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Dyslexia: A Critical Study of Language Deficiency in Children and Adolescents

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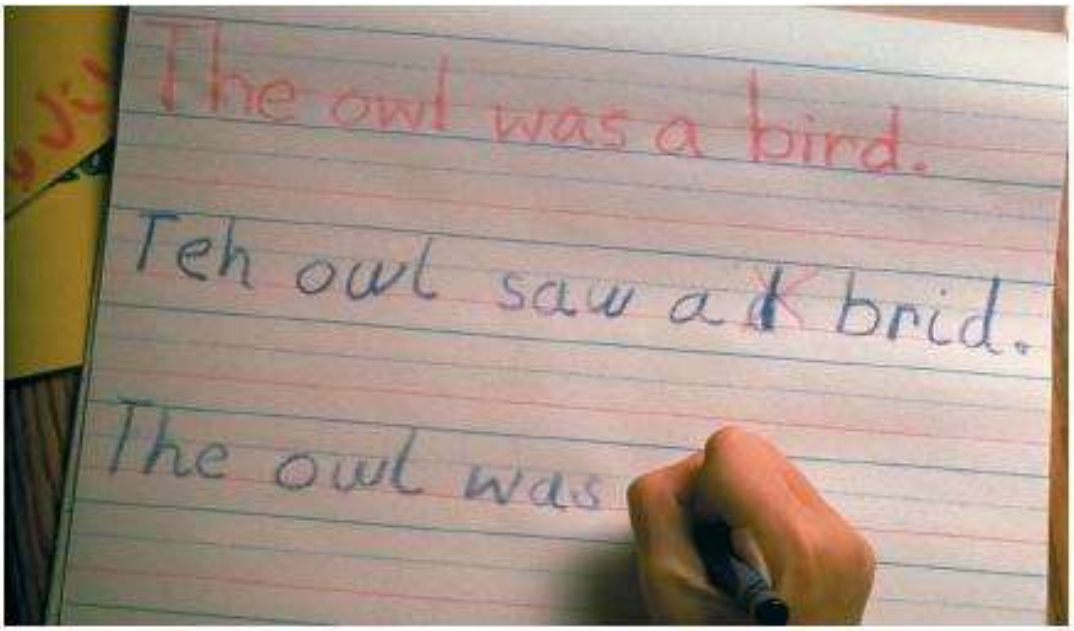

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Dyslexia: A Critical Study of Language Deficiency in Children and Adolescents

A
Dissertation
Submitted to Sardar Patel University
In partial fulfilment of the requirements for the Degree of
Master of Philosophy in English

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Certificate

Certified that the work incorporated in the Dissertation entitled "Dyslexia: A Critical Study of Language Deficiency in Children and Adolescents" submitted by Ms Vaishali Narbheram Punjani (Seat No.36 of MPhil Examination in April 2006) comprises the result of independent and original investigations carried out. The materials that have been obtained and used from other sources have been acknowledged in the Dissertation.

Vallabh Vidyanagar
08 April 2009

(Vaishali Narbheram Punjani)
Research Student

Certified that the work mentioned above is carried out under my guidance.

Vallabh Vidyanagar
08 April 2009

(J H Khan)
Research Guide

Forwarded with compliments to the Registrar (Examinations), Sardar Patel University with a request to get this evaluated.

(J H Khan)
Professor and Head

DEDICATED

TO

My Father

ACKNOWLEDGEMENT

For me, personally, two things are the most fascinating: nature and language. Particularly, language is necessary to describe the 'nature'. Whenever I listen to the word 'language', I am enthralled to know more and more about this social phenomenon. Thank God for language! Else, we would have been left 'deaf and dumb' bodies without language. Language propelled 'soul' in our body. With this study, I wish to discuss the connection between language and nature which is sometimes found disturbed in Children who are Linguistically-Challenged.

First of all, I am very grateful towards my Guru and Supervisor, Dr. J. H. Khan, Professor and Head, Department of English, Sardar Patel University, Vallabh Vidyanagar, for guiding me painstakingly and methodically. He has shown great interest, enthusiasm and patience for this work to be done. He cooperated to comprehend each and every idea which was put in front of him. He helped give shape to what I had finally come to understand on the subject.

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How can I forget my soul mate, My husband, Shiv, has done so many things for me that the space is too little to enumerate all of them? He was always by my side facilitating whenever I was in a perplexed state of mind. His support and love have given me enormous strength to compete the work systematically. My friends - Nilesh, Niraj, Pikesh, Imran, Kapil, Krupang, Parikshit – helped me to great extent to make this dissertation possible.

My offshore friends and elders, Dr. Patricia Wetzel (Prof & Head, Japanese Literature, Portland State University, Oregon, USA), Ms Karen Popp (Foreign Languages and Literature, Portland State University, Oregon, USA), Ms Linda (Coordinator, Heritage Language Initiative, Portland State University, Oregon, USA) Ms Zafreen Jaffery, Elena, Marjaan, Naveen, Nital, Ashok, Komal, Ranjit – had taken a lot of care while I was working on my dissertation during my stay in USA under the FLTA Programme.

Dr Sharifaben Vijliwala, a respectable scholar, Dr. (Prof.) Sudha Menon and Ms Varsha Vanza, my colleagues, were always on their toes to help me out whenever I needed their help and a big 'thank you' to all of these friends.

Contents

Chapter-1

Introduction

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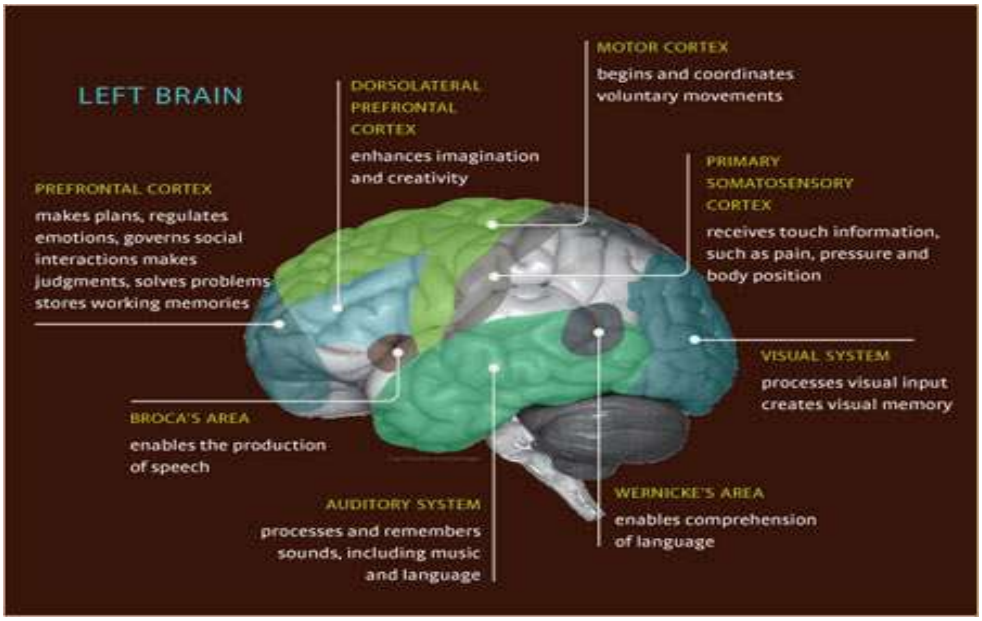
A language teacher encounters quite a few students with some or the other kind of psychological disorientation or mental disorders. These are cases of mentally challenged that we have around, though in small numbers, in the society. It is natural, then, for anyone who is confronted with such a sight to set thinking about learning disabilities. This was how we zeroed in on our

topic for research. The idea was to discuss even the smallest type of dyslexia, a neurological disorder.

We would also wish to discuss acquired dyslexia and its effects because acquired dyslexia is not a neurological disorder but occurs largely due to the situation in which a particular person may find himself or herself. Learning disability is a neurological disorder, and it occurs when a person's brain works differently than others in processing information. We would like to think it is the result of the malfunctioning of the brain-wiring. If a child has a learning disorder, it is quite possible that s/he would have a related problem too, because the main parts of the brain function together for many skills.

The brain wiring is developed slowly as we grow older although all of us have the brain cells from the birth. After the birth, the brain develops slowly and the wiring is activated. During this process, a child finds something very difficult in the beginning but somehow, after some time, s/he can solve that problem. We call these maturational spurts. When we discuss this growth, we have to discuss the parts of the cortex which are involved not only in language skills but also in motor skills, cognitive skills as well as organizational (executive function) skills.

It is natural, therefore to first talk about the brain and its parts in some detail.



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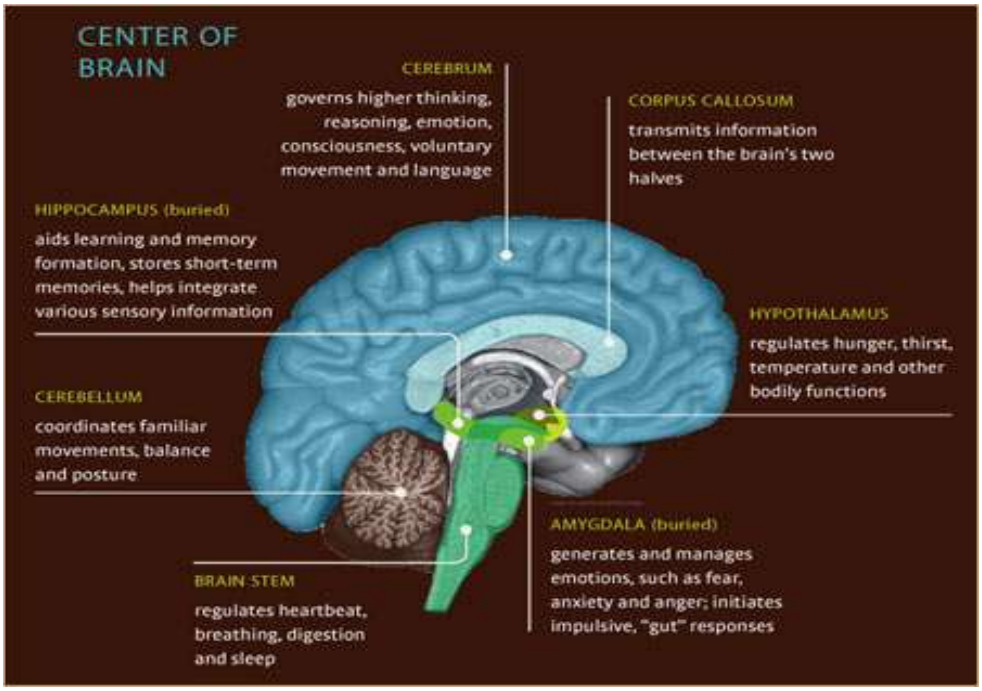

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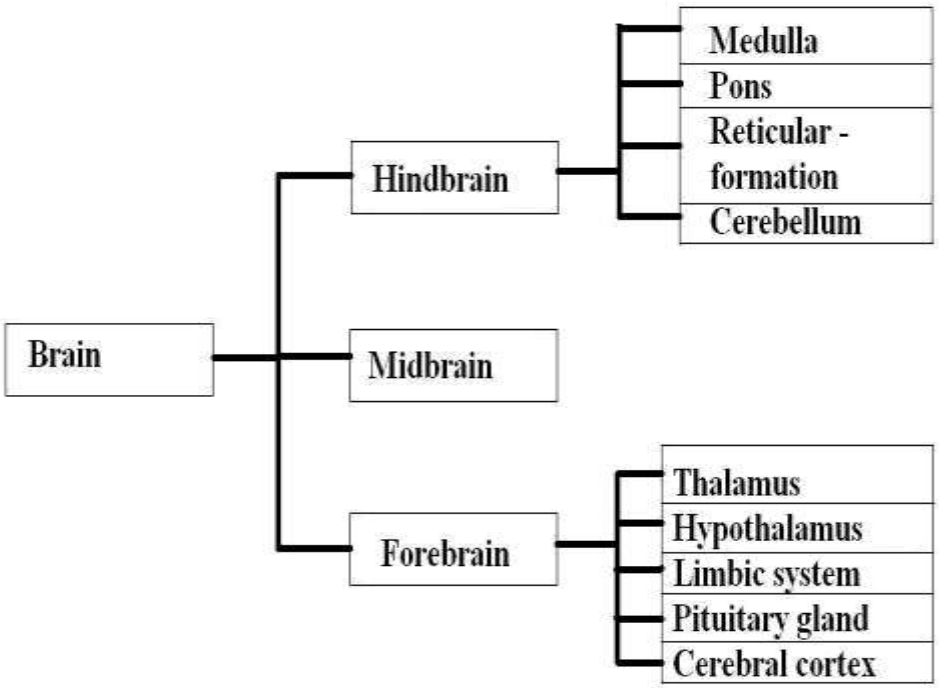
The brain is the master in the nervous system. It is one of the largest organs in adults with around 100 billion neurons and 900 billion glia. Generally, it weighs about 1.4 kg (3 pounds). Neurons in the brain undergo mitotic cell division only during the prenatal period and the first few months of postnatal life. Although it grows in size, there is no subsequent increase in numbers thereafter. Trends in recent research in neurogenetics have begun to point out to the possibility of the growth of DNA as well as new neurons in place of the damaged ones in a particular part of the brain.

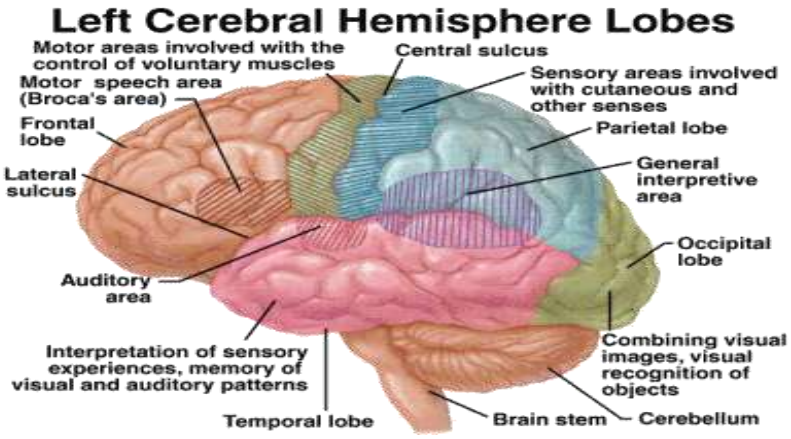
Malnutrition during the crucial prenatal months of neuron multiplication is reported to be a hindrance in the process and results in fewer brain cells. This is so specifically in case of the spindle cells which make us human and different from other animals and help the brain develop in this period. They develop after four months in a human baby because they cannot develop in us as they do in case of chimpanzees, orangutans and gorillas.

It will be easy with this description to understand that the brain has three main sections – the hindbrain, the midbrain, and the forebrain. The central core also known as (medulla oblongata, pons and midbrain are referred to collectively) the brainstem. It would be easier to discuss the structure along with the function various parts perform through Table 1.1.

Structure	Function
Cerebral cortex	The cortical areas include the primary motor area, the primary somatosensory area, the primary visual area, the primary auditory area, and the association areas.
Corpus callosum	Connects the two hemispheres of the cerebrum.
Hippocampus	Plays a special role in memory, particularly for episodes.
Amygdala	Involved in mediating emotion, especially fear.
Thalamus	Directs incoming information from the sense receptors to the cerebrum; helps control sleep and wakefulness.
Hypothalamus	Mediates eating, drinking, and sexual behavior; regulates endocrine activity and maintains homeostasis; has a part in emotion and response to stress.
Cerebellum	Concerned with the coordination of movement and motor learning.
Reticular formation	Plays a role in controlling arousal and in ability to focus attention on particular stimuli.
Medulla	Controls breathing and some reflexes that help the organism maintain an upright posture.

We need to take a look at the following diagram of the brain and its parts.





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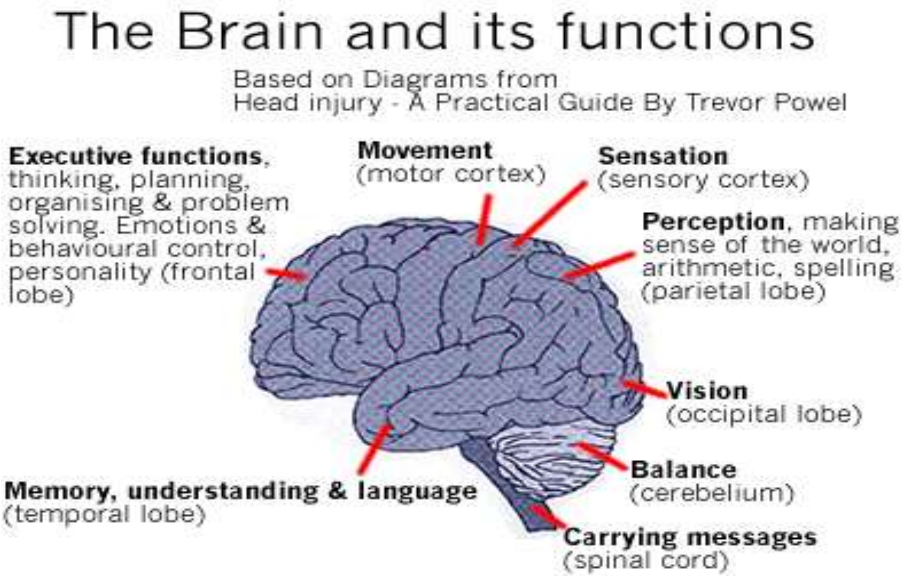
Integrative functions of the cortex

"Integrative functions" is an unclear phrase. It designates some of the obscure neural processes consisting of all events that take place in the cerebrum between its reception of sensory impulses and its sending out of motor impulses. These functions of the cerebrum include consciousness and mental activities of all kinds. Consciousness, use of language, emotions, and memory are the integrative cerebral functions. We would need to digress a little from our main thread of our argument and talk about language here before getting back to our discussion.

Language functions consist of the ability to speak and write and the ability to understand spoken and written words. Certain areas in the frontal, parietal and temporal lobes serve as speech centres – as crucial areas, that is, for

language functions. The left cerebral hemisphere contains these areas in about 90% of the population; in the remaining 10%, either the right hemisphere or both hemispheres contain them. Lesions in speech centres give rise to language defects called *aphasias*, e.g., with damage to an area in the inferior gyrus of the frontal lobe (Broca's area), a person becomes unable to articulate words but can still make vocal sounds and understand words heard and read.



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Specialization of Cerebral Hemispheres

The right and left hemispheres of the cerebrum specialize in different functions, e.g., the left hemisphere specializes in language functions – it helps

us do all the talking/speaking. It dominates the control of certain kinds of hand movements, notably skilled and gesturing movements, too.

Most people use their right hands for performing skilled movements, and the left side of the cerebrum controls the muscles on the right side that execute these movements. If one were to observe a group of people who are talking, then one can observe their gestures. The chances are about 9 to 1 that they will gesture mostly with their right hands which indicate left cerebral control.

The right hemisphere of the cerebrum specializes in certain functions. It seems that one of the specialties of the right hemisphere is the perception of certain kinds of auditory stimuli. Some studies show that the right hemisphere perceives non-speech sounds such as melodies, coughing, crying and laughing better than the left hemisphere. The right hemisphere may also function better at perception and in perception and visualization of spatial relationships.

Despite the special functions of the both parts of the brain, both communicate via the corpus collosum to complete many of the complex functions of the brain.

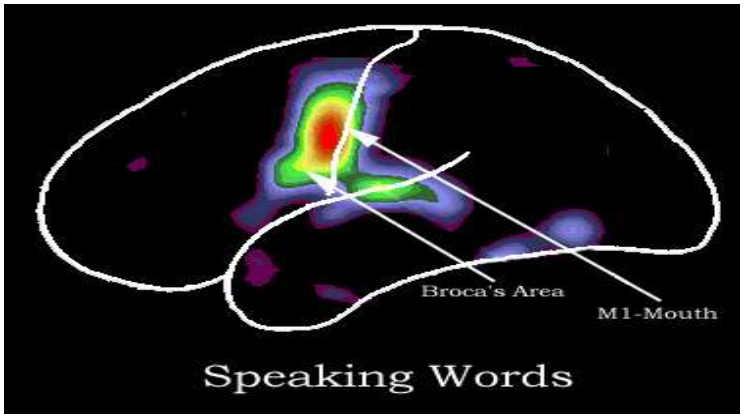
We have started this chapter with the discussion of what learning disabilities are and then I discussed, here, some parts of the brain very briefly. We would like now to go on the theme on which we would like to focus more of our attention.

The term "Dyslexia" has a root in Greek language: "dys" means "trouble/difficulty" and "lexia" is "word/s", which is how dyslexia is formed and means 'trouble with words'. To simplify it further, we can say that dyslexia means trouble with reading, writing and spelling. This trouble can be different from person to person.

According to Professor Julian Elliot of Durham University, UK, the label dyslexia is a myth which is why he suggests that we should not take it seriously, for the term is no longer useful. Other theories suggest that it is a medical problem and which is why it should be treated outside the school and with the help of the medical practitioners. However, these types of children, though they may not really be doomed, their future would not be safe if they do not get adequate and proper help. It is well known that people like Tom Cruise, Dame Agatha Christie etc were dyslexics and yet had their place

under the sun and did acquit themselves well in their respective areas of work. So it is possible for the dyslexics to be well-known and have a bright future than do normal people.

Different parts of the brain function together in helping us acquire language. A good look at the following pictures that show the parts of brain working on different skills would enable us to understand the working of the brain.



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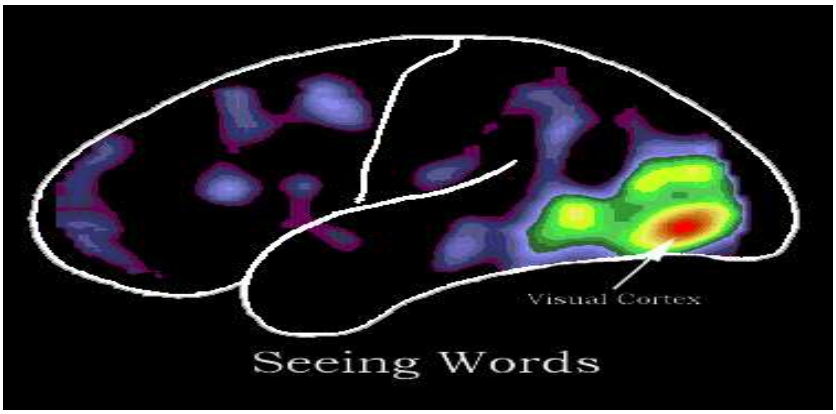


[http://www.alz.org/nationalimagessubpage_people_brain_scans_03.jpg]

We can see that figures 1 and 2 shows the parts of the brain which are used in functions like speaking and hearing. We have said that dyslexia can be defined as the disability to read, write and spell words, despite seeing and recognizing letters. Some of the features of dyslexia are discussed below.

1. Delayed Speech

Generally speaking, it is in the very first year after birth that children should be able to use single words, two- to three-word combinations during the second year, and small simple sentences in the third year. If there is any delay in this process, especially if the process delays even in the fourth year or after that, one needs to understand that the children concerned need special treatment.

2. Stuttering

Stuttering is common among children during the process of language learning, especially in the beginning because constructing sentences is the function of the left hemisphere, with the right side of the brain becoming active with regard to the gaps between the words and prosody. However, 90 to 98 per cent children with learning disability have problems in the right brain and it is that delay in the maturity which develops as a problem later.

3. Ear Infections

Middle ear infections, eczema and asthma are common in learning and behavioural problems and also can be identified as some of the symptoms of this. Again, this is a problem of right brain because the right side of the brain

controls the immune system as a whole although it seems that it affect the ears in the main.

4. Poor coordination

Poor coordination seems to be more a feature of dyspraxia than dyslexia but sometimes, it is to be found in a dyslexic child because anyway, these disorders are not diseases but the symptoms of the developmental delay syndrome. Human beings and some kinds of apes have a specialized area of the brain which controls the movement of hands and fingers in activities like writing and painting. A malfunction in this area sometimes leads to inability in a given child to hold the pen properly and write well.

5. Confusion over left- and right-handedness

According to scientific theories, the left brain should develop first in the matter of maturity and this is the reason why the most human beings are right handed people, in which case the left brain controls the right part of the body. The spindle cells are present in both sides of the brain but are concentrated on the right side. So this can spur on left handedness if there are any delays in the development. Alternatively, this can create confusion for a child for about

whether he/she if right handed or left handed and, therefore, which hand he/she should be using in order to write.

6. Convergence problems or reading words difficulty

When we read a text, our eyes make movements of rowing moving from one part of the page to the other. One such movement is called a saccade. Our eyes need to move with the words towards the nose and then away from it to the other side.

Sometimes the left eye of a child fails to move with words and consequently the child has problems in reading the text. If aggravated, this may give a child an illusory feeling as if the words on the page or the page itself were moving. It is the same illusion of movement that happens after one has had a drink too many. These problems of convergence are very dangerous for a child's development, especially when it comes to language learning.

7. Light sensitivity

Dyslexic children encounter another problem in the form of light sensitivity. This is so when they are hyper-sensitive to lights. Only a quick flesh of light during the examination can cause their eyes to stream. It is a problem of the

brain stem and may seem quite alarming, but can be improved with the parallel improvement in the developmental delay. Until then, the child concerned may often complain about the headlights of approaching cars at night or the bright sunlight.

8. Coexisting conditions

Disorders like ADD (Attention Deficit Disorder) and ADHD (Attention Deficit Hyper Disorder), dyspraxia, dyscalculia or dyslexia are closely associated with each other and some other behavioural problems, though not as diseases but mere symptoms of the developmental delay syndrome.

Dr Manuel Gomez, paediatric neurologist, Mayo Clinic sounds a warning when he observes that "There are more dyslexic children needing recognition and special teaching than all of the deaf, blind and retarded put together." Frances K. McGlannon, Director of the McGlannon School notes that

> It would be difficult, if not possible, to find any other disability affecting an estimated six million children in the United States today, on which so much research has been done, so many thousands of articles written, and yet concerning which so very little information has reached the average teacher or paediatrician, to say nothing of parents and public. These children are as handicapped by the ignorance surrounding their problems as they are by the problem itself.

Chapter-2

Literature Review

The term *dyslexia* is used to describe children who have significant reading problems. Some professionals use this terminology for all types of serious reading deficiencies. For others, according to Greene, the term points at a reading dysfunction that is neurologically based.

Some of the best specialists in the world like Silver and Hagin of the Department of Neurology and Psychiatry, New York University, Bellevue Medical Centre opine that "If a child is seriously retarded in reading and has normal intelligence, chances are about 9 in 10 that he has a specific language disability (dyslexia)."[1]

How cruel it is to think of reading in front of the class for a kid who cannot recognize the difference between *b* and *d* or *p* and *q*! The whole thing might appear to a child as if the teacher were trying to run him/her down in full public gaze. The resultant failure accelerates the process of developing a reading-phobia in him/her and the child concerned acquires a defensive mechanism against that reading problem like denial, blaming, laziness,

dependency, irresponsibility etc requiring some sort of psychological or neurological intervention from a trained psychologist or a neurologist. Delay in doing that may further aggravate the problem.

25 per cent of children in Asian countries are usually said to have some major or minor reading problems. That means one child in every 4 children may have lower or higher level of reading dysfunction.

We need to understand that dyslexia is not a disease but, as Robin Pauc (2006) notes, it is a syndrome which may even co-exist with some other learning disorders, motor dysfunction or behavioural problems like ADD (Attention Deficit Disorder) or ADHD (Attention Deficit Hyperactivity Disorder).[2] Dr Pauc is of the view that this is more like a symptom than a disorder because it comes with other neurological problems.

We know that the brain uses its many parts together to ensure that a given activity/action is completed. It is impossible to learn reading and writing with only one or two parts of the brain working. The left hemisphere uses almost three big portions to make a person a good reader. They are *Broca's area* (Inferior Frontal Gyrus) which is used for articulation or spoken word

analysis, *Parito-temporal area* which is used for word analysis or sensory speech and *Occipito-temporal region* which is used to form words. The forth major region which connects posterior language areas is *Angular Gyrus* which has believed to have functional links with these regions. Horwitz, Rumsey, and Donohue (1998), a strong regional cerebral blood flow in the left angular gyrus makes it possible to show a person strong within-task, to do things properly and across subjects' correlations in a normal human being.[3]

The studies we have been able to access reveal that reading disabilities cover at least 80 per cent of all learning disabilities. Among children with learning disorders, a majority may have reading dysfunction. This may happen when a kid listens to sounds, he/she can imitate these and that is how he/she can speak these out but the process of reading and writing are slow and complicated. With their growth and development, children progress from very early babbling stage to single words and so on, communication becomes easier, natural and automatic. This is the point where the distinction between good speakers but bad readers begins.

The main difference between speaking and reading is something remains beneath the surface. When a person speaks, he/she can just imitate the sound

that he/she might have heard but when he/she tries to read, first he/she sees the word or character written somewhere, then understands what it is and only then tries to recall the symbol from his/her mind so he/she can read that particular word or letter. This is a complicated process because the brain cells have to recall every symbol each time one wants to read a particular word or letter.

History tells us that human communication began in oral form first, and written language was developed much later. We can, therefore, say that writing is a relatively recent phenomenon in comparison with spoken language. Greene cites this belatedness to suggest that reading does not have any genetic imprints or the facility of natural acquisition. The things which cannot be acquired naturally have to be taught methodically. The problem starts here. Some learn it with relative ease but for some children, there is struggle in store to make sense out of the symbols written on the board.

Rawson, past president of the Orton Dyslexia Society, argues in *Annals of Dyslexia* (1985):

> Dyslexia is a condition manifested by difficulty with learning to read and write efficiently despite the presence of normal intelligence, adequate educational opportunities, and normal psychiatric make-up.[4]

Turkington and Harris are of the view that the ability to read requires a rich, intact network of neurons that connect the brain's centres of vision, language and memory.[5] Thus, a person with dyslexia may have the inability to distinguish or separate the sounds in spoken words. All of us have the image or symbol related to any particular word in our minds. When one says 'c-o-w', a listener can immediately think of a huge milch animal with four legs, a huge body, 2 eyes, 2 ears a tail etc., but for dyslexics sounds, sometimes, do not make any sense and so 'c-o-w' would mean nothing to them when the class is playing rhyming games for retention.

In its literature on the subject of dyslexia, the Texas Scottish Rite Hospital, Child Development Division observes

> Specific dyslexia is a developmental language disability that involves difficulty with the symbols of written language. By definition, this disability includes basic problems in learning the alphabet and its phonic properties, in word recognition, reading, reading comprehension, copying and spelling.[6]

Moreover, children with learning disabilities have a significant gap between their intelligence and the skills they might have achieved at each age. That means a girl whose IQ is 100 or 120 is intelligent enough to understand every subject but he/she cannot read or write a simple sentence without mistakes probably have reading disability, but if a severely retarded girl of 10 may speak like a 5 year old, she does not have any language or speech disorder because she has mastered the language that measures up to her intelligence, say Turkington and Harris.

The term dyslexia was first used in 1887 by Rudolph Berlin, who used it to refer to larger family of language disorders known as aphasia or difficulty either in understanding or producing spoken language or, perhaps, both.[7] In 1895, in the famous medical journal *The Lancet*, Dr James Hinshelwood, an ophthalmologist in England, discussed one of the cases. One of it was that of a well-read man of 58, who discovered one morning that he could not read anymore. It was a case of acquired difficulty in reading and not a case of being visually incapable. After this type of acquired difficulty case, Dr Hinshelwood turned towards the congenital word-blindness, and has published a series of papers and books about cases of such children in 1912.[8]

This acquired word-blindness is common in elders and congenital word-blindness happens in kids which comes with heredity and is inherent. It gave the physicians a chance to think about this sort of a problem where people can think, understand oral conversation, and speak easily but face great difficulties when they might have to read something that is written, for they feel that they do not know how to read. They can see the words but cannot read them. Sometimes, they can read the figures and can find out the solutions for numerical problems or are good at arithmetic. It is very unusual to believe and understand that this mis-wiring in the nervous system creates the situation where the '7' is readable but when 'seven' is written in letters, it becomes tough to understand for the dyslexics.

It is more troublesome in case of children because they feel embarrassed and if they are told to read in the class full of normal kids, they know that they will be ridiculed by others. Some search for alternatives for themselves or the other best art in which they can get fame like Leonardo Vinci did but it does not happen with everyone.

W Pringle Morgan, another ophthalmologist of Seaford, writing in the British Medical Journal in 1896 about a boy of 14 who was word blind.[9] This was in support of a German neurologist, Adolf Kussmaul who had coined the word "word-blind". Samuel Orton, a specialist in neurology and neuropathology coined the word 'strephosymbolia' which was described as word-blindness.[10] Samuel Torrey Orton, who is very famous for his books like his famous work *Reading, Writing and Speech Problems of Children (1937)*, announced in 1925 that he was going to conduct research on cerebral physiology for his patients who showed "a very special disturbance of the ability to learn to read."[11] However, in the absence of funds, this plan was postponed until Galaburda made a discovery that supports Orton's theory:

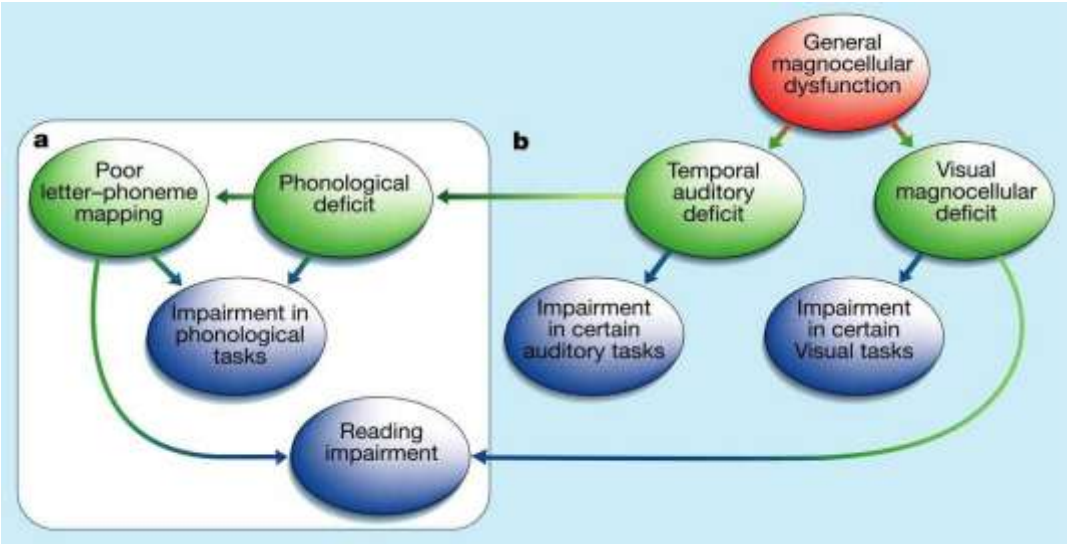
> the localized section of the brain that directs all aspects of reading skill is different in dyslexics. The anomaly or altered development exists in the formation of the cortex on the left side of the brain and is considered a significant cause of dyslexia.[12]

In her book *Overcoming Dyslexia*, Sally Shaywitz[13] has given details about how dyslexia was increasing rapidly in the countries. She reported that it was not only in Great Britain but in Holland (1903), in Germany (1903), and

France (1906). In 1903, this awareness travelled across the Atlantic to South America and then to the United States in 1905.

The most surprising matter is what ophthalmologists first stumbled upon in the course of their work. What seemed to be a problem with the eyesight of the patients turned out to be something quite. This was discussed by these doctors within the society they served because they were curious to know the reason why this apparently happens in normal children with good or high level IQ or why a person of 40 or 50 suddenly loses his/her capacity to read after a brain injury, tumour, or stroke.

Brain circuits work in groups and these groups flow information when one needs it. Dyslexia is a flaw in some specific brain circuits which controls rapidly flowing information. The fast processing auditory and visual cells are the major workers in a normal person to make a person good learner but in a dyslexic, this system does not work properly. The main step taken, then, was to point at the causes of the malfunction and whether it was related to any genetic cell deficiency, involved larger brain circuits, and occurred during brain development. 1994 saw dyslexia acquire a gene-basis theory.



Diagrammatic Representation of Language Deficiencies
[http://www.google.com/imagessearch/phonemicstructure_diagram.jpg]

Dyslexics are special because no one programme would suffice by way of remediation for all these children. Every child needs a different remedial programme especially designed for him/her. This happens, as Tuttle and Paquette says, because none of the children in any group share the same IQ and interest. Moreover, they suggest that these children might have trouble taking the information in or might have problems using the information once it is stored or might have trouble recalling it out on time.

Dyslexia, thus, is a syndrome or reading disability which occurs due to either phonological deficit, auditory impairment, or visual deficit. We will see more details about reading impairment and dyslexia with clues in Chapter 3.

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Chapter-3
Language Acquisition

I

Language is something with which we can express ourselves and it affects the language abilities, especially the reading or writing skill when language acquisition is poor or improper.

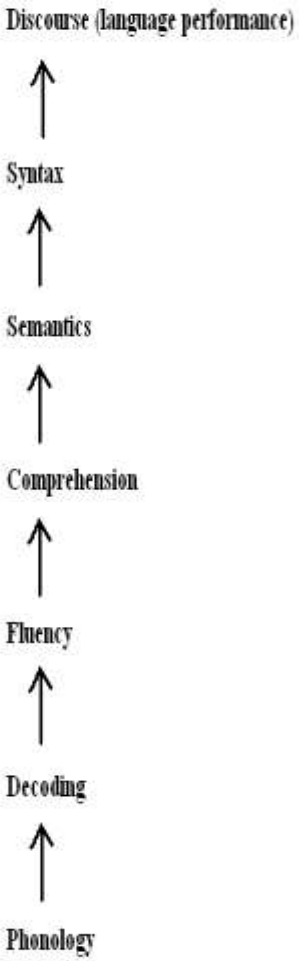
The first level for acquisition of knowledge of language is phonological level, which should be perfect if there is to be some knowledge of pronunciation, sounds of each and every letter etc. Phonological level is the most basic level because phoneme is the first thing to be learnt when one learns a new language. Phoneme is the root from where any word begins. Some vivid sounds make a word when they get together. For example, 'k', 'a', and 't' are three different sounds but when they put together, they make the morpheme 'cat' or the phonemic group /kæt/, which refers to a wild or pet animal belonging to the family of canines.

The definition of reading in Gough underlines it as "the ability to decode written symbols into spoken sounds." This is a definition that emphasizes

more of the mechanical aspects of reading involving the turning of the squiggles on a page into sound so as to comprehend it. However, there is another definition of reading which, in the words of Markman, "is the ability to recognize inconsistent information", wherein the emphasis is on readers' usage of higher level of thinking process (comprehending) to extract meaning from printed page and then to clarify that meaning by matching what the reader expects to find on the page with what is actually there. Gough and Tunmer (1986) put this in an equation: R= D*C.

The major elements of reading, according to two definitions given above are: decoding and comprehension. Decoding is a technical term used for converting the written symbols into spoken or heard language or the equivalents. The knowledge of phonology, mechanisms of reading, semantics and syntax are all very important and even necessary in reading. One cannot decode anything unless one knows the letters, the direction of reading, and how to blend sounds together. Wilder and Williams (2001) also suggest that there is need for proper and considerable attention skills and cognitive strategies in comprehension. If one has adequate knowledge of these sub-elements of decoding and comprehension, then it would be easier for one to learn how to read.

Hallahan et al (2001) argue that reading disabilities were, at the early beginning, believed to be caused by visual perception difficulties. The students with reading problems are confused about the letters and their mirror opposites sometimes (e.g., b and d, p and q) and sometimes they read words backward (saying ‘saw’ for ‘was’ or vice versa). These types of reversals are the main indicators of dyslexia or reading disorders. They also just switch the place of any letter in a simple word and change the words meaning or make it meaningless. (e.g. ‘enemy’ word can be made as ‘emeny’). Sometimes, they cannot find the exact word and they use the word which is close but not the correct phoneme (e.g. ‘lotion’ for ‘ocean’ or ‘humanity’ for ‘humidity’). It is natural to ask why this happens with dyslexics if they have good IQ and are intelligent in every subject but cannot read even the simplest words which are normally acquired by other class-fellows easily. Sometimes until Grade 3, no one can know that this hidden disability is destroying an intelligent child but when she has to read in front of the class, she is always ridiculed by others because needs extra time but still cannot finish. At this point, the child feels frustrated and just wants to get rid of reading at all. We need to go back to the root of the problem of why reading is a nightmare for dyslexics.



A model of reading and speaking, language system

Phonology Model

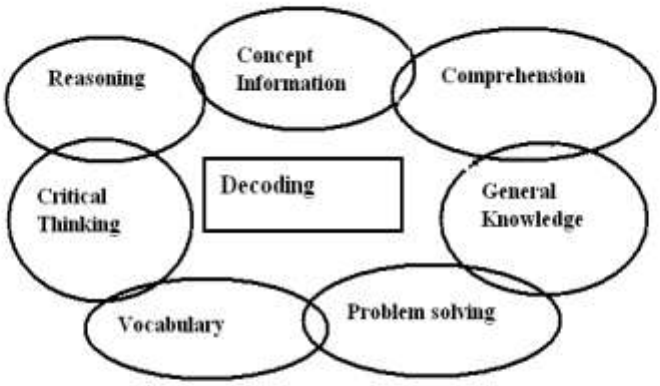
Phonology is the basic need for reading whatever is written. The problem in the root means the problem with everything. For dyslexics, phonology is the

main cause for not acquiring reading skill properly. The difficulty lies in phonology there.

Phonology is a science of phonemes. Phoneme is the smallest but the most important particle of speech. Phonemic awareness – the understanding that oral language is made of phonemes and because of this knowledge, one is able to understand and blend sounds, make words, rhyme and manipulate the sounds of the spoken words everywhere – is necessary tool for reading. Through repetition and retention, students acquire this ability and then they think that it's natural and that's why automatic but reading can be acquired only and that's why dyslexics have problems acquiring it. They don't have the same ability to acquire the reading skill as the other students do have. Speaking is a natural process and it comes through imitation of the surroundings but reading is the converse of speaking and that's why one has to grasp phonological background to be a good reader.

For being a competent reader, one needs to use her understanding about letters, their features, sounds, groups of letters and even words – identifying words. Pullen (2002) is of the opinion that blending and segmenting are component skills in decoding. Segmenting is related with taking apart the

words into their smallest units. Blending means the combination of different sounds to make a new word. Decoding is connected with so many other processes as indicated in the diagram below.



Sea of Strengths: Model of Dyslexia

Decoding is associated with fluency, accuracy, blending, grapheme-phoneme associations and automaticity. When a student cannot get this information properly or fail to get these skill components, she feels frustrated and discouraged because decoding is the process which cannot be natural in dyslexics. Before decoding, one must understand that words are made of phonemes, printed words can convey thoughts, ideas and experiences. The

phoneme blending is the skill through which one can recognize letters and break the code. It can be developed in recognizing morphemes / higher- level units of the language. It can be developed further in reading sentences and then, paragraphs. Fluency is smooth and effortless decoding, reading which sounds like talking. It includes three components: - rate, accuracy and expression. That's with confidence and so it is necessary because it allows the reader to decode automatically, which leads to greater comprehension.

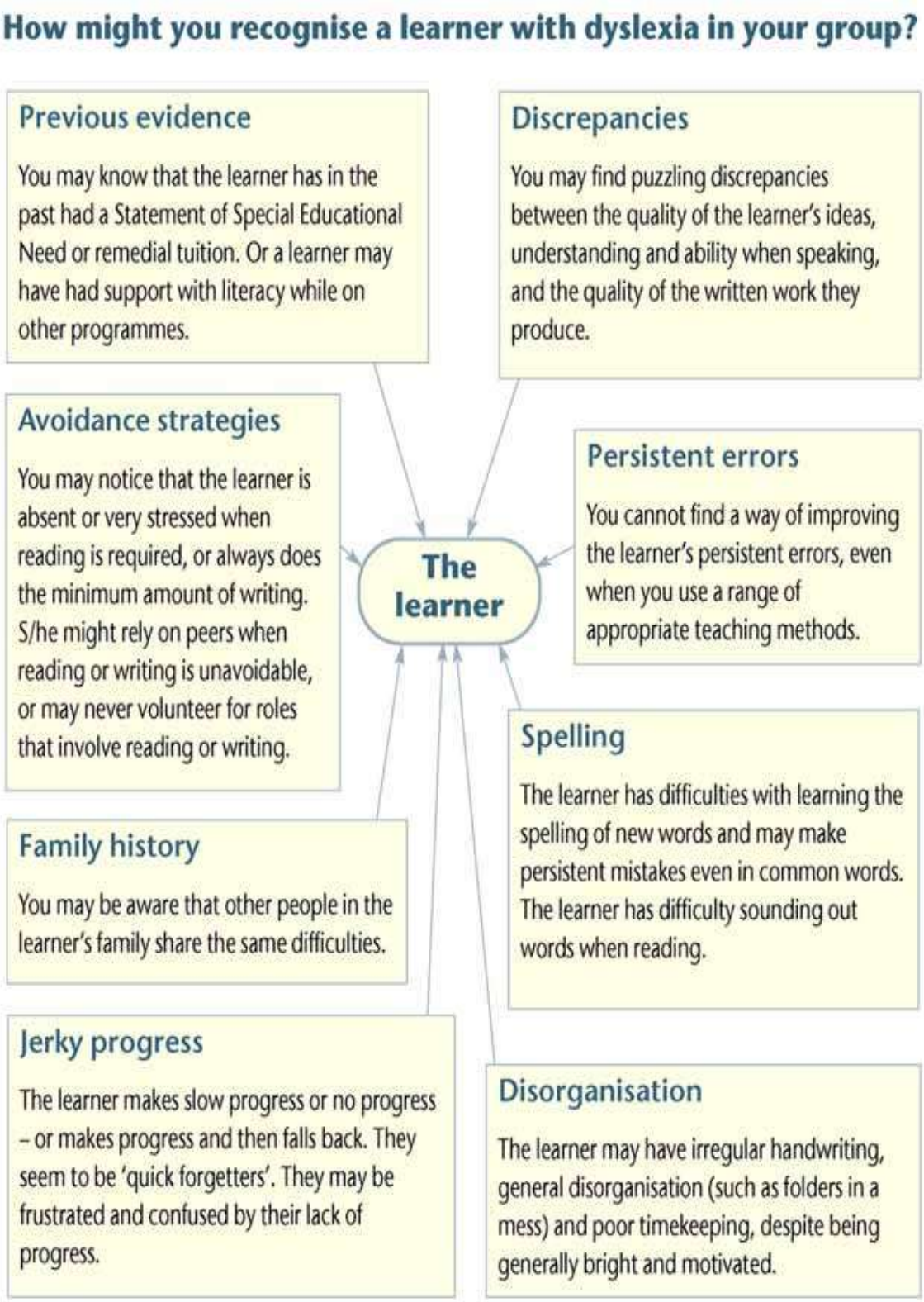
If one has problems with comprehension that means she has trouble with decoding, fluency and accuracy, too. For good comprehension, one must have proper working memory and good attention span. Comprehending is naturally connected with word/ letter recognition, decoding and spelling skills but if a student or a phrase to get the gist / meaning out of it, the comprehension would be very poor. With cognitive skills, general language abilities – syntax and semantics – are to be discussed with the reference of comprehension.

Syntax is the base to understand a new language because grammar is the base of any language whether it is spoken or written. Word order is the first matter to be discussed here. Morphological base should be good to get decoding skill. For phonological variations, one needs fluency, accuracy in decoding. If

she cannot read fluently with automaticity, it becomes tough to understand for her how syntax works or if she cannot get the automatic consistency in understanding the basic rules and regulations about how to understand the spoken or heard language, it becomes definitely sure that she has developed some decoding and comprehension problems and therefore to adopt a new language is a difficult task for her to perform.

Semantics is the science of the meanings. Words are special because of their meanings and they can get meaning in some context only so one has to get knowledge about semantics. To understand the theme of the given sentence, passage or even a single word, it becomes necessary to get/ remember/ recall the meaning of that particular given matter. The comprehension problems/ deficits affect this performance in an individual, too (Golinkoff and Rosinski, 1976). Because of being slow in reading, sometimes dyslexics change the meaning or forget what they have read before reading disabled students have common problem of naming pictures with long names and sometimes they cannot get the exact word for the thing or picture they are describing. Reading words in context is easier than reading the words in lists for them (Goodman, 1965). This happens because decoding becomes easier in such context. Moreover, if they can get the word easily, it makes them more

confident about every reading task afterwards. Reading disabled have minor vocabulary deficits also with lower scores in comprehension tests. Pronouncing the word is easier than getting the meaning of it. One has to remember it and it has to be repeated every time it is needed. Dyslexics/ learning disabled have specific difficulty getting the main points of the passages and that's why they cannot approach the nearby options/alternatives/answers or themes and give more importance to some minute things in the passage (Gerstein et al., 2001) and that's why teaching remediation should be done for higher-order thinking skills also (Carnine, Jitendra and Silbert, 1997) with phonemic awareness and good comprehension skills.



[http://www.google.com/imagesearch/recognizelearnerwithdyslexia_chart.jpg]

II

Studies show that girls generally don't have as many learning problems as boys have but in fact, some research say that this might be wrong and those studies might be done by some biased people or teachers. According to Sally Shaywitz (2006), the girls are also affected in the same category or sometimes worse than the boys do. Sometimes, teachers have this bias in mind that girls are very sincere and they can do all the exercises easily or learn easily because they are paying attention but it is not a truth. Research has proved that girls who were never diagnosed as a learning disabled had severe learning problems but they could hide it with their other performance skills.

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Chapter-4

Case Studies on Dyslexia

The supervisor of this research and the researcher spoke to the authorities in Maharashtra Dyslexia Association (MDA), Mumbai and tried our best to get them to help the researcher collect data from there. However, we were disappointed when we found those in authority quite reluctant to help, giving us a feeling as if they wished to keep on doing a hush-hush job.

A student of Modern English Language and Linguistics, English Language Teaching in Higher Education and Applied Linguistics, this researcher was more concerned with the language part rather than the remedial feedback as we know that we are technically not as well-equipped as trained neurologists to suggest remedial for the students affected by and undergoing counselling for dyslexia or some other learning disability. Since the researcher is not a student of psychology at any level whatsoever, she could understand that MDA might have felt anxious about the possibility of her disclosing the information about the students and, hence, they did not support her research. We were, therefore, left with no alternative but to use cases used by other authors in their books and seek solace in the data available on the Internet.

Case-I: Jamal Smith

Jamal Smith was a six years old boy in the first grade at Hereford Elementary School when his teacher, Ms Alice Hamilton, found some problems with his reading skill. He was a boy with lots of friends everywhere. He liked to talk about TV shows, dinosaurs and rockets and was a very good leader, too. He was good at sports and unusually happy all the time. He was the most eager student when a new lesson is taught in the classroom and wanted to move ahead. He was a helping hand to the peers for everything in the classroom and in the playground. Sometimes even he helped to organize the games on the playground. Alice contacted his mother and discussed the feelings she had for Jamal and the doubts, too, in detail.

The problems were discussed with the educational team and they came at the conclusion that Jamal had some learning difficulty. Let's talk about Jamal's difficulty in detail:

1. According to his teacher, Ms Alice Hamilton, he could read one or two whole books very well but when the same words were in front of him on a piece of paper, written on the black board or in a different book, it became too difficult for him to find out what the word was all about. She thought that he could not read but memorize the whole books and that is why he had those

books in his memory but he could not identify the different words or syllables. So everyone could see his reading something while he was just speaking the words he memorized before.

2. He could not take words apart into syllables and take sounds and blend them to create a new word.

3. Clinton Brown, Special Educator, evaluated Jamal's achievement using both standardized and informal measures, including the Woodcock Johnson Psycho-educational Battery-III (WJ - III) which is used to evaluate the achievement across the language arts and math domains. He also administered the Boehm Test of Basic Concepts and the Comprehensive Test of Phonological Processing, aiming at specific areas of difficulty mentioned by his teacher, Alice. At last, he also collected some informal writing samples and completed an error analysis and holistic evaluation.

He talked with Jamal's mother and told her that this boy was really a wonderful boy in himself and full of energy but he lacked some reading skills which were normally developed in every kindergarten kids of his age.

4. Maria Rivera, School Psychologist, collected data related to his intelligence, social relations and his behaviour and participation in the classroom environment giving him a standardized, norm- referenced test to measure intelligence, the Wechsler Intelligence Scale for Children – III (WISC - III) and completed a classroom observation to assess social relations and classroom context.

Maria noted deficits in his memorizing and repeating of digits and abstract assembly of objects. Sometimes only because of that reason he was disruptive and tried to recruit other fellow students in this activity, too. He had some behavioural issues might have been affecting his learning process and she because of this reasons, believed that Jamal was not a Learning disabled kid but having some behavioural problems and anxiety.

5. Clinton Brown determined that Jamal had some weaknesses in the areas of oral language, reading and written language. Specifically, he had difficulty with decoding words, spellings and comprehending text that does not include picture clues. He was not achieving as would be expected for his world knowledge and intelligence.

6. Jannette Jones, Speech – Language Pathologist, found out that Jamal had difficulty with rapid repetition of isolated sounds, in manipulate sounds or phonemes. In short, the skills that are really important in reading were Jamal's cup of tea. He had difficulty segmenting words into their distinct sounds. For example, he could say 'cat' but /c/ /a/ /t/ became insignificant for him as he could not understand what it meant.

7. At last, Maria accepted with everyone else that Jamal needs help as he had some learning problems. (Hallahan, Daniel P., Lloyd, John W. et al.)

Case-2

According to Suzanne Bateson – Winn, U.K. who is a concerned teacher, her one of the students talks about his difficulties copying from the board. She puts them in this sequence:

1. He cannot find enough time to copy from the board but he also does not like to stay in the classroom after the other students leave to copy homework from the whiteboard.

2. When his written work is checked, he has plenty of mistakes.

3. He has problems writing down the joined letters because he does not know always what letter he is writing.

4. He is never sure about what he has written.

5. The biggest problem is when he is trying to copy words from the whiteboard as he feels the words moving around and sometimes even two words become the same from him.

6. He feels better and can read in this dyslexia support group because his teacher uses blue background to write down.

Case-3

AJ is a healthy 10 year old girl having a professional family behind her. In stead of having an amazing vocabulary and imagination, she has had some difficulty learning to read and to write.

While speaking, she uses words in 'context' always, although, sometimes she does mispronounce some of them. She very often needs coaching before she

can articulate a word correctly. Her teacher says that she has been helped to make a correct pronunciation by breaking down the word syllable by syllable.

Until she was 7, she occasionally did mistakes in writing letters backwards, but it is improved now. She still has some problems with letters ‘b’ and ‘p’. She often misspells words even when she is copying them.

She has had some visual tracking problems also because of which she cannot find her way out from the copying homework, spelling words from the board in the school. But it is improved now vastly. She still skips especially the basic sight words in the sentences when she reads.

Her memory is a big problem for her. From the beginning of her Pre-school days, she has shown alarming incapacity to remember the simplest details. Some letters in the alphabet, number order, nursery rhymes, even the names of the friends and teachers are the biggest problem for her to remember and so she mixes them up all the time. For her, multiplication tables are the horrible nightmares. Telling time on a regular clock face is not her cup of tea even now. One can say that she does not have any time concept at all. For

e.g., she says, “it happened six or three minutes, or an hour ago” when she has to remark an event took place.

She also has problem with verbal multiple directions. According to her teacher, she performs very poorly on the written test even when her teacher knows that she can read the words on the given paper. Sometimes, her teacher feels confused that it is her low self-confidence for reading alone or her inability to read and understand the things altogether. (J.H., TN, USA).

Case-4

A teacher in U.K. faced the same problems with two dyslexic boys aged 9 and 7:

1. They make up the story using the illustrations which do not have any relations with the original text, rather than admit they can’t read it.

2. They can sound out the various parts of the words but are unable to synthesize the sounds to make a whole word.

3. They read only using present tense.

4. Sometimes the words come in reverse order from them. For e.g., ‘on’ for ‘no’.

5. Very often they add little words in reading which are not at all in the original text while reading.

6. They misread words which look quite alike, e.g., ‘house’ and ‘horse’

7. They substitute or misread little words. For e.g., ‘the’ and ‘a’; ‘from’ and ‘for’. (R. B. Suffolk, UK)

Case-5

Who does not know the story of Ishaan – the boy who is a dyslexic and badly treated everywhere and at last, finds a person who can identify his problem and try to solve that problem by raising confidence level in Ishaan. Yes, we are talking about *Taare Zameen par* – the movie produced and directed by Amir Khan recently. The movie is based on the problem of dyslexia in the children and how they are treated in our Indian society. The boy who is trying his best but cannot concentrate on a task simply because he has some neurological problems which are not very common in other kids of his age. Actually, it can be seen clearly when other children who are playing on the street ask him to give the ball and he just throws it in a different direction

than it told to be thrown at. He tells his teacher that he cannot read because the letters are dancing but the teacher cannot understand his problem and ridicules him in front of the class and that is the reason why he feels like not to be in the class anymore. He wants to be out in the world because no one knows him there and he can enjoy each and every moment of his life and get experience which he likes to gain in life. He goes home and paints the picture of that ice-dish which he ate during that short visit of the outer world but when he is scolded by his father repeatedly and held responsible for his doomed present and future, he feels horrified. His father certainly takes the decision to leave him in a boarding school which is not again a very good idea as this kid needs special attention and nothing else.

If he would have got the guidance how he should read and write in his school by his own teachers, there would not be any need of Amir Khan as a special educator in this movie. But like a very real situation, the boy could not get any help from his teachers and he is thrown there in a totally different world far from his home, and his mother with whom he is attached more than anyone else. The scrapbook which is made by him in the very last days before he has to leave his place and come to the boarding school shows his condition in his family – slowly moving far from everyone physically as well

as mentally. I personally believe that sometimes the parents are too much concerned for the success of their kids in every field that they cannot understand the slow learners of this type.

Ishaan feels that he is not needed anywhere and he is too alone in this world as no one can understand his problems but then like an angel a teacher enters in his life being an Art teacher who had a problem of dyslexia in his childhood and now working as a special educator. Identifying Ishaan dyslexic in the short time, he talks about the famous people in history who were dyslexics but got fame because of their own perspectives for life. He meets Ishaan's family and tells them what type of problem Ishaan is facing right now and why. Luckily he convinces the head master of the school to give Ishaan a special remedial teaching for some time and the mistakes in grammar and math are to be ignored by the teachers and meanwhile he will try to increase his level of confidence slowly.

He gives him the full time teaching material like cassette which is helpful for telling the stories of the textbooks in audio so he can listen and understand what the lesson is all about. He tells him to be free in his imagination and create whatever he wants to create from any waste thing or draw whatever he

likes. He also tells him that he as a kid was a victim of dyslexia and now he is a reputed teacher to motivate him from inside and these stuff work as Ishaan got motivated by these activities slowly and gets the fame as a Best Painter in his school and as a very good student, too.

When we look at the character like Ishaan, we need not feel pity for him but understanding of his kind of problem and try to support the kid in every possible way. Motivation can move a person towards her success and not the pity or hatred. The society of Indian background knows how to develop, to get success, to get fame. We are so much concerned for success and fame that we throw apart our sisters and brothers when they really need some help and support from us.

A developed country like USA knows about this syndrome for almost 100 years and working very hard to protect the kids who are dyslexics in anyway. They try to understand which type of problem the child is facing and the psychiatrist in the school helps the teacher to do so. They design special curriculum for these kids and different programs for varied children as the children differ in the IQ level, EQ level and grasping power also. If the kid is diagnosed with dyslexia, or some other kind of learning disability,

ADHD/ADD, or some other disability which can be a hurdle in their overall development, they talk with the parents during the Pre School period or the beginning of elementary school and send the child for those specific programs so the kid can come out with the strategy through which she can fight the syndrome and finds out the way to success in life.

The countries of the third world like India, Pakistan and Sri Lanka are still developing and basically Indians are very ambitious so obviously they will not like their kids falling back in their studies because of some LDs but naturally the mechanism of brain is not under anyone's control and 1 kid in every 10 children is dyslexic according to some psychiatrists in South Asia as we are the developing countries. India is well known for her intelligent software engineers, best administrators, very good managers and best businessmen, etc. so it is natural that it is hard to believe that even we have this syndrome in our kids but it is everywhere and we are not even conscious about it till now.

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Chapter-5

Conclusion

We have talked in the last four chapters how can a kid diagnosed with dyslexia and in which way the mechanism in her brain is working differently than other normal kids. They are not abnormal and not even mentally challenged students. These are the kids who can be the famous authors like Agatha Christie, or a famous painter like Leonardo-Da-Vinci. They have special ability in their own but they fall back in their studies because of their slow learning process and their finding math and letters tough to understand as they are. We normally create an image in our mind for every letter and every word we come across but they are not able to do so and here starts the problem. The language areas in their brains are not developed properly or may be having some different type of mechanism that cannot work in the way our brain does.

> A person who is working in a different way can be correct also and there cannot be just one way of doing something.

This can be the only path on which we can support our kids being motivated rather than thinking that being dyslexics they do not have any chances in the

world and their world just ends there with their own doomed future. What a kid wants is motivation and if he or she is dyslexic or learning disabled, s/he needs attention and extra care, some more support and motivation, some sort of inspiration, too. It is not very easy to do so but it is the demand of the time and situation for the parents of dyslexics as well.

The suggestive and effective programs which can help their learning reading in an appropriate way may have the phonemic awareness – noticing, identifying, and manipulating the sounds of spoken language in the first place and then phonics – how letters and letter groups represent the sounds of spoken language, sounding out words which also means decoding, spelling portion, reading sight words, vocabulary and concepts and reading comprehensive strategies. Afterwards, we may go for practice in applying these skills in reading and writing. We may train them for fluency and slowly by telling stories and listening to and talking about experiences, we can enrich some language experiences in these kids, too. We need not send them in special education but develop some strategies which can be helpful for their studies in future and they will be motivated to do some further development as everyone has her own choice of work and field in which s/he wants to dedicate her/his life. Powerful and effective programs can change

the whole world for the dyslexic kid as she can get the knowledge she wants and she can remember it as well as she can talk about it and read and write about it. The students with reading disability can develop some kind of inferiority complex in themselves and this feature demoralize the student as s/he becomes a good for nothing person in the future.

Students can be helped by the CD-ROMs and other effective ways of teaching in which way it seems enjoyment and not the burden for them. The programs can be more scientific and based on the proper studies or research in the past. The visual training and sight words training can help, too. The Acts like No Child Left Behind and IDEA work for this field for years in USA. In India, the story is different. We have many Acts which can support our kids if they are differently able but we feel ashamed of accepting this fact in public that our kids may have some disability or some kind of reading problem. Our government has passed so many Acts for the disabled children but in the school when they are thrown out the parents believe that the kids do not have the caliber to face the school and the difficult and complex education system and they fall backward throwing them in business or something else than study. They even do not try to understand why this happened with that kid believing that the kid is so notorious that s/he doesn't

pay attention in the class and that is why s/he fails continuously. There can be plenty of reasons why the student is not paying attention to the studies or cannot do some simple things like tying her shoe-laces, combing her hair or throwing a thing to a particular target. Sometimes, these poor kids cannot button their shirts in an appropriate way. They try to live in the dreams because they find this world too harsh to understand or totally boring. Many things are just out of reach for them because they cannot understand the instructions, identify the letters and remember the names by looking at the pictures. They know what is rocket but they can describe it very nicely if they are interested in it but they forget that it is called rocket and the image for everything merged up in their minds as they write the letters and math sums up-side down and even cannot read her/his own writing as it is always poor and full of mistakes. They may write many spellings for just one word as they do not know which is the right one and which is used by her before. In India, we are living in a multilingual society where everyone has different kind of language and that is why there is no need to teach the mother tongue to us but the second language and third language needs attention. We teach Hindi and English as second and third language respectively in Gujarat and the most common mistake we make is to teach the letters before the sounds. This is the biggest fault in our teaching system where the language starts with the letters

and not with sounds. It starts with writing and structural practice of grammar rather than with identifying and speaking the sounds and then reading it in a proper manner. Look at the warning signs for the children in the elementary school and the adolescents who may have dyslexia:

In School Years

___Very poor printing or writing, formation of letters and numbers in non-conventional directions.
___Works poorly situated on page, inability to "line up spelling word list" for instance.
___Difficulty cutting with scissors, coloring, and printing inside lines.
___Cannot tie shoe laces, button clothes, or hold a pencil well. (Finds a non-conventional way to hold pencil or pen.)
___Does not know the difference between (or late in understanding) the concepts of "up" "down," "top" "bottom," "in" "out," "in front of" "behind."
___Problems discriminating between letters, sounds and numbers.
___Verbal ability affected by stammering and/or repeated words & phrases.
___May have good verbal ability, but has trouble reading or putting thoughts or ideas onto paper.
___Reads but does not comprehend. (Understands it when it is being read but it is "gone" as soon as they look up.)
___Poor spelling.
___Difficulty playing with more than one child at a time, may prefer to play alone.
___Has trouble catching a ball, batting a ball, and/or kicking a ball.
___Has trouble copying from a blackboard.
___Difficulty expressing ideas or relating events in sequence.
___Emotional over changes in routines, easily frustrated.
___Seems unable to judge the consequences of actions.
___Difficulty remembering the names of things, seasons, months, streets, etc.
___Confused sense of time, trouble learning to tell time. (Difficulty with Math involving story problems to calculate length of time.)
___Confused sense of distance, trouble learning forms of measurements.
___Abnormal level of activity; either excessive purposeless activity or is "slow as molasses."
___Short attention span, seems to be a "poor listener," forgets or misunderstands verbal instructions. (When given three simple instructions to go do...they MIGHT get one instruction and confuse or forget the rest.)
___Very uneven results in areas of performance on testing with unusual highs and lows.
___Insomnia.
___Frequent stomach aches.

Parents and teachers should remember that these children may not pick up information from day to day living as others do. These children have had all the opportunities to learn at home that other children have enjoyed but need more time, and need to be taught in a step-by-step fashion. Parents can do a great deal to ease the way for such a child, such as tying his laces for him, (or buying shoes without laces) without comment and being ever-sensitive to materials and tasks that he can manage.Be careful not to set these children up for possible failure. (such as giving a clumsy child the grocery bag with the eggs to carry in from the car.)

In Adolescence

In adolescence , many of the symptoms, though likely still present and causing difficulties, will not be so readily observed. Maturation, peer pressure, emotional overlays, as well as survival and compensation techniques have become an influence in a child's life. They have incorporated their own *COPING MECHANISMS* to get them through each day.

If the disability has not been recognized, years of frustration and bitterness alongside a reduced level of academic progress produce the overall appearance of an "unmotivated and slow learner," and possibly disruptive "behavior problem."
Characteristics may appear as;

___Poor and laborious handwriting
___Bizarre spelling mistakes.
___Disorganized. Books in a mess, notes not in order, loses things.
___Does not plan ahead
___Poor judgment, doesn't learn from experience.
___Poor social skills, few friends or prefers to socialize with younger group.
___Lacks insight into his own future, knowing their own strengths and weaknesses.
___Lacking in logic, sometimes draws poor conclusions due to poor reasoning ability. (Can also come up with obscure logic which is correct & accurate.)
___Frequently good or better in one-person sports instead of team competition. (For girls it can be dance class, gymnastics, or sports. (Driving a car is uncomfortable, not natural.)
___Difficulty persisting with tasks, especially if difficult task.
___Average or above average in some academic areas, poor in others.
___Natural attraction to "artistic endeavors" painting, dancing, music.
___Tendency to be very literal, humorless, and gullible. (Efforts to have a "quick come-back" in an effort to be funny are usually inappropriate or nonsensical.
___Rarely relates past events or experiences in sequence or with detail.
___Vulnerable to peer pressure, often the scapegoat in situations. (This can manifest itself in dishonesty.

[http://pages.slc.edu/~ebj/educ-cog04/dyslexia/basic-brain.gif]

These are some of the signs which may be seen in the dyslexic kids and adolescents. There are plenty of programs which can be helpful in this area and the kids can be motivated by the teachers' attitude in the classrooms. Dyslexics need care and extra support as they are very special among the normal children.

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