects. Learning disabled individuals are often subjected to tedious, time-consuming 'visual training' methods which are not medically supported. The procedure is shown in figure 2.1.

A neurologist may also be approached if parents suspect some kind of neurological damage or dysfunctioning. Generally, the neurologist will collect information pertaining to birth and developmental history, and examine the child’s total neurological functioning, sometimes using an EEG (Electroencephalography).

Other professionals who may be involved in assessing the learning disabled child are a psychologist, Psychiatrist and school counsellor, especially if there are emotional and social problems. The psychiatrist is trained to dispense medicines, whereas the psychologist used less intrusive methods of understanding why the child is not adjusting.

The initial diagnosis of most LD students is done by a psychologist who should be qualified and licensed to conduct psychological tests. Most standardised achievement tests also require prior training.

2.9 The Importance of Early Intervention

A learning disability is usually diagnosed when a child enters primary school and is aggravated in higher classes when the focus of instruction is less on basic skills and more on content information. The child is expected to read fluently, copy notes from the blackboard, write essays, and answer questions on a given passage. A fair amount of abstract reasoning is demanded and a massive burden is placed on memory. This is why early diagnosis is very important. It is time consuming to teach a reading disabled child in standard 8 basic reading skills using phonics or sentence cards. The academic lag continues to increase with time and if no assistance is provided, there is the risk of the child not completing school. Drop-out rates for the learning disabled are fairly high.

Ignorance about the disability is prevalent, and does a lot of harm by delaying intervention. Teachers too have a major role to play in helping to detect if a child is learning disabled, but they too may know little about what signs and behaviours to look for. Only a sensitive teacher can force parents to seek expert help for the disabled child. Unfortunately parents take a long time to admit that there could be something wrong with their child. Part of this reluctance is owing
to the fear that the school authorities will ask them to remove the child from the school. Parent’s fears are not totally misplaced. Although teachers help in diagnosing the problem, they are seldom in a position to implement any kind of remedial teaching in the classroom. There are constraints of time, large class sizes, and excessive syllabus to be completed. In addition, teachers are rarely flexible about changing their methods of testing and evaluation. For example, instead of expecting the child to complete five essay questions, in a three-hour periods, it would be more realistic to allow the child extra time for writing, and examine him orally as part of the examination. Schools must permit the child some alternative methods of learning, for example, the use of a typewriter, computer or calculator, if necessary. If early diagnosis is not followed by appropriate remedial assistance to the child, he is labelled and stigmatised for life without any solution being offered. These children need special support and services.

2.10 Instructional Remediation

It is a provision of instruction designed to correct or remediate basic problems or skills. For eg. A student can be taught specific skills( such as reading or math) to remediate deficiencies in skill development or specific deficits in abilities(memory, perception of sounds). The planning of a remedial programme for disabled readers is an extremely difficult and challenging task. Instruction has to suit the individual needs of the learner. By the time a child is diagnosed as being learning disabled, he is usually in standard 6 or 7 and is expected to deal with vast quantities of information. Lack of motivation is yet another hurdle because most students have a history of prior failure and hate to read. The teacher must be sensitive to the student's learning style, age & interests and choose materials that are suitable to the particular child. There is no fixed formula that works best, not any magic ingredient which will instantly help the student to read. But with drill, practice, and appropriate materials a great amount can be achieved.

Teachers can actually implement a remedial programme in the classroom with learning disabled students. It is supposed that by the time the remedial programme is started, the school has collected all the relevant information about the student. Assessment should be complete and the teachers are to be informed of the results. In most other countries, a teaching plan (sometimes called an Individualised Educational Plan or IEP) is legally required of the school
authorities. Even though no such compulsions exist in India, it makes a lot of sense to follow the explicit, practical guidelines laid down in the IEP. It goes without saying that it is necessary to individualise any remedial programme because there is so much variation between students. Each student learns differently, and this is especially true of the learning disabled population. Teachers will constantly monitor students' progress and keep their teaching strategies flexible. The methods of evaluation will also need to be different, depending on the child's educational needs. A structured plan of action is very beneficial to the learner. Though it may seem like a lot of hard work initially, in the long run it saves teaching time, and is far more productive than an ad hoc approach.

2.10.1 Teaching as a Reflective Process

Teaching is at its best a highly reflective process, in which professionals engage in dialogue with themselves and others about strategies that work well and strategies that do not. Such a dialogue can be critical for instruction of students with learning disabilities. Another emphasis will be an emphasis on reflective process. Teachers will be encouraged to engage in various reflective exercises to focus on the strategies provided and how those strategies may be adapted for various classroom situations.

However, veteran teachers tend to engage in a reflective process related to structuring their classroom and often improve on their room organization as well as their instructional technique. This reflection can be critical in dealing with students with learning disabilities because both instructional and disciplinary endeavors must begin with intentional structuring of the classroom to maximize effective instruction and minimise disruption.

Students with learning disabilities do tend to function much more effectively in a highly structured environment, because disorganisation tends to be one general characteristic of this group of students. When contemplating the instruction for students with learning disabilities, a teacher's first emphasis should be a general reflection and reconfiguration of the instructional space and instructional approaches to more easily differentiate the instruction in the class and thus accommodate the needs of students with learning disabilities in the differentiated classroom.
2.10.2 Differentiated instruction

Students with learning disabilities (LD) usually challenge almost every general education teacher due to their particular learning characteristics. Every veteran teacher realises the fact that students with learning disabilities may be less engaged in the learning task, unable to cope with multiple instructions, and poorly organised in their thinking and work habits. When these deficits are coupled with fairly severe academic deficits, the result can be a student who is very challenging for general education teachers.

The concept of differentiated instruction is based on the need for general education teachers to differentiate instruction to meet the needs of diverse learners in the general education class; this includes students with learning disabilities as well as a number of other disabilities.

Differentiated instruction may be conceptualised as a teacher’s response to the diverse learning needs of a student. Teachers must know the learners in the class, understanding not only such things about each learner as the learning style and learning preferences, but also showing a concern for each student by tailoring instruction to meet the needs of each individual student. Given the teacher’s professional observations of a student’s learning, the teacher would concentrate on modifying (i.e., differentiating) the learning in three areas:

- Content (what is learned)
- Process (how the content is taught)
- Product (how the learning is observed and evaluated)

The learning content involves what students are to master, what we want the students to accomplish after instruction. The content may be delineated in state-approved curricula, in scope and sequence charts (i.e., objectives grouped by subject area and grade level), in state or national standards, or in the curriculum material itself. In most cases, the teacher will not be able to control the specific content that must be covered, but he or she will have control over how to modify that content for presentation to the students based on the learning styles of the students, and in that modification process, some content will be emphasised more than other material.

The learning process involves how the student interacts with the content, and those learning interactions will in part be determined by the various learning
preferences of the students (e.g. whether the student is an auditory learner, a visual learner, a learner who needs concrete demonstrations, etc.). Because of the diversity of learning styles and preferences demonstrated by students today, the differentiated classroom will typically involve a wide array of activities to address the different learning needs of everyone. These learning processes may include some of the following:

- **Activating the learning** – the introductory activities that focus on the material to be learned, relate that material to previously mastered material, let the student know why that material is important, and describe what students should be able to do once they learn.

- **Learning activities** – involve the actual instructional activities for the students, such as modeling, rehearsal, choral chanting, movement associated with the content, and/or educational games.

- **Grouping activities** – both individual and group-oriented learning activities should be planned as a part of the learning process.

Finally, the learning *product* will be of paramount importance because demonstrations of learning allow the teacher to determine the students who have mastered the material and those who may need more time and continued instruction. Again, the learning styles of the students in the class will help determine what types of products the teacher may wish to accept as demonstrations of learning. In the differentiated learning classroom, it would not be uncommon for a given unit of instruction to have four or five different types of culminating projects that students may choose in order to demonstrate their knowledge of the topic. Art projects, role-play, mini-dramas for groups of students, library or web-based research, multimedia projects, paper-and-pencil projects, written reports, or oral reports all represent excellent projects that students may complete to demonstrate their knowledge.

### 2.10.3 Ten Tactics for Structuring the Lesson for Students with Learning Disabilities

Differentiated instruction focuses on the three components of content, process, and product. The tactics presented here offer teachers an array of possibilities to differentiate both the content and the process of instruction.
1. **Provide clear directions.** Providing clear, simple, instructions, particularly during transitions, can assist students with learning disabilities to focus on the learning task.

2. **Provide lesson outline.** A lesson outline will help students focus on what will come next in the small-group or whole-class discussion. From the basis of this outline, the teacher should teach outlining and note-taking skills. This assists students with the learning process.

3. **Develop alternative activities.** To modify the instructional content, when a teacher develops a lesson, he or she should develop a minimum of two worksheets that present the same content at different levels. The use of alternative assignments that cover the same material is one cornerstone of differentiated instruction.

4. **Plan for frequent breaks.** Students who are hyperactive (including many students with learning disabilities) will need frequent opportunities to stand up and move around the classroom. Building thirty-second “stretch-breaks” every fifteen minutes or so into your class period can help alleviate many problems.

5. **Use physical activities.** For all students in public schools, learning is facilitated by movement. Even the learning of the highest achievers in senior high can be enhanced by movement. The emerging research on “brain-compatible education” has documented that the learning process can be greatly enhanced by movement, and if teachers can tie particular facts to a physical movement and have the class practice that movement, the students with learning disabilities will be much more likely to remember that fact.

6. **Use clear worksheets.** Teachers should make certain that they do not unintentionally build distracters into the lesson by using cluttered worksheets or instructional materials. For students with learning disabilities who may be visually distracted, such worksheets can result in failure on the assignment.

7. **Decrease task length.** For some students with learning disabilities, a worksheet activity that involves fifty math problems will always appear to be an insurmountable assignment. However, if the teacher prints only fifteen math problems on the worksheet, the student will immediately attempt that assignment. The teacher may then give another worksheet with another fifteen additional problems on it.
8. **Check assignment notebook.** All teachers should require that students write assignments in a notebook, and while many do this, some teachers never check the notebooks. For students with learning disabilities, checking that they have written down the correct assignment can be critical, and the process of checking emphasizes the importance of noting the assignment due dates.

9. **Develop alternative assessments.** Looking at the product of student learning is a critical component of differentiated instruction, and students with learning disabilities, on some occasions, know more about a topic than a paper-and-pencil test can allow them to demonstrate. Teachers must develop and use alternative assessment practices, such as grading open-book homework or class work or using daily data based performance measures. These will be covered in a later section of this text.

10. **Turn to your partner and explain.** The idea behind “turn to your partner and explain this concept” is rooted in the truth that what one can explain, one understands. When conducting a lesson, at various points (perhaps every five minutes or so, when the class finishes a certain amount of material), teachers may have the students pair up and explain those several points to each other, as a comprehension check. Building this routine into the lesson can greatly enhance comprehension of students with learning disabilities.

### 2.10.4 Educational programmes for Learning Disabled Children

There are several possible orientations for planning intervention programmes for learning disabled children. The following categories reflect what the majority of the professionals recognise as the major approaches.

1. Behavioural Interventions
2. Cognitive behavioural interventions
3. Medically based interventions
4. Multisensory approach
5. Direct instruction

In practice, a teacher can combine two or more of these approaches. A judicious blend of the above approaches is bound to yield fruitful results.

**Behavioural Interventions**

Applied behavioural analysis focuses on changing socially significant behaviours that have been observed and operationally defined. Environmental
factors can be systematically manipulated to increase, decrease, change or shape targeted responses. Behavioural interventions should generally be attempted first because they are easy to initiate in the context of the classroom and do not require the intervention of other professionals or experts. In designing behavioural interventions the teacher teaching learning disabled students should first prioritise individual needs and then select target behaviour. The teacher should select out-of-seat behaviour as the first behaviour to be targeted because it forms the base for distraction or inattention. Out-of-seat behaviour refers to the behaviour of the learning disabled students when he was not in contact with the task. Reinforcement of incompatible behaviour should be used to reduce the frequency of out-of-seat behaviour. The learning disabled students must be reinforced for remaining in their seats. The teacher may provide reinforcement such as token economy as well as praise for staying in their seats. If the teacher increases the amount of time the learning disabled children spend in their seats, their on-desk behaviour and productivity will proportionately increase.

Research supports the effectiveness of behavioural interventions for a variety of behaviours including attention problems. Contingency contracting, peer-mediated interventions, token economies, time-out from positive reinforcement and other reductive procedures based on reinforcement have been successfully utilised to deal with problems of attention. Hence, the teachers should utilise a behavioural intervention as the initial option of choice in the elimination of the problem, when they observe attention problems among learning disabled students.

**Cognitive Behavioural Interventions**

Cognitive behavioural instruction has been used for teaching students to act as their own behaviour change agents. Self-monitoring is the most appropriate strategy for intervention of attention behaviours. Self-monitoring is the ability to repeatedly evaluate one’s own behaviours in order to effect positive change in those. Self-monitoring has been successfully used among population with learning disabilities. Research supports the effectiveness of self-monitoring for increasing on-task behaviours.

**Medically Based Interventions**

Medical science 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 such as behavioural interventions and self-monitoring interventions should be applied. If these intervention strategies do not alleviate the problem, a drug intervention may be attempted. Numerous studies indicate that drug intervention improves academic class work as well as behaviour. However, parents and teachers are often more interested in performance on standardised achievement tasks, where the impact of drug interventions has been only modest. Further research is needed in which longitudinal studies are used to track children for a number of years to determine whether they think, learn, and socially function more effectively with medication, not whether they are quicker, more attentive, or productive in one particular situation.

**Multisensory Approach**

A number of programmes have been developed for training visual motor skills as well as psycholinguistic processes. Multisensory programmes very much emphasise working with academic materials directly. Multisensory methods use a combination of the child’s sensory systems in the training process. The underlying assumption is that if more than one sense is involved in learning experiences, the children will learn better.

The prototype of most Multisensory approaches is Fernald’s VAKT method (V stands for Visual, A for auditory, K for kinesthetic and T for tactual). In the first step, the child tells the teacher a story. The teacher notes down the words of the story, which serves as the materials as the child learns to read. Using children’s own story is a particularly good motivator, especially for older children. In learning the words, the child first sees the word (visual) then hears the teacher say the word (auditory). Next the child says the word (auditory), and finally, the child traces the word (kinesthetic and tactual).

**Direct Instruction**

Direct instruction is a complex way of looking at all aspects of instruction, including classroom organisation and management, the quality of teacher-student interaction, the design of instructional materials, and the nature of in service teacher training. Learning disabled students who are taught using direct instruction significantly outperform other learning disabled students instructed through indirect methods. Simply speaking, direct instruction is an approach to teaching in which lessons are goal oriented and structured by the teacher.
2.10.5 Itinerant and Resource Room Teaching

Itinerant Teaching

Sometimes the learning difficulties experienced are not severe enough to deserve resource room instruction or special class placement. In such cases, an itinerant teacher usually visits the school occasionally and focuses on teaching skills and special materials. These consultation services range from daily to biweekly visits, with the classroom teacher still having the basic responsibility for the student.

Resource Room Teaching

Many students with learning difficulties spend the majority of the day in a regular class and attend resource room for a specified period of time each day. The resource room teacher works closely with many teachers to coordinate the instructional programs of the students. A resource room teacher usually provides daily services to about 20 to 30 students with disabilities. Three types of resource room models exist:

- Categorical: Serve only students with learning disabilities
- Cross-Categorical: Serve Students with all kinds of disabilities
- Non-Categorical: Serve those with mild learning disabilities

2.10.6 Helping Dyslexics – Magazine reports

- *Exercises aid Dyslexic pupils* - Research suggests that children with Dyslexia could be helped by the introduction of special movements and exercises into school sports lessons. According to psychologist Martin McPhillips, special routines, designed to tap into reflexes from birth, lead to better co-ordination which in turn can improve reading and writing skills. A charitable foundation, Primary Movement, has been set up - with a website to handle queries about the exercise scheme. (The Sunday Times - Oct 28th 2001).

- *Retraining a Dyslexic Brain*: A Winston-Salem research team has shown that Dyslexic adults reading skills can improve after 112 hours of phonics-based instruction. The major change
researchers saw was the adult's ability to understand how the language works. Adults also became more accurate when reading simple words and words in text. Participants have started to read entire books for the first time, have gone back to school and graduated (The Time Magazine - Oct 12th 2005).

- **Lexiphone Therapy** - Beller, a French psychiatrist, has developed a new therapy for children with Dyslexia. Children attend a center where they listen to exaggerated words and sounds - like baby talk - played through headphones while they play with Lego or draw. Attendance for an hour twice a week is required for fifty weeks, and the therapy is aimed at re-educating their brains' auditory pathways. Research has shown improvement in most children who took the therapy. (‘TIME' magazine article on Dyslexia (August 31st 2003)

### 2.11 Tips for parents of children with Learning Disabilities

Steinberg, a distinguished professor of psychology at Temple University in Philadelphia says, good parenting helps foster empathy, honesty, self-reliance, self-control, kindness, cooperation, and cheerfulness. It also promotes intellectual curiosity, motivation, and desire to achieve. It helps protect children from developing anxiety, depression, eating disorders, antisocial behavior, and alcohol and drug abuse. Some tips are listed below.

- **Praise your child when he or she does well.** Children with learning disabilities are often very good at a variety of things. Find out what your child really enjoys doing, such as dancing, playing soccer, or working with computers. Give your child plenty of opportunities to pursue his or her strengths and talents.

- **Find out the ways your child learns best.** Does he or she learn by hands-on practice, looking, or listening? Help your child learn through his or her areas of strength.

- **Let your child help with household chores.** These can build self-confidence and concrete skills. Keep instructions simple, break down tasks into smaller steps, and reward your child's efforts with praise.

- **Make homework a priority.** Parents should read more about how to help
their child in doing homework.

- **Pay attention to your child's mental health (and your own!).** Be open to counseling, which can help your child deal with frustration, feel better about himself or herself, and learn more about social skills.

- **Talk to other parents whose children have learning disabilities.** Parents can share practical advice and have emotional support by keeping in touch with the parent training and information (PTI) center in the concerned state.

- **Meet with school personnel and help develop an educational plan to address your child's needs.** Plan what accommodations your child needs, and don't forget to talk about assistive technology.

- **Establish a positive working relationship with your child's teacher.** Through regular communication, exchange information about your child's progress at home and at school.