

# CHAPTER I

## INTRODUCTION

### 1.0 Introduction

Education encompasses teaching and learning specific skills to augment all the physical, moral, mental and spiritual fibre of the human personality. Learning is the acquisition and development of memories and behaviors, including skills, knowledge, understanding values and wisdom. It is got by study, by experience, or by teaching. When children fail to learn, they impair the capacity to profit from new experiences. They are not able to learn because something prevents them from learning which may be internal or external causes. This is termed as “Learning Disability” (Umadevi, 1997). Many schools identify students who have average or above average intelligence but continuously fail to make normal progress in one or the other skills of learning namely reading, writing and arthematics. Teachers fail to understand the reason for this significant discrepancy between the ability and achievement of the otherwise normal child. The pressure from parents to improve the areas of academics where their wards are not able to score well makes the teachers all the more puzzled and helpless. Most of the schools, teachers and parents in India lack awareness about learning disabilities of children and the suitable intervention techniques to tackle it. Thus the learning disabilities in children go unnoticed and unattended in many children. Teachers need training to address the special needs of children (Rajakumar et. al., 2005).

India is thought to have approximately ninety million people with varying degrees of learning disabilities and an average class in schools has about five students with learning disabilities (Sunil Thomas, Bhanutej and John, 2003). The incidents of dyslexia in primary school children in India have been reported to be 2-18%of dyslexia (14%), of dysgraphia14.5% of dyscalculia (Shah, 1981 and Khanna, 1981). The prevalence of specific learning disabilities was 15.17%, whereas 12.5%, 11.2% and 10.5% had dysgraphia, dyslexia and dyscalculia respectively (Mogasale et. al, 2012). The Pratham Committee (2015) reports that the children of all classes lag behind two classes in their reading levels.

There is a need to create awareness among all about the learning disabilities of children in India. The immediate task of all the policy makers, educationists and government is to provide proper knowledge to all about the remediation strategies to the children struggling with learning difficulties in all the states so these children learn like their normal peers. Even though every child's need for assistance typically depends on the nature of learning difficulty of the child it is the responsibility of the school to plan and provide a suitable solution so that they learn to cope up with their academics. Until and unless their needs are met in regular classroom within the school, the Universalisation of Elementary Education and Equalization of Educational Opportunity to All cannot be fulfilled.

### **1.1 Learning Disabilities (LD)**

Learning disability is a general term that describes specific kinds of learning problems. Over time it is also called as learning difficulty and developmental disability. Whatever way it is said, It can cause a person to have trouble learning and using certain skills like reading, writing, listening, speaking, reasoning and doing math.

Children with learning disability, speak well, are smart and intelligent but with academic difficulties leading to emotional and behavior problems leaving the child frustrated and defeated. These children seem to have difficulty not only in processing information received from visual and sensory perceptual experience but also in organizing data to help read, write and to do maths (Farida, 2010).

Children with Learning Disabilities often experience low self esteem and self confidence due to stigmatisation. They often have a hard time asking for help because of fear of ridicule. Lots of people think erroneously that learning disabled kids are retarded! (Jason Fernandes, 1999). They are not always able to express their feelings in words and may use their behaviour or actions to express themselves (Department of Health, London, 2001). They have fewer acceptances from peer group with an underlying implications of disruptive life for themselves and for those around them if unhandled.

### **Definition of Learning Disabilities**

The development of learning disabilities as a category of disability was initially a reaction to the existence of a large number of children who were having a broad range of problems progressing academically, but who otherwise had no observable disabilities. The current federal definition of learning disabilities outlined in IDEA 2004 is the most widely used, although the definition proposed by the National Joint Committee on Learning Disabilities (NJCLD) is commonly referenced. The definition used in practice varies from state to state.

- “A learning disability refers to a retardation, disorder, or delayed development in one or more of the processes of speech, language, reading, writing, arithmetic, or other school subject resulting from a psychological handicap caused by a possible cerebral dysfunction and/or emotional or behavioral disturbances. It is not the result of mental retardation, sensory deprivation, or cultural and instructional factors.” (Kirk, 1962, *Educating Exceptional Children*, p. 263)
- The definition of Learning Disabilities in the Federal Law (IDEA-2004) defined the term specific learning disability means a disorder in one or more of basic psychological process involved in understanding or in using language spoken or written, which disorder may manifest it self in imperfect ability to listen, think, speak, read, write, spell or to do mathematical calculations

In addition to the IDEA,(2004) definition of learning disabilities, the definition proposed by the National Joint Committee on Learning Disabilities (NJCLD, 1997), an organization consisting of 13 professional organizations including the Council for Learning Disabilities and the International Reading Association is also frequently used. Both the NJCLD and IDEA define learning disabilities as involving deficits in a number of academic and cognitive areas. A third definition mentioned in the guide of Province of Columbia, 2011 as follows:

Learning Disabilities refer to a number of conditions that might affect the acquisition, organization, retention, understanding or use of verbal or nonverbal information. These disorders affect learning in individuals who otherwise demonstrate at least average abilities essential for thinking and/or

reasoning. As such, learning disabilities are distinct from global intellectual disabilities.

Learning disabilities result from impairments in one or more processes related to perceiving, thinking, remembering or learning. These include, but are not limited to language processing, phonological processing, visual spatial processing, processing speed, memory, attention and executive functions (e.g. planning and decision making).(NJCLD,2010)

Learning disabilities may also involve difficulties with organizational skills, social perception, social interaction and perspective taking. It can interfere with a student meeting his or her intellectual and life potential. Learning disabilities result in unexpected academic underachievement. Learning disabilities may impact the acquisition, organization, understanding, retention and/or use of information.

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

Frequently, learning disabilities are not detected before children start school. Many students with learning disabilities display no signs of difficulty, except when they attempt the specific academic tasks that challenge their particular area of cognitive processing difficulty.

Unlike many other disabilities, identifying a learning disability poses some particular challenges since processing disorders are assessed through inference based on student responses. It might not be obvious that a student's learning difficulties are due to a learning disability due to a deficit in one or more basic learning behaviours such as memory, reasoning, organization and perception. It must manifest itself in the form of one or more significant learning difficulties in one or more of seven areas oral expression, listening comprehension, written expression, basic reading skills, reading comprehension, mathematics calculation and mathematical reasoning compared with other children of the same age must be evidenced by a severe

discrepancy between intellectual ability and achievement (The Federal Register, 1999) and should not be caused by mental retardation, hearing or vision impairment, motor impairment, emotional and behavioural disorder or environmental disadvantage (U.S. Department of Education, 1999).

IQ Achievement Discrepancy as the criteria for identification of children with Learning Disabilities came under great concern in favour of Response to Intervention as an alternative to . (Fuchs, Mock, Morgan & Young (2003).

## **1.2 Types of Learning Disabilities**

Learning disabilities can be categorised as many and in some children all the types given below may materialise to some extent.

### **Learning Disability and Learning Difficulty**

These are two terms used by different countries synonymously and some used it with a difference. Learning Disability is the incapacitation to learn due to a significant, lifelong condition that starts before adulthood, affects development and leads to help being required to understand information, learn skills, and cope independently. The problem persists even after remediation or intervention. Without appropriate intervention, a learning disability puts children in great difficulty in learning with little scope of achieving at levels close to their academic potential.

Learning Difficulties arise due to difficulty in learning underachievement academically for a wide range of reasons, including factors such as: sensory impairment (weaknesses in vision or hearing); severe behavioural, psychological or emotional issues, multi lingual educational system, high absenteeism; ineffective instruction; or, inadequate curricula. These students have the potential to achieve at age-appropriate levels once provided with programs that incorporate appropriate support and evidence-based instruction. A learning difficulty could also be viewed as a normal deviance of brain function. Everyone has a difficulty in one area or the other. Most of the time, it does not interfere with day-to-day life, but when the area of difficulty is in the cognitive region it impedes intellectual development.

#### ***a. Dyslexia***

Dyslexia is one of the most talked about learning disabilities characterized by specific difficulties that hamper the ability to read. Their disability is not just limited to reading, it also affects their visual, auditory and motor skills.

### ***b. Dysgraphia***

Dysgraphia comes from two Greek words meaning 'poor' and 'writing'. It is the term applied to those whose difficulties are confined to the fine motor skills required for handwriting and it leads to problems with the expression of thoughts in writing. It is a specific learning difficulty as defined by the Disability Discrimination Act.

### ***c. Dyscalculia***

The word 'dyscalculia' means difficulty performing math calculations. In other words, it just means 'math difficulty' and especially it means a learning disorder which affects math. People with dyscalculia have specific problems in learning arithmetical concepts and procedures, despite sufficient educational experience.

### ***d. Nonverbal Learning Disability***

The motor clumsiness in Nonverbal learning disability is very deceptive in otherwise an intelligent child who is eloquent in verbal proficiency supported by flowery language and confidence, reach mile stones early like in reading and spelling. The problems usually surface on counts of visual-spatial skills, lacks organizational skills and poor social behaviour.

### ***e. Motor Skills Disability (Dyspraxia)***

Dyspraxia is sometimes called deficits in motor planning, It refers to a variety of difficulties with motor skills. Dyspraxia can cause difficulty with single step tasks such as combing hair or waving goodbye, multi-step tasks like brushing teeth or getting dressed, or with establishing spatial relationships such as being able to accurately position one object in relation to another.

Other difficulties that often accompany learning disabilities include difficulty with speaking and listening, poor social and emotional skills and disruptive behaviour. The learning difficulties for a child are identified based

on an individual's personal history (developmental, medical, family and educational), school reports, and psycho-educational assessment (Bettina E Bernstein, 2013).

Learning disability has not gained much attention in Indian context. It is observed that conversational level of LD children could be adequate, though they may have specific delays or deficit in acquisition on formal language assessment. Research with other Indian languages would need to be integrated into research on prevalence of LD in children with medium of instruction other than English. However, it is clear that LD is found in Indian children from both English speaking and vernacular backgrounds Karanth (2008).

### **1.3 Learning Disabilities & the Role of Government in India**

Information about SLD occurring in Indian children is scanty because of a general lack of awareness about this invisible handicap (Karande, Mehta, & Kulkarni, 2007). The first attempt at addressing the needs of children with special needs post independence was by The Kothari Commission 1964. The National Policy on Education in 1986 envisaged Equal Education Opportunity provision for these children. The Equal Opportunities for the Persons with Disabilities Act (1995) was an important resolution for improving the educational conditions of persons with disabilities proclaiming education in integrated settings. This is in conformity with Salamanca Statement (1994) where India as one of the signatories committed itself to promote the inclusion of children and youth in mainstream educational institutions

In 1992, India enacted its first legislation related to special education with the Rehabilitation Council of India Act which was to mandate minimum standards of education for professionals working with disabled individuals (Patanjali, 2005).

The three legislative acts came into force to cater to the educational needs of children with disabilities. While the RCI Act (1992) was solely concerned with man power development for the rehabilitation of persons with disabilities, the PWD Act(1995) is a significant endeavour to empower persons with disabilities and promote their equality and participation by

eliminating discriminations of all kinds. The third one is The National Trust Act (1999) for the welfare of Persons with autism, Cerebral Palsy, Mental Retardation and Multiple Disabilities. These three legislations for the rehabilitation and welfare of people with disabilities are comprehensive in spirit, and together deal with all aspects pertaining to rehabilitation like prevention, training, employment, long-term settlement, human resource development and research, and documentation (Sarva Siksha Abhiyan, 2003). However, Specific LD is not included in any of these acts. The difficulty in diagnosis of Specific LD has made the formulation of a National Policy for these children no easy task. In the year 2011, the Indian government has taken first initiative to include different hidden disabilities and mental disorders in the draft disability bill in the replacement of Persons with Disability Act (1995) the recent Bill (Rights of the Persons with Disability Bill 2014) has included SLD and recognized it as a disability. It is passed in Lok Sabha on 15<sup>th</sup> Dec 2016 recognising the need for a separate bill for disabilities specially specific learning disabilities. So far the rights of the specific learning disabled children are hidden and forgotten by the Indian government like their disability (Kamala, 2014).

The Rights of Persons with Disability Bill of India, 2014 defines “specific learning disabilities as a heterogeneous group of conditions wherein there is a deficit in processing language, spoken or written, that may manifest itself as a difficulty to comprehend, speak, read, write, spell, or to do mathematical calculations and includes such conditions as perceptual disabilities, dyslexia, dysgraphia, dyscalculia, dyspraxia and developmental aphasia”.

As a result, selected states have tried to provide for children with LD by bringing in their own legislations. So far few states made provisions for learning disabilities in their states. SLD has still not been recognised as a disability by many state governments in India (Karande, 2008; Karande, Sawant, Kulkarni, Galvankar, & Sholapurwala, 2005). Maharashtra is the first state in India in 1996 to avail benefits of special provisions/accommodations for Children with Dyslexia to complete education in the regular mainstream schools (Karande & Kulkarni 2005).

Subsequently in the last few years the state governments of Karnataka, Tamil Nadu, Kerala, Gujarat and Goa have also granted these provisions/accommodations. In Mumbai the awareness of specific learning disabilities among parents, teachers and doctors is still minimum (Karande, 2008). The Central Board for Secondary Education (CBSE) and the Indian Council for Secondary Education (ICSE) recognize learning disabilities provide the benefit of availing certain provisions (e.g., extra time during written exams, dropping algebra, geometry for lower grade of mathematics and work experience) from standard I to XII.

### **1.3.1 Some Judicial Directives and Initiatives by States**

- Mumbai High Court directed all schools in Maharashtra to abide by the guidelines for Children with LD (*Times of India, 22nd July, 2006*).
- The Delhi High Court, for example, recognizing dyslexia as a form of disability, has ordered Delhi University to grant admission to dyslexic Children under a three per cent quota for people with disabilities.
- Government of Goa in 2005 gave incentives to the families of the children with special needs, slow learners and children with LD, are given financial benefits, such as transport, uniform allowance and allowance for aids and appliances. Institutions are also given incentive money in order to promote inclusion.
- “Implementation of RTE Act, The Right of Children to Free and Compulsory Education Act (2009), which has come into force with effect from 1st April, 2010, and resultant revamp of Sarva Siksha Abhiyan” (2010) enumerated a systemic overhaul of the entire content and process of education with significant implications for curriculum, teacher education, educational planning and management specially for Children with Special Needs.

Sarva Shiksha Abhiyan, SSA (2000) attempts to bridge all gender and social category gaps at primary stage and achieve universal retention by 2010. The major strategy being employed for providing access to education for all (including disabilities) is by convergence of existing provisions for this group.

## **1.4 Specific Learning Disability (SLD)**

The term “specific learning disability is a term used to indicate difficulty in any one or more of the areas of learning disability namely dyslexia (reading problems), dysgraphia (writing problems) so on, involving psychological processes affecting the capacity to read, write, listen or do mathematic calculations.

Specific Learning Disability as defined by IDEA implementing regulation 34 CFR 300.309 determining the existence of a specific learning disability, states that a child has a specific learning disability...if

- (1) The child does not achieve adequately for the child's age or to meet State-approved grade-level standards in one or more of the following areas, when provided with learning experiences and instruction appropriate for the child's age or State-approved grade-level standards and...
- (2)(i) The child does not make sufficient progress to meet age or State-approved grade-level standards in one or more of the areas...when using a process based on the child's response to scientific, research-based intervention;
- (2)(ii) The child exhibits a pattern of strengths and weaknesses in performance, achievement, or both, relative to age, State-approved grade-level standards, or intellectual development to be relevant to the identification of a specific learning disability.

**Some of the major types of specific learning difficulties are:**

### **(1) Oral Language Disabilities**

#### **Dysphasia**

It is partial inability to comprehend the spoken word (Receptive dysphasia) and to speak (expressive dysphasia) which is believed to be the result of injury, disease or maladjustment of the brain.

#### **Aphasia**

It is loss of ability to comprehend manipulate or express words in speech, writing or gestures. It may be auditory aphasia.

## **(2) Reading Disabilities**

### **Dyslexia**

A severe difficulty in understanding or using one or more areas of language, including listening, speaking, reading, writing, and spelling. This involves a partial inability to read or to understand what one reads aloud.

### **Alexia**

Loss of ability to read what has been written or in printed language.

### **Hyperlexia**

A difficulty with text comprehension, despite much more fluent and skilled oral reading.

## **(3) Writing Disabilities**

### **Dysgraphia**

A severe difficulty in producing handwriting that is legible and written at an age-appropriate speed. This refers to partial inability to write which is due to visual or motor integration disorder and execution of motor patterns needed to write or copy letters, words and numbers.

### **Agraphia**

It refers to total inability to write.

### **Spelling problems**

Most of the learning disabled students have spelling problem.

### **Dysnomia**

A marked difficulty in remembering names or recalling words needed for oral or written language.

### **Dyspraxia**

A severe difficulty in performing drawing, writing, buttoning, and other tasks requiring fine motor skill, or in sequencing the necessary movements.

#### **(4) Arithmetic Disabilities**

##### **Dyscalculia**

Severe difficulty in understanding and using symbols or functions needed for success in mathematics. It involves partial inability to perform calculations.

##### **Acalculia**

This denotes the total inability to read or write isolated number or its series or the way they are spoken (fifty one = 51 & not as 501) recognizing place value or doing computational operations.

#### **(5) Phonological Difficulties**

Difficulties in perceiving, manipulating and/ or articulating the segments of sound that makes up words.

#### **(6) Social awareness and Communicative Difficulties**

Difficulty with social awareness, empathy and functionally effective communication (may be linked to or described as Aspergers, high functioning Autism, semantic-pragmatic disorders or visual-perceptual/non-verbal difficulties)

#### **(7) Expressive/ Receptive Language Difficulties**

A motor and/or cognitive weakness with processing and organizing expressive and/or receptive language.

#### **(8) Processing Speed Difficulties**

Difficulties experienced by a child in processing information, and in reading or writing at the speed that might be expected. The quality and accuracy of a pupil's writing or reading may be at the expected level - but for these students, cognitive, perceptual and/or motor factors means that their processing is unduly slow and laborious.

#### **(9) Auditory Perceptual Problem**

Trouble in taking information through the sense of hearing and or processing that information. People with this problem frequently hear

inaccurately. A sequencing of discrimination error can change the meaning of the entire message. Some auditory perceptual handicaps are:

**Auditory Discrimination Problem** - Trouble in telling the difference between similar sounds, such as 'th' and 'f' or 'm' and 'n'; hearing "seventeen's" instead of "seventy"; hearing an angry rather than a joking tone of voice.

**Auditory Figure-Ground Problem** - Trouble in hearing a sound over background noise: for example, being unable to hear the telephone ring when one is listening to the radio, or having difficulty hearing someone talking at a party when music is playing.

**Auditory Sequencing Problem** - Trouble in hearing sounds in the correct order, for example, hearing 'nine-four' instead of 'four-nine'; hearing 'treads' instead of 'street', hearing music garbled because the melody is perceived out of order.

#### **(10) Catastrophic Response**

An involuntary reaction to sights, sounds, extreme emotions or other strong stimuli. This may result in losing one's temper, becoming dazed or unaware of one's surroundings, or "freezing" for a short time.

#### **(11) Cognitive Disorganization**

Difficulty thinking in an orderly and logical way people with this problem often jumps to conclusion and have difficulty planning tasks.

#### **(12) Crossing the Midline**

Trouble with moving one's limbs across the centre of the body. This could include difficulty writing across a page, sweeping a floor or controlling a steering wheel.

#### **(13) Directional Problem**

Trouble in automatically distinguishing left from right; learning north, south, east and west; learning the layout of a large symmetrical building.

#### **(14) Inter Sensory Problem**

Trouble using two senses at once or associating two senses, for instance, not realizing that the letter "d" which is seen, is the same as the sound "d" when it is spoken; being unable to feel someone tap you on the shoulder while you are reading; being unable to listen to conversation and drive at the same time.

#### **(15) Memory Problem**

Short term, Trouble remembering; names, numbers, specific facts, what happened a few minutes ago. A poor memory makes academic success difficult.

#### **(16) Motor Problems**

Trouble moving one's body efficiently to achieve a certain goal. Some motor problems are;

**a. Perceptual Motor Problems** - Trouble performing a task requiring coordination because of inaccurate information received through the senses. This may result in clumsiness, difficulty in participating in simple sports, awkward or stiff movements.

**b. Visual Motor Problem** - Trouble seeing something and then doing it; learning a dance step while watching a teacher, copying something off a blackboard, throwing something at a target

**c. Auditory Motor Problem** - Trouble hearing something and then doing it, following Verbal directions, dancing to a rhythmic beat, taking notes in a lecture Barr (1974).

#### **(17) Perceptual Problems**

Trouble taking information in through one's senses and/or processing that information.

#### **(18) Proprioceptive Problem**

Trouble knowing where one is in space. A person with this problem might not be able to tell the position of her limbs with her eyes closed.

### **(19) Soft Neurological Signs**

Signs of central nervous system dysfunction that can be observed; staring, turning the head instead of moving the eyes, inability to look people in the eye, not holding the head straight, being easily startled. 17

### **(20) Tactile Perceptual Problem**

Trouble taking information in through the sense of touch. Some tactile handicaps are:

**a. Immature Tactile System** - People with this problem dislike being touched lightly, but crave pressure touch, such as being hugged hard or huddling with knees to their chest. Until the immaturity is overcome, tactical discrimination cannot develop.

**b. Tactile Defensiveness** - Tendency to avoid being touched because of an immature tactile system.

**c. Tactile Discrimination Problem** - Trouble feeling the difference between similar Objects, such as bond or regular typing paper, light or heavy sandpaper, silk or cotton, ripe or unripe cantaloupe.

**d. Tactile Pressure Problem** - Trouble judging the right amount of pressure needed to perform motor acts, holding an egg in two fingers without breaking or dropping it, tapping someone playfully rather than hitting them.

### **(21) Vestibular Perceptual Problem**

Problem with one's senses of balance, for example, a tendency to lose one's footing on a curb.

### **(22) Visual Perceptual Problem**

Trouble taking information in through the sense of sight and/or processing that information. Some of these are:

**a. Visual Figure-Ground Problem:** Trouble seeing a specific image within a competing background; finding a face in a crowd, finding keys on a crowded desk, picking out one line of print from the other lines in a book.

People with this problem cannot see things that others can see; to them, the keys on a crowded desk are not there.

**b. Visual Discrimination Problem:** Trouble seeing the difference between two similar objects, such as, the letters 'v' and 'u' or 'e' and 'c'; the difference between two shades of one colour or two similar types of leaves. The person with this problem sees the two similar objects as alike.

**c. Depth Perception Problem:** Trouble perceiving how far away (or near) an object may be; For instance, we may not know how close the fork is to our hand or how far to reach to put a glass of water on the table.

#### **1.4.1 Writing Skills and Dysgraphia, a Specific Learning Disability**

Writing is a very important task that needs the monitoring and guidance of a teacher on the nuance of writing properly for a meaningful and purposive writing activity. If we are to improve in any meaningful way how and what students write, we must be dedicated to the importance of writing. (Graham, et, al, 2001). Writing is a skill highly valued in our society. In the past, handwriting was prized because it was a primary form of communication. People needed to send notes to others that were legible (Ediger, 2002). Now computers are used to communicate between people still handwriting holds its pristine position as the technology free visual aid to communication. Handwriting is still needed for many reasons that people might not readily recognize like writing notes, recipes, prescriptions, messages, checks, and filling out applications are among a few reasons why the development and teaching of handwriting skills need to be continued in the schools and at home. Although writing is the province of elite and clergy at one time, this is no longer the case now. Over 7 billion people that is 85% of the world's population write now (Swerdlow, 1999).

On January 23, 2012, researchers and education thought leaders convened in Washington D.C. for Handwriting in the 21st Century, An Educational Summit to discuss research and opinions regarding the role of handwriting instruction in the 21st century classroom. During the Summit, attendees overwhelmingly agreed that both handwriting and keyboarding skills are necessary for the success of students in 21st century.

## **1.4.2 Dysgraphia**

Dysgraphia or Agraphia, as it is sometimes referred to, is a specific deficiency that affects the ability to write not due to intellectual impairment. It is the delayed development or acquired loss of the skill of writing which may affect one child in twenty. Dysgraphic behaviour is a true disorder and may continue into adult life. It is common to find evidence of dysgraphia in other members of the family, particularly among males.

Studies show that about one in five may struggle with writing some have dysgraphia, which affects their spelling (Virginia Berninger, 2013). Dysgraphia is characterized as an LD in the category of written expression when one's writing skills are below those expected given a person's age measured through intelligence and age appropriate education.

Dysgraphia comes from two Greek words meaning 'poor' and 'writing'. It can manifest itself as difficulties with spelling, poor hand writing and trouble putting thoughts on paper (Marentette, 2011).

People with dysgraphia usually can write on some level and often lack other fine motor skills finding tasks such as tying shoelaces difficult. It often does not effect all fine motor skills. They can also lack basic spelling skills (for example having difficulty with 'b' and 'd', 'p' and 'q') and often will write the wrong word when trying to formulate thoughts on paper. Children with this disorder may have other learning disabilities but they usually have no social or other academic problems.

## **1.4.3 Causes of Dysgraphia**

There can be a number of different reasons why an individual may have a specific writing problem

Some factors that may cause dysgraphia are as follows:

### **1. Asymmetrical Tonic Neck Reflex (ATNR)**

It can result from immaturity and the neurological pathways involved in the co-ordination of head, arm, hand/eye movements confirmed by the presence of the Asymmetrical Tonic Neck Reflex (ATNR) in the school age child. A retained or residual ATNR in the older individual can result in specific

difficulties in learning to write. This is because when the head turns to follow the direction of the writing hand, the arm and the hand want to extend making it difficult to hold the pen, bend the arm and bring the hand back to write on the left hand side of the page.

## **2. Neurological Factors**

Neurological theories state that learning disabilities is a reflection of structural damage or improper development of the nervous system. Such problems could occur during prenatal or postnatal period, as the nervous system is developing. Alternatively, head injury, lack of oxygen, exposure to toxins, seizures and nutritional deficiencies may contribute to central nervous system damage. De Salles et.al (2006) observed relation ship between reading/writing problems to neuropsychological factors.

## **3. Environmental Factors**

They can directly play a role in causing learning disabilities. Research shows that factors such as malnutrition, prematurity, poor prenatal and post natal health care, stress, poor parenting and teaching can have a negative impact on learning. Environmental pollution play a critical role specially lead and pesticides (Virginia A.Rauh et.al, 2016).

## **4. Immaturity and the Neurological Pathways**

This involved in the co-ordination of head, arm, hand/eye movements. This is because when the head turns to follow the direction of the writing hand, the arm and the hand want to extend making it difficult to hold the pen, bend the arm and bring the hand back to write on the left hand side of the page.

## **5. The Foetal Brain Damage**

It is due to delayed delivery. Premature birth can occur because the brain is starved of oxygen at birth or through near drowning, sustained high temperature, head injury or stroke could be one of the causes of poor handwriting. Factors that affect brain are many and varied, damage resulting from toxic substances such as drugs, alcohol etc.

## **6. Experiential Deprivation**

Children coming from economically and culturally backward homes may exhibit some characteristics of dysgraphia due to the absence of experience, role modelling and training from parents to provide the experience due to their own lack of knowledge in the art of correct penmanship.

## **7. Acquired Dysgraphia**

The Acquired dysgraphia refers to an acquired disorder of writing (Weekes, 2005), It is observed in the present day class rooms may be due to inadequate instruction, neglected attention by the teachers and parents resulting in a stereo type awkward hand writing not set right initially becomes a habitual illegible hand writing.

## **8. Toxemia, Bleeding, Prematurity and Low Birth Weight**

Some scientists believe that, in many cases, the disturbance begins before birth. Pregnancy complications such as toxemia, bleeding, prematurity and low birth weight substantially proved to be the cause of reading difficulty. Rh-incompatibility, maternal endocrine disorder, maternal age, reproductive readiness, radiation, drugs alcohol, tobacco, accidents and anoxia are also reported to be causes for learning disability in children.

## **9. Genetic Factors**

It is observed that a child, whose parents have had a writing disability, is likely to develop the same disorder. Support for genetic theory is found in studies that show that learning disabilities run in families.(Snow et. al, 2000).The concordance rate is higher for identical than fraternal twins for reading disorder. Some findings suggest that genes on chromosome 15 or 6 may cause reading disorder for a minority of individuals (Pennington, 1991). It is observed that reading disability, dyslexia runs in families. Paracchini S, Scerri T, Monaco AP, (2007).

### **1.4.4 Areas of Difficulty in Writing Skills**

There are four main areas of Difficulty in writing. They are Fine Motor Difficulties, Hand Writing Difficulties, Spelling Difficulties, and Difficulty in written Expression as explained below.

### **a. Fine Motor Difficulties**

Fine motor difficulties of a child are identified when a child has Poor muscle tone, Fidgets, restless, frowns lip biting, cries to write, Moves from place to place to avoid writing, Tight awkward pencil grip, Awkward body position, high pitched voice to avoid writing, complains pain when writing, in arm or shoulder, Visual-motor problems, Slow or laboured copying or writing from board, Loses place while writing, Not recognising the same word in the next sentence (Dinehart and Manfra, 2013).

### **b. Hand Writing Difficulties**

Hand writing difficulties of a child are identified when illegible hand writing, inaccurate copying, continuous erasals, irregular font size, shapes of letters, unfinished or omitted words or letters, mixing capital letters with small letters, cursive with printed letters. Sometimes orally good but while writing makes mistakes, reversals and mirror images of letters and numerals, difficulty staying on line or margin, runs all words together without space are observed in his/her written works (Graham, 1997, Berninger et.al,(2003)

### **c. Spelling Difficulties**

When a child is observed to have difficulty with silent words, like psychology, illogical pronunciation like knife, wright, difficulty with same ending but different spellings, sion, tion, cian etc, difficulty with words that have two pronunciations eyes, ice, hear, here but different meanings, trouble noticing, remembering, and recalling the features of the language that letters represent, difficulty remembering individual sounds in the words, meaningful part of longer words, then the child is identified as having spelling difficulties (Graham, 1999)

### **d. Written Expression Difficulties**

When a child is observed to have Poor presentation skills, frequently needs verbal cues, lack of sequential process, syntax errors are prominent in the written expression, low vocabulary skills in writing skills, losing track of main points of the concept being written, inconsistent and erratic written work, subject- predicate, verb tense errors are serious problems in written expression (Graham 1999, Graham & Harris, (2005), Bernstein (2008).

### **1.4.5 Identification & Assessment of Children with Dysgraphia in India**

The 2004 Individuals with Disabilities Education Improvement Act (IDEA) and subsequent regulations published in 2006 have significantly changed the identification process for students suspected of having specific learning disabilities. Rather than using a discrepancy model contrasting intellectual and achievement test results, assessment specialists now incorporate a variety of methods to identify specific learning disabilities, including response-to-intervention, cognitive processing approaches, and the determination of a pattern of strengths and weaknesses (Edward Karl Schultz, Cynthia G. Simpson, and Sharon Lynch, 2006).

Approximately 10-14% of the 416 million children in India have LD (Krishnan, 2007; Krishna Kumar, 1999; Mehta, 2003). At present many children with SLD studying in non-English (vernacular) medium schools, and especially in rural areas, are going undetected for non-availability of standardized psychological and educational tests (Karande, 2008). Early indicators that a child may have learning disability include delays in speech and language development, motor coordination, perception, reasoning, social interaction, prerequisites to academic achievement and other areas relevant to meeting educational goals. These indicators may occur concomitantly with problems in self-regulation, attention, or social interaction (Lowenthal, 1998; McCardle, Scarborough, & Catts, 2001).

Low agreement and little evidence of validity for LD identification decisions based on Pattern Strength and Weakness methods plague the problem of identification of LD. An alternative may be to use multiple measures of academic achievement to guide intervention. (Miciak, et, all.,2013)

The issue of identification of specific learning disability cases in Indian context is perhaps more complex as classroom conditions are far from ideal, socio-economic factors, bilingualism and multilingualism, limited proficiency in the medium of instruction may play a significant role in Indian educational system. The class sizes are big, and there is no screening tool available for teachers to identify SLD. The issue of assessment of SLD is further complicated by the fact that various Education Boards (Central and State Boards) have different syllabi.

An evaluation and identification of specific learning disability of children in India is a herculean task with various factors like illiteracy of parents, non availability of standardized tests in all languages which are the media of instruction in all government schools especially in rural areas. In the absence of special educators for diagnosing SLD in children, the regular teachers should mandatorily get training to teach all children with different learning needs in their under graduate and graduate classes. Special in service training should also be given to all the teachers on all aspects of learning disabilities. Standardized tools for testing are not easily available in India, nor do we have indigenous tools for identification of learning difficulties, intelligence testing and testing for proficiency in reading and writing are available.

The language of the testing tools is occasionally unsuitable to Indian children who may not be proficient in English. In India the poor exposure of many of these children to education & knowledge makes diagnosis even more cumbersome process where many of the assessments were incomplete due to lack of cooperation for the lengthy testing for Specific Learning Disabilities (Srinath S, et al., 2005). Some of the screening tests available in India are in English, Marathi, Gujarathi, Hindi and Tamil. Few assessment tests are given below.

Swaroop & Mehta's Learning Disabilities (1991) Checklist is used by many schools. There is GLAD test (NIMH) to identify grade wise learning disabilities in primary school children. The checklist for LD in the Sarva Shiksha Abhiyan Manual (2003) is also a helpful tool for initial screening by teachers in the schools.

However, at present, the assessment itself is being used as ascreening/identification procedure. The children are referred for assessment by the school/teacher for reasons of failure, underachievement or behavioural problems. For the same reasons, parents may take the child directly, and avail of examination concessions that exist in some states. In the rural areas, there is nearly no awareness of LD and practically no assessment facilities.

National Test Development Library of NCERT compiled few assessment tests. They do not cater to the assessment needs of children with

learning disabilities. Western tests on written language are not suitable to the tri lingual nature of Indian conditions where different types of schools follow different grade level standards for languages. In the absence of common syllabi among State boards, Central Board (CBSE) and ICSE on one side as many as 20 languages as media of instruction in government schools of various states on the other side makes a standardized uniform test tool in writing a very difficult task. There is wide disparity between cities and rural schools. While the prevalence of LD is more in villages the awareness and knowledge about learning disabilities is very minimal. Teaching in English with proper pronunciation is a problem not just of children. Many teachers of English also falter in pronouncing words properly. Age and grade appropriate tests both in some way fail to diagnose the prevalence of learning disabilities properly as there is no hard and fast rule in these villages to send their children to school or preschool by a particular age. Consequently, relating “adequate instruction” and “social opportunity” as is required by definition of SLD is very challenging. Specially so because children from varied backgrounds from an urban child enrolled in pre-school at age 2½years with early and sustained support to a rural child attending school for the first time at age 6½years with no additional literacy support of any kind is a tremendous task (Karanth, 2002)

Direct assessment of academic skills, (Curriculum Based Assessment) is one alternative that has recently gained popularity. It is quick and offers specific information about how a student may differ from his peers (National Information Centre for Children and Youth with Disabilities, 2000). It is helpful to compare the present level and the effectiveness of a strategy after intervention.

Class room observation over a period of time by the teacher, the work samples and notes of the Children help the assessment team identify areas of concern which may be focused on at the time of intervention.

A Response to Intervention theory gained popularity with two levels of intervention-1. Mainstream classroom in which the teacher has been supported by the school to implement research-validated instruction 2. small groups of three to six nonresponsive students would participate in a

demonstrably effective standard-treatment protocol. A student's nonresponsive performance at each of the two levels may be seen as evidence that she requires the individualized, intensive, expert help that special education should provide (Fuchs, Mock, Morgan & Young, 2003).

### **1.5 Rationale of the Study**

Today, a large number of schools and institutions across India are sensitive to the fact that 15 percent of all school-going children have some degree of learning difficulties. Writing difficulties are typical to a child and may affect learning and behaviour in any children, including those with potentially average or above average intelligence. With limited background knowledge in reading texts like English, Science, Social Studies it is doubtful to know how much these children understand the material. (Russell Gersten; Lynn S Fuchs; Joanna P Williams; Scott Baker, 2001). Remediation and early intervention are to be typical to the nature of learning disability of each child and planning the strategies should be as per the learning style of a child is the only solution to this plaguing problem of learning disabilities of children.

The draft educational policy declared by the government of Telangana to make free and compulsory education from KG to PG with English as the medium of instruction warrants the study on Specific Learning Disabilities in general and dysgraphia in specific all the more significant and important. It is an urgent necessity to equip the rural and urban Telangana State both at the primary and high school level with intervention strategies to tackle learning disabilities. The alarmingly growing learning disabilities show poor reading and writing skills, with illegible hand writing with illogical sentence construction that reflect poor grammar mechanics in all the children. This is especially more in those schools where the medium of instruction is their mother tongue.

In a country where 20 regional languages are the media of instruction in as many as 29 states and 7 union territories standard of learners is not up to the expected level. Their achievement level is a matter of concern, more so in terms of writing skill. Some educators wonder if children no longer enjoy the slower, more refined process of written communication because they spend so much time watching the fast-paced entertainment of television.

There is a great need to improve the learning abilities of children by providing additional instructional strategies to read and write is clear whether enrolled in government schools or in private schools. Children receiving this additional support have better learning outcomes than those who do not (ASER, Pratham Report, 2012). If writing matters, then writing instruction needs to improve (Graham & Perin, 2007; National Commission on Writing, 2006; National Writing Project & Nagin, 2006).

### **1.6 Need and Importance of the Study**

We are half a century behind the developed countries in tackling learning disabilities in children, main reason being lack of awareness on the prevalence of learning disabilities, tardy research and almost zero statistics on the data about the SLD children. Most of the (research and intervention) work in the area of LD is being done by private organizations and the NGOs (RCI, 2006). There is little communication between these organizations and the state educational authorities and very few studies on Dysgraphia.

Prevalence rates of Children with specific learning disabilities involving math and written expression are difficult to estimate given the current lack of research evidence (Cook L, et al., 2001). The ASER Report (2015) says that 80 million children are in the age group of III, IV & V classes in India where 48% are below II class standards in basic skills like reading writing and arithmetic. Immediate attention is needed to help many of these children in these classes to quickly acquire basic skills to progress in school.

Writing is the most important form of communication and a foundational skill that can influence students' confidence in reading, writing, language use, and critical thinking (Saperstein Associates, 2012). The skill of communicating in writing is the highest level of language arts skills. Handwriting provides children with the opportunity to create internal models for the symbol system necessary to succeed in academic disciplines (Dinehart, 2013).

A successful career in jobs often demands good written skills in communication with some writing responsibilities of writing, drafting and projecting effective presentation skills in writing. Although adequate writing skills are indispensable for life, leisure, and employment, many Children do

not learn how to write effectively, because writing is an exercise in thinking. It is important to balance the process of writing with the mechanics of writing. Many Children who have low expectation for their own academic success will not make an effort to complete assignments. Every one agree that explicit handwriting instruction is necessary and should be part of the regular class schedule (Asher 2006; Ste Marie et al., 2004).Despite agreement about what constitutes good writing instruction, effective strategies are not widely used (National Commission on Writing, 2003& 2006).

Children use writing to communicate, share knowledge, learn, persuade, explore feelings and beliefs. Writing is the primary instrument that teachers use to evaluate academic performance. As one climbs up the ladder pre primary to primary to high school, writing tasks are considerably more demanding.

Studies conducted by the Sree Chithira Thirunal Institute of Medical Sciences and Technology in Kerala in 1997 revealed that nearly 10% of the childhood population has developmental language disorders of one type or the other and 8-10% of the school population has learning disability of one form or the other.

Screening for LDs for Classes I to VII in schools with follow up assessments by experts in 10 panchayats in Kerala revealed that 16% of these school children have a learning disability (Suresh, 1998).Other studies have been done at Child Guidance Clinics in India (Khurana, 1980; John &Kapur, 1986) where 20% children attending the clinic were diagnosed to be scholastically backward. However, variables such as the socio-economic class, exposure to foreign language act as confounding variables in such clinic-based studies (GEON, 2005).

Of all the SLDs some effort is made by some states on Dyslexia. Dysgraphia as a concomitant condition of dyslexia has been taken up. Dysgraphia on its own did not make much in roads into India. There is no nationwide study conducted so far on the prevalence of Dysgraphia which is a more pressing problem of disability in writing skills of children with as many as 65% of 4<sup>th</sup> class 53% of the 5<sup>th</sup> class children exhibit reading and

comprehension problems in Andhra Pradesh (Pratham, 2012). Hence early identification and timely intervention is essential.

Children with specific learning difficulties constitute 15% to 20% of student in Indian classroom. The student with physical disabilities and specific learning difficulties combined together constitute 25% of Children in classrooms. In fact, these children are the potential drop outs from the schools. Unfortunately, in India, many children with SLD often remain undiagnosed because of a general lack of awareness leading to chronic poor school performance, class detention and even dropping out of school (Karande and Kulkarni, 2005; Karande, 2008). The dropout rate for Telangana is 22.32% at the primary (Class I to V) level alone and 38.21% at the secondary level (Class I-X). The ASER Report (2014) conducted by Pratham found that in the rural areas of Telangana, this issue can be attributed to the employment of children in agriculture and allied activities, especially during harvest season. The primary school I- V age group contribute to the highest number of children among all the school going age groups in this State. Hence there is every need to attend to these children and their learning difficulties to stop the avalanche of future drop outs in Telangana State to make their dream of making every government school a centre of excellence at par with private schools come true.

So the present study on the intervention strategies for children with writing difficulties is very much important and vital for the good academic outcome of a child struggling with writing difficulties. It is one step towards providing an effective classroom strategy that helps the children overcome their writing difficulties.

### **1.7 Statement of the Problem**

The title of the study is **“Impact of Intervention Strategies in Overcoming Dysgraphia among 4<sup>th</sup>& 5<sup>th</sup> Class Children at Primary Level in Telangana State”**

### **1.8 Operational Definition of Terms Used in this Study**

The operational terms used in the study are given below.

#### **Impact**

The action of one thing having a marked effect or influence on someone or something (Merriam, Webster, 2013). The impact of the intervention strategies such as activities to tackle dysgraphia are carried out in this study.

### **Strategy**

A method or plan chosen to bring about a desired future such as achievement of a goal or solution to a problem (Kenneth Andrews, 2012).

### **Learning Disabilities**

There are various types of Learning Disabilities like dyslexia, dysgraphia, dyscalculia, nonverbal learning disability and dyspraxia. For the present study the researcher selected children with dysgraphia enrolled in private schools.

### **Dysgraphia**

It is a difficulty with producing written symbols, usually resulting in slow and poor quality handwriting that's connected to problems with fine motor skills. The sub skills under dysgraphia are Fine Motor Skills, Hand Writing skills, Spelling Skills, Written Expression Skills.

### **Intervention Strategies**

Intervention strategies are developed as a solution to a particular problem. It is a multi faceted approach, tailoring intervention plans to a child's specific needs.

The intervention strategy pertaining to the present study is based on the writing skills needed for a good pen man ship namely Fine Motor Skills, Hand Writing Skills, Spelling skills, Written Expression Skills and Behaviour Manifestation Skills. The skills of handwriting, spelling, vocabulary, sentence construction, and paragraph writing are the building blocks of proficient writing. For the present study instructional strategies are prepared based on the need of the primary children incorporating seven Recommendations of effective strategies by Graham and Perin (2007), for teaching writing, (Graham, S 2010) and Harris, K. R., Graham, S., & Mason, L (2006).

## **Fine Motor Skills**

Any strategies for fine motor problems should be need based typical to the problem or difficulty of the child. However, the initial stress on writing for such children were on content and mechanics of writing rather than quality or neatness, since many of them could not simultaneously work or focus on both (Richards, 2005). The Intervention Strategies for Fine Motor Skills are intermingled with the other writing problems as every fine motor skill development will also help tackle the hand writing, spellings, written expression problems of writing difficulties.

It is the coordination of small muscle movements usually involving the synchronization of hands and fingers with the eyes. The skills under Fine Motor Skills that help develop writing skills include 12 sub skills namely fine motor coordination, memory, recall, spacial and directional coordination, muscle, hand & finger dexterity, in hand manipulation & eye hand coordination, kinaesthetic awareness and tactile discrimination, auditory and visual motor coordination and drawing skills. In this the researcher used 12 types of activities to develop fine motor skills.

## **Hand writing Skills**

The art or practice of writing by hand is hand writing skill. The Hand Writing Skills under writing difficulties are divided into 13 sub skills. The sub skills under Hand Writing Skills include difficulties in overall legibility, alphabet formation capital & small letter mixing, letter size and font and direction, reversal of letters and numbers, add or omit spaces or letters between letters and words, slow and laborious writing, frequent erasals and wipe offs, write in all directions, write in line and on margins, tight pencil grip, problem copying from board, akward paper position.

## **Spelling Skills**

The manner in which a group of letters representing a word are spelled is called spelling skills. There are 7 sub skills o spellings. They include basic grade level vocabulary taken from the text books of 4<sup>th</sup> and 5<sup>th</sup> class children and dictation, phonetics, auditory, visual discrimination, blending (syllabication) and decoding words, reading fluency and comprehension.

## **Written Expression Skills**

It is skills in phonological awareness, hand writing and spelling, writing conventions, sentence level skills, text structure, the functions of writing and planning and revising functions. It has two components. Grammar and Writing Comprehension.

### **Grammar Skills**

The Grammar of the written expression aspect has 6 sub skills based on the grade level grammar prescribed by SCERT for Telangana state syllabus. They include but not limited to capitalisation & punctuation, articles, prepositions, conjunctions, active passive voice, degrees of comparison, antonyms and synonyms, nouns, verbs, adverbs, adjectives, clauses, phrases, simple, complex compound sentences.

### **The Writing Comprehension Skills**

The Writing Comprehension skills are high end literacy skills mastering which is not only essential but vital for a proper oral communication of a child. There are six sub skills which are a part of the state syllabus curriculum for 4<sup>th</sup> and 5<sup>th</sup> class children in English. They are developing hints and word choice, logical sentences, ideas and content, integrating sentences and organizing ideas, narrative and expository writing, visual and picture comprehension and contextual clues and conventions based on the study by Baker, Gersten and Graham (2003), who conducted a study of research based applications and examples to teach students with learning disabilities how to organize writing tasks, generate ideas about the writing topics, and produce final written products that were coherent and organized.

### **Behaviour Manifestation Skills**

The difficulties to manifest proper age appropriate behaviour due to specific learning difficulties of a child in turn reflecting as Social problems, distraction and disruptive behaviour, low self esteem, self confidence, peer problems, attention problems, frustration, anger, anxiety and depression are the most frequently reported behavioural problems of a SLD.

## **Multi Sensory Approach**

The approach using auditory, visual, tactile, kinaesthetic Activities augment the learning of a child through the varied experiences is called multi sensory approach. The multi sensory approach adopted for the present study is a direct realization and instant recognition of immediate recognizable change in the learning of a child when visual, auditory, kinesthetic or tactile learners show response to one or the other or all the approaches which were carefully implemented for each and every individual learners's choice.

### **1.9 Objectives**

To successfully plan the intervention approaches for children with writing disabilities, a well set of objectives will help in a great way. The following major objectives were framed for the study to:

1. Identify & assess the children with Dysgraphia at the private schools.
2. Find out different types of writing difficulties encountered by the children.
3. Develop and Validate intervention strategies for the children with Dysgraphia.
4. Compare the writing skill development of children before and after intervention.
5. Compare the development of major writing skills viz., Fine Motor Skills, Hand Writing Skills, Spelling Skills and Written Expression Skills of children before and after the intervention.
6. Analyse the difference in the writing skills with respect to different variables viz., Class, Gender, Age, Locality and Family Income.

### **1.10 Hypotheses of the Study**

The null hypotheses of the study are as follows:

1. There exist no significant difference in the pre and post scores of the 4<sup>th</sup> and 5<sup>th</sup> class children in the writing skills viz., Fine motor skills, Hand writing skills, Spelling Skills, written Expression Skills and Behaviour Manifestation Skills before and after adopting the intervention strategy.
2. There exist no significant difference in the pre and post scores of the 4<sup>th</sup> and 5<sup>th</sup> class children in the sub skills of writing skills viz., sub skills

in Fine motor skills, Hand writing skills, Spelling Skills, written Expression Skills and Behaviour Manifestation Skills before and after adopting the intervention strategy.

3. There exist no significant difference in different types of writing difficulties encountered by the 4<sup>th</sup> and 5<sup>th</sup> class children due to variations in their gender before and after adopting the intervention strategy.
4. There exist no significant difference in different types of writing difficulties encountered by the 4<sup>th</sup> and 5<sup>th</sup> class children due to variations in their age before and after adopting the intervention strategy.
5. There exist no significant differences in different types of writing difficulties encountered by the 4<sup>th</sup> and 5<sup>th</sup> class children due to variations in their family income before and after adopting the intervention strategy
6. There exist no significant differences in different types of writing difficulties encountered by the 4<sup>th</sup> and 5<sup>th</sup> class children due to variations in their locality of the schools before and after adopting the intervention strategy.
7. There exist no significant influence of pre and post mean scores of class on the pre and post scores of writing skills with class as the co variate.

### **1.11 Scope of the Study**

The scope of the study is very wide and are listed below. This study may

- Provide an effective classroom strategies that help the children to overcome their writing difficulties.
- Bring effective improvement in the writing skills of children.
- Be of a very valuable information to students, teachers, educationists, special education consultants, doctors, psychologists, parents and the policy makers in India as there are very few studies done on Dysgraphia.
- Incorporate the intervention programme content in the current teacher training curriculum.

- Create awareness to the public on the early identification and intervention strategies for writing difficulties.
- Promote a change in the stereotypic attitude of the parents, society, and community to the learning difficulty of the child.
- Bring self confidence and positive change in behaviour of the children.

### **1.12 Delimitations**

- The study involved private schools to maintain homogeneity in terms of text books and syllabus for the children.
- The study is limited to three districts of Telangana State.
- The study is restricted to 4<sup>th</sup> and 5<sup>th</sup> classes.
- The study is limited to English language

### **1.13 Organisation of the Thesis**

The researcher has organised the research study into five chapters. The details of the chapters are as follows:

- Chapter I : Deals with introduction proceeds with the Learning disabilities with specific focus on Dysgraphia, conceptual Frame work of the study, Statement of the problem, Operational terms used, objectives and proposed hypotheses, scope and delimitations of the study.
- Chapter II : Deals with Review of literature pertaining to major areas related to the present study.
- Chapter III : Describes the methodology employed for the study is explained with the Research design, Sampling technique, Research tools, Implementation of Intervention Programmes for writing skills, Data gathering and Analysis procedures.
- Chapter IV : Provides the results under three sections and made interpretations followed by discussion.
- Chapter V : Includes the major findings, discussion, Effectiveness of Intervention strategies, and further suggested research recommendations and conclusions are reported in this chapter.

The details of Bibliography and Appendices used in the study are also presented.