

**EFFECTIVENESS OF SELF INSTRUCTIONAL MODULE ON
LEARNING DISABILITIES IN TERMS OF KNOWLEDGE
AND PRACTICE AMONG TEACHERS IN SELECTED
SCHOOLS, DHARAPURAM.**

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CHAPTER – I

INTRODUCTION

“Children require guidance and sympathy far more than instruction”

- Annie Sullivan (1889)

Background of the study:

Learning is a life long process. Psychologists define learning as the process by which change in behaviour result from experience or practice.

According to the National centre for Learning disabilities, LD is neurological disorder that affects the brain’s ability to receive, process, store, and respond to information. The term learning disability used to describe the seeming unexplained difficulty a person of at least average intelligence has in acquiring basic academic skills. These skills are essential for success at school and at workplace and for coping with life in general. LD is not a single disorder. It is a term that refers to a group of disorders in listening, speaking, reading, writing and mathematics.

(Malik Sadak,et . al ;2009)

Lalitha, K., (2009) stated that children under 15years of age constitute 40% of the total population. The WHO had declared that as one in five children in the world have handicap, it is a serious obstacle to a child’s development. Mental health disorders account for the 10th leading causes of disability in the world of children aged five years above. Prevalence rate of 20-30% of

psychiatric disorders in school children has been reported in India, and among them learning disabilities constitute 1 in 10 children. Differences by 'gender' shows that, boys are more likely to be identified as having a learning disability. In 2004, 10 % of boys and 6% of girls age three to seventeen had a learning disability.

Lyon Reid, G., (2008), stated that recent research indicates, however that disability in basic reading skills is primarily caused by deficits in phonological awareness which is independent of any achievement capacity discrepancy. Deficits in phonological awareness can be identified in late kindergarten and first grade, using inexpensive, straight forward testing protocol. Interventions have varying effectiveness, depending largely on the severity of the individual child's disability. The prevalence of learning disability identification has increased dramatically in the past 20 years. Some researchers have argued that the currently recognized 5% prevalence rate is inflated. Others argue that LD is still under identified. Sound reasons for the increase include better research a broader definition of disability in reading focusing a phonological awareness, and greater identification of girls with learning disabilities. Unsound reasons for the increase include broad and vague definitions of learning disability, financial incentives to identify students for special education and inadequate preparation of teachers by college of education, leading to over referral of students with any type of special need. If these problem, are not diagnosed at an early stage, the drawbacks may get

carried into adulthood, impeding the progress of a student. Specialized teaching methods will help students to overcome these handicaps.

LD affects concentration, coordination, language and economy such disability may even affect the general health. When a student is affected by the weakening of the reading, writing aspects mentioned, the classroom performance gets affected. **(Suguna, R; 2001)**

Lalitha, K., (2009) stated that as the children with learning disability find it difficult to adjust in schools, teachers are also challenged to find ways and provide them with very best instruction possible. The best sources of assistance and the most promising pool of resources are to be found right there in school.

Modern methods of teaching demand on the teacher an ability to find out the weakening of or the disability to learn on the part of the pupil. A wall should not be set up between the teacher and the pupil. The teacher should understand that in his earlier and younger days, he too was a student with a number of deficiencies. Dedication, devotion and discipline along with enormous patience and love for the children alone will help a teacher to encourage students with such disabilities to overcome them and learn slowly but gradually.

Need for the Study:

According to **Individuals with disabilities act in US (2003)**, learning disabilities a disorder in one or more of the basic psychological processes involved in understanding or using language, spoke or written which may manifest itself, in an imperfect ability to listen, think, speak, read, write, or do mathematical calculations.

Global learning disabilities it is still referred to in the International classification of diseases occur in at least 3% of the population. Psychiatric disorders are two to four times as common in children with learning disabilities with 30 – 50% having mental disorders. (**Simnoff, E; 2005**)

Individuals with disabilities act in US (2003), has reported that 5% of school aged population have been affected with learning disabilities and 52.4% of all students with disabilities ages 6 – 21 years. Boys out number girls four to one.

Karnath, K., (2003), estimated that the prevalence of learning disabilities is quite high in countries like Great Britain (14%), France (12 – 14%), USA (10 – 15%), Canada (10 – 16%).

Department of health in England (2004 – 2007) stated that about 2% of the population has a learning disability. The number of adults with learning disabilities aged over 60 is predicted to increase by 36% between 2001 and

2021. About 60% of adults with learning disabilities are with their families. 17% of people with learning disabilities of working age have a paid job.

Dr. Sam Goldstein., (2000), stated that anxiety is the most frequent emotional symptom reported by individuals with learning disabilities. Many of the problems caused by learning disabilities occur out of frustration with school or social situations. Depression is also a frequent complication in LD and is at higher risk for intense feelings of sorrow and pain.

In India 10% school children are identified with learning disability. **(Karanth, P; 2003).**

Dr. Ramjee Prasad Pandit., (2004), concluded that pupils who have average or above average intelligence continuously facing to maintain normal progress in school subjects where as for learning disabled students, the teacher education programs in western countries like USA and Europe started the identification, diagnosis and serve them since 1963.

Karande, S. et.al., (2005) concluded that cognition abilities are significantly impaired in children with specific learning disabilities.

Emersan, and Hulton., (2007), stated that people with learning disabilities are even more four times more likely to experience mental health problems than rest of the population.

Sujathamalini, J., (2007) concluded that the LD is the most recent classification of disability and still educator remain unsure about its nature of category. One can see a group of children with specific learning deficits in a normal classroom. Their teachers have them unidentified and misunderstood as dull and lazy students. Studies that spotlight on these concepts also facilitate better planning and organization of instructional procedures for the teachers in normal schools.

Karande, S., (2008), reported that up to 5 – 10% of “seemingly normal” school children have this hidden disability in India. Dyslexia affects 80% of all those identified as learning disabled. Up to 15 – 20% of children with specific learning disabilities have associated attention deficit hyperactivity disorder (ADHD).

Wagner, et.al., (2005), would purport that identification of learning disability begins when parents or teachers suspect that a student is having problem coping with every day school tasks because it is always an educational one. The teacher’s rapport with a learning disabled child is proved to be vital in helping the child succeed. According to learning disabilities services, students can greatly benefit when the teacher takes a little time and thought to accommodate these needs. These students may need accommodation in some class room activities, assignment and exams. Making the child aware of a disability is a great service to the child. Unless such children are identified and

properly treated, they may develop secondary emotional, social and family problems.

Lalitha, K and Pudmavathi, D., (2009) concluded that the importance of nurses become vital in safeguarding and promoting the mental health of children and early identification of deviations from normal. The school is one of the most recognized and powerful systems in the society which presents opportunity to work through it and to influence the health and wellbeing of those who come in contact with it. This is especially true in Indian setting where a considerable shortage in mental health facility is for children. Thus nurses will be a dynamic force, instrumental and indispensable in assisting the teachers to learn to recognize and to help children with learning disability.

Hence the researcher felt that it is important to understand the knowledge and practice of teachers towards the child's abilities of learning and selected this study.

Statement of the Problem:

A study to assess the effectiveness of self instructional module on learning disabilities in terms of knowledge and practice among teachers in selected schools, Dharapuram.

Objectives:

1. To assess the pretest knowledge and practice scores regarding learning disabilities among primary school teachers.
2. To assess the posttest knowledge and practice scores regarding learning disabilities among primary school teachers.
3. To compare the pretest and posttest knowledge and practice scores regarding learning disabilities among primary school teachers.
4. To find out the relationship between posttest knowledge scores and practice scores regarding learning disabilities among primary school teachers.
5. To find out the association between posttest knowledge scores with their selected demographic variables.
6. To find out the association between posttest practice scores with their selected demographic variables.

Operational Definitions:

Effectiveness

It refers to producing an intended result. In this study it is the effect of self instructional module in improving knowledge and practice which is measured by statistical measurements.

Self instructional Module

It is a self interactive, structured, sequentially arranged, and written in simple language information to facilitate self learning. In this study it refers to,

a module prepared by the researcher intended to provide information to the primary school teachers on learning disabilities, which includes definition, risk factors, causes, types, clinical features, diagnostic evaluation, and management, complication, prognosis and role of teacher and parents.

Knowledge

Expertise acquainted by a person, through education. In this study it refers to, the level of understanding of teachers about learning disabilities which is measured by self administered knowledge questionnaire and its scores.

Practice

It is habitual action or performance. In this study it refers to, the knowledge on practice in terms of written responses of teachers about performance in assessing and identifying the problems in learning among primary school children which is measured by self administered rating scale on practice.

Learning disabilities

Learning disabilities are the disorders that affect the ability to understand or use spoken or written language, do mathematical calculations, coordinate movement, or direct attention. In this study it refers to the inability

to read, write, spell, & do mathematical calculations among students studying in primary schools.

Teachers

Persons who are educating the students from first to fifth standard.

Hypotheses:

H₁ : The mean posttest knowledge score is significantly higher than the mean pretest knowledge scores on learning disabilities among teachers.

H₂ : The mean posttest practice score is significantly higher than the mean pretest practice score on learning disabilities among teachers.

H₃ : There will be a significant relationship between the posttest knowledge and practice scores on learning disabilities among teachers.

H₄ : There will be a significant association between the posttest knowledge scores on learning disabilities with their selected demographic variables among teachers.

H₅ : There will be a significant association between the posttest practice scores on learning disabilities with their selected demographic variables among teachers.

Assumptions:

- Teachers may have some knowledge regarding learning disabilities.
- Self instructional module will enhance the knowledge and practice of teachers in assessing the learning disabilities among students.

- Inadequate knowledge of teachers regarding learning disabilities may worsen the academic performance of students.
- Teacher is the important person in identifying the problems of learning and modifying their teaching methods.

Delimitation:

The study is limited to,

- hundred samples
- selected schools at, Dharapuram
- four weeks for data collection.

Projected Outcome:

At the end of the study the primary school teachers are expected to have increased level of knowledge and practice in assessing learning disabilities among students from I-V standard, which will improve the academic performance of the students. It helps the teacher in early identification of children with learning disability and can refer to mental health unit for treatment in early stage. So that we can prevent the behavioral and mental health problems faced by the children.

CONCEPTUAL FRAME WORK

This study is based on general system theory by Von Bertalanffy (1968). According to the general system theory, system is a set of interacting parts in a boundary which makes the system work well to achieve its overall objective.

According to **Treese & Treese** conceptualization is the process of forming idea, design of plan. It is the process of moving from an abstract to a concrete proposal.

General system theory is useful in breaking the whole process into essential task to assure goal realization. The number of parts of the systems totally dependent on what is needed to accomplish the goal or purpose. This model consists of three phases.

- ❖ Input
- ❖ Throughput
- ❖ Output
- ❖ Feedback

Energy or information or matter provides input for the system. The system transforms, creates, and organizes input in the process known as through put which results in a recognition of the input. Output is any information that leaves the system and enters to the environment through

system boundaries. When output is returned to the system as input the process is known as feedback.

INPUT:-

It refers to the person as a system which has input with in the system itself and acquired from the environment. In this study it refers to the demographic variables of teachers like age, sex, marital status, years of experience & religion and assessing the knowledge and practice on learning disabilities among teachers by using self administered knowledge questionnaire and self administered rating scale.

THROUGHPUT:-

It is an action needed to accomplish the desired task to achieve the desired output. In this study, throughput is administration of self instructional module on learning disabilities which includes definition, causes, types, clinical features, management, complication, prognosis & role of teachers and parents and transmission of knowledge and practice on learning disabilities.

OUTPUT:-

Output is any information that leaves the system and enters to the environment.

In this study output refers to gain in knowledge and practice of teachers on learning disabilities. Knowledge is interpreted as inadequate, moderately adequate and adequate. Practice is interpreted as inadequate, moderately adequate and adequate. Adequate level of knowledge and practice is considered as positive outcome and moderately adequate and inadequate level of knowledge and practice is considered as negative outcome which needs modification of SIM.

FEEDBACK:

Feedback is the result of throughput. It allows the system to monitor its internal function so that it can either increase or restrict its input. (Not included in this study)

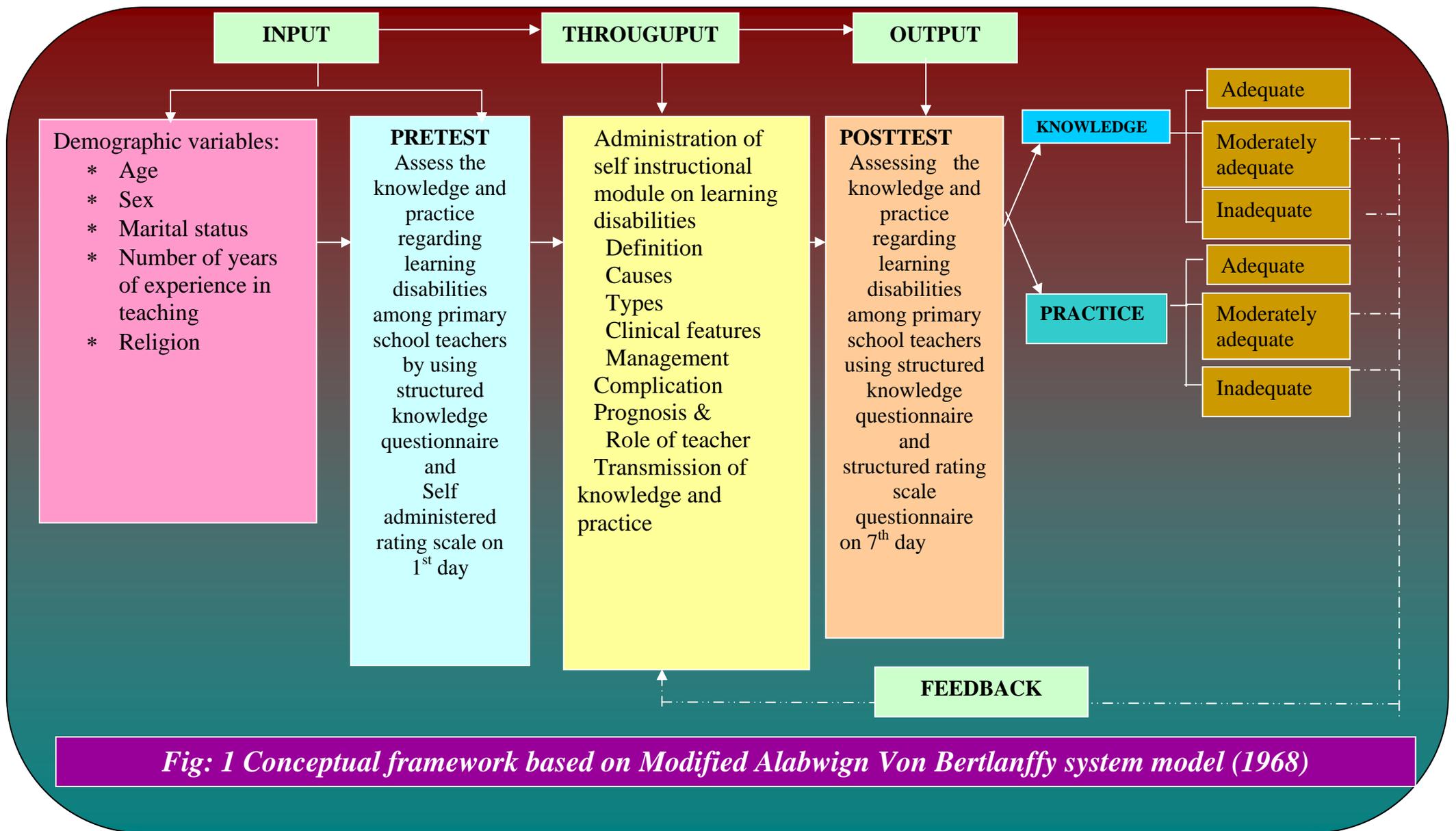


Fig: 1 Conceptual framework based on Modified Alabwign Von Bertlanffy system model (1968)

CHAPTER –II

REVIEW OF LITERATURE

The review involves the systematic identification, location, scrutiny of summary of written materials that contain information of research problem.

(Polit & Hungler, 1998)

An extensive review has been done to form a strong foundation for the study.

Part –I Overview of Learning Disability

Part-II Studies related to Learning Disability

Part –III Role of Teachers and Parents

Part- IV Significance of Teaching Aid

PART –I OVERVIEW OF LEARNING DISABILITY

Definition:

Mary Ann Boyd (2008), has defined as a discrepancy between actual achievement and expected achievement on the person's age and intellectual ability.

Basavanthappa, BT (2007), has defined as an achievement in reading, mathematics or written expression is below that expected for age.

Individuals with disabilities act in US (2003), has defined learning disability as, a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written that may manifest itself in an imperfect ability to listen, think, speak, read, spell or do mathematical calculation including conditions such as perceptual disabilities, brain injury minimal brain dysfunction, dyslexia and developmental aphasia.

Keltner., (1999), has defined learning disability as a significant discrepancy between aptitude IQ and achievement in a particular area, such as reading or mathematics.

Epidemiology:

According to **Lalitha, K.,(2009)**, globally there are 4 million school age children have learning disabilities, 7.7% of children have ever been told they had learning disability. Prevalence of reading disorder is conservatively

estimated to range between 4 percent and 10 percent in the general school aged population in United States. In India prevalence estimates of learning disability ranges from 9-39% and the incidence of dyslexia in primary school children in India has been reported to be 2-18%, of dysgraphia 14% and of dyscalculia 5.5%.

Causes:

Dufault, R . et. al.(2009), stated that, among dietary factors, learning and behavior are influenced not only by nutrients, but also by exposure to toxic food contaminants such as mercury that can disrupt metabolic processes and alter neuronal plasticity. Neurons lacking in plasticity are a factor in neurodevelopmental disorders such as autism and mental retardation. Essential nutrients help maintain normal neuronal plasticity. Nutritional deficiencies and mercury exposure have been shown to alter neuronal function and increase oxidative stress among children with autism. These dietary factors may be directly related to the development of behavior disorders and learning disabilities. Mercury, either individually or in concert with other factors, may be harmful if ingested in above average amounts or by sensitive individuals. High fructose corn syrup has been shown to contain trace amounts of mercury as a result of some manufacturing processes, and its consumption can also lead to zinc loss. Consumption of certain artificial food color additives has also been shown to lead to zinc deficiency.

Mary Ann boyd, (2008), has stated that the following are the causes of dyslexia. -There is no single cause. Disturbances in the development of left hemisphere may be responsible. It is more commonly such seen in monozygotic twins than dizygotic twins.

D' Ancy lyness, (2007), concluded that the following are the causes of learning disabilities

- i). **Genetic influence:** Learning disabilities tend to run in the families.
- ii). **Brain Development:** – Learning disabilities can be traced to brain development, both before and after birth.
- iii). **Environment impacts:** Learning disabilities infants and young children are susceptible to environmental toxins.

Learning disabilities may be congenital or acquired. No single cause has been defined, but neurological deficits are evident or presumed. The possible causes include mental illness or toxic drug use during pregnancy, complication during pregnancy or delivery and neonatal problems etc.

Basavanthappa, BT. (2007), has concluded that, genetics is the main cause for learning disabilities. It is 6 times more common in boys than girls. No neurological deficits in responsible for deficits learning disabilities.

Classification:

Mary Ann Boyd, (2008), has divided into two categories.

- i) Verbal disorder and
- ii) Non vertical disorder.

The verbal disorder includes reading and spelling the numerical disorder is mathematics.

Basavnathappa, BT., (2007), has classified learning disabilities as follows. It is of 2 types.

- i. **Global:** It is the difficulties in all subjects which are usually the result of subnormal intelligence mild retardation or borderline range of intelligence.
- ii. **Specific:** A disorder in one or more of the basic psychological process involved in underlying or using language, written, or spoken or which may manifest itself in an imperfect ability to listen, think, speech, read, write, spell or do mathematical calculation.

Diagnostic and statistical manual of mental disorder IV (2008), have classified learning disability as follows:

i. **Reading disorder (dyslexia)**

60 – 80% of individuals with this disorder are males.

It is a problem with reading accuracy, speed or comprehension.

ii. **Mathematical disorder:**

Affects 1% of school children some of the types are

Linguistic skills: Understanding or naming math terms.

Perceptual skills: Recognizing or reading numerical symbol and clustering objects into groups.

Attention skills: Correctly copying numbers, adding carried numbers, and observing operational sign.

Math skills: Following sequences of math steps, counting object and learning multiplication tables.

iii. Disorder of written expression:

Composing and organizing written text is problematic and filled with grammatical, punctuation and spelling errors and handwriting is illegible.

Clinical features:

D' Ancy lyness (2007), has given the clinical features:

Learning disabilities typically first show up when a person has difficulty speaking, reading, writing, figuring on the math problem, communicating with a parent or paying attention in class.

People with numerical learning disabilities may have difficulty processing what they see. They may have trouble making sense of visual details like number on a black board. Some one with a non verbal learning disability may confuse the plus sign with the sign for division.

Diagnostic evaluation:

Notices and legal disclaimer (2009), has given the signs for learning disabilities.

When a child has learning disability he or she,

- may have trouble learning the alphabet, rhyming words, or connecting letter to their sound.

- may not understand what he or she read.
- may have trouble with spelling.
- may have very messy handwriting or hold a pencil awkwardly
- may have trouble in understanding jokes, comic strips and sarcasm.
- may have trouble in following directions.

D' Ancy lyness (2007) has stated that, the first step in diagnosing a learning disability is checking out vision or hearing problems. A person may then work with a psychologist or speech specialist who will use specific techniques to diagnose the disability. Often these can help to pin point that persons learning strength and weakness in addition to revealing a particular learning disability.

Children with learning disabilities are typically lacking in verbal and nonverbal intelligence testing and are usually performed by school personnel. Psychological testing may be helpful in describing the child professed manner of processing information.

Teacher's observation of classroom behaviour and academic performances are essential. Reading evaluation measures abilities in word deciding, comprehension and fluency.

Medical evaluation includes a detailed family history of the child, medical history, a physical examination and a neurological or neuro developmental examination to look for underlying disorders.

Psychological evaluation identifies ADHD, conduct disorder, anxiety, depression, and poor self esteem, which frequently accompany must be differentiated from learning disabilities.

Basavanthappa, BT., (2007) has conducted the diagnostic evaluation for learning disabilities. Neurological assessment must be done to make out neurological deficits. Screening for hearing and vision must be done. Detailed physiological and psychological evaluation and when necessary psychiatric, speech & language evaluation social service is taken.

Management:

National institute of neurological disorder (2007) has stated that, the most common treatment for learning disabilities is special education. Specially trained educators may perform a diagnostic educational evaluation in assessing the child academic and intellectual potential and level of academic performance.

Treatment methods are educational management but they also involve medical, behavioural and psychological therapy. Effective teaching programs, may take a remedial compensatory or stretch approach.

Some children require specialized instruction in only are area while continuing the regular classes.

Drugs minimally affect academic achievement, intelligence and general learning ability, although certain drugs are useful in increasing the attention and concentration.

Hasselbring, TS. et al., (2000), stated that millions of students across the united states cannot benefit fully from a traditional educational program, because they have a disability that impairs their ability to participate in a typical classroom environment. For these students computer based education can play an important role. Not only can computer technology facilitate a broader range of educational activities to meet a variety of needs for students with mild learning disorders.

D' Ancy lyness (2007) have conducted that some schools, develop individualized educational program (IEP) which helps define a person's learning strengths and weaknesses and make a plan for learning activities that will help the student do his or her best in school. There is no cure for a learning disability. But most people with learning disabilities learn to adapt to their learning differences and they learn strategies that help them accomplish their goal, and dream.

Complications:

Emersion, and Hilton, (2007) has stated that having a learning disability is one of the most important things found in increasing the risk of having a mental health problem.

Emil Simionoff (2003) has stated that the psychiatric disorder are two to four times as common in children with learning disabilities with 30 – 50% having a mental disorder. While all psychiatric disorder are over represented in children with learning disabilities action and hyperkinetic disorder and particularly increased.

Dr. Sam gold stein (2000) has concluded that anxiety is the most frequent emotional symptoms reported by individual, with learning disabilities. Individuals with LDs become fearful because of their constant frustration and confusion in school performances.

Many problems caused by learning disabilities occur of frustration with school or social situation. Researchers have frequently observed that frustration produces anger. Depression is also a frequent complication in learning disabilities and individual with LD are at higher risk for inter feeling of sorrow and pain.

PART-II STUDIES RELATED TO LEARNING DISABILITY

a. Studies related to Incidence and Prevalence:

Smita, A. et.al., (2009) conducted a study at Mumbai to assess the prevalence of learning disabilities and behavioural disorders. The purpose of this study was to collect data on the prevalence of Learning Disabilities (LD) and Behaviour Disorders (BD) in a developing country like India. Epidemiological data was obtained for a population of 333 children, ages 3-14 years. An important referral complaint was speech and language delays.

Almost half of the referred population (46%) was diagnosed with LD and 10% with BD (mainly with Attention Deficit Hyperactivity Disorder) through use of developmental, neuropsychological and psycho-educational assessments. Birth encephalopathy (including low birth weight and preterm birth) was present in 65% of the total population. Male to female ratio of the referred population was 3:1. Accurate data on prevalence of LD and BD is necessary for the development of appropriate assessment and intervention strategies.

Landerl, K and Moll, K., (2009), conducted a study to assess the prevalence of specific learning disabilities at Germany. Prevalence and gender ratios of specific learning disorders in arithmetic (AD), reading (RD), and spelling (SD) and their co-occurrence were assessed in a large (N = 2586) population-based sample of elementary school children and in a sub sample of 293 children with at least one learning disorder (LD-sample). A questionnaire on familial transmission was given to a sub sample of 256 parents of children with a learning disorder and 146 typically developing children. The rates of deficits in arithmetic, reading, or spelling were four to five times higher in samples already experiencing marked problems in one academic domain compared to the full population. Thus, comorbidity of learning disorders was confirmed in a fairly standard school population.

Berninger, VW et.al., (2009), conducted a study at Seattle, WA, USA to assess the gender differences in severity of writing and reading disabilities. Gender differences in mean level of reading and writing

skills were examined in 122 children (80 boys and 42 girls) and 200 adults (115 fathers and 85 mothers) who showed behavioral markers of dyslexia in a family genetics study. Gender differences were found in writing and replicated prior results for typically developing children: Boys and men were more impaired in handwriting and composing than were girls and women, but men, who were more impaired in those writing skills, were also more impaired in spelling than women. Men were more impaired than women in accuracy and rate of reading passages orally, but boys were not more impaired than girls on any of the reading measures. Males were consistently more impaired than females in orthographic skills, which may be the source of gender differences in writing, but not motor skills. Population-based studies that report gender differences in reading in children with dyslexia may be confounding reading and writing disorders--the latter being the true source of gender differences in both children and adults with dyslexia.

Roongpraiwan, R. et. al., (2002) conducted a study at Thailand with objective of studying the prevalence of dyslexia in first to sixth grade students and to study the clinical characteristics such as sex, neurological signs, verbal intelligence and co morbid attention deficit disorder. 486 students were administered tests. The study results are the prevalence of dyslexia and probable dyslexia were found to be 6.3% and 12.6%. The male female ratio of

dyslexia was 3.4:1. The entire dyslexia group had a normal neurological examination but 90% showed positive soft neurological signs.

Austin, S.,(2000) conducted a study at USA with a purpose of assessing the prevalence of LD and its co morbidity (psycho social problems) 115 5th grade students were selected. The results indicated that 14 of 50 students tested had evidence of undiagnosed LD.

b. Studies related to Causes:

Plomin, R., (2009), conducted a study at London, UK. to assess the role of genes in learning abilities and disabilities. A surprising finding emerging from multivariate quantitative genetic studies across diverse learning abilities is that most genetic influences are shared: they are "generalist", rather than "specialist". They exploited widespread access to inexpensive and fast Internet connections in the United Kingdom to assess over 5000 pairs of 12-year-old twins from the Twins Early Development Study (TEDS) on four distinct batteries: reading, mathematics, general cognitive ability (g) and, for the first time, language. Genetic correlations remain high among all of the measured abilities, with language as highly correlated genetically with reading and mathematics.

Sprung, J, et.al.,(2009), conducted a cohort study at Minnesota, USA to assess the effects of anesthetics on brain process. Anesthetics administered to immature brains may cause histopathological changes

and long-term behavioral abnormalities. The association between perinatal exposure to anesthetics during Cesarean delivery (CD) and development of learning disabilities (LD) was determined in a population-based birth cohort. The educational and medical records of all children born to mothers residing in five townships of Olmsted County, Minnesota from 1976-1982 and remaining in the community at age 5 were reviewed to identify those with LDs. Cox proportional hazards regression was used to compare rates of LD between children delivered vaginally and via CD (with general or regional anesthesia). Of the 5,320 children in this cohort, 497 were delivered via CD (under general anesthesia $n = 193$, and regional anesthesia $n = 304$). The incidence of LD depended on mode of delivery ($P = 0.050$, adjusted for sex, birth weight, gestational age, exposure to anesthesia before age 4 yr, and maternal education). LD risk was similar in children delivered by vagina or CD with general anesthesia, but was reduced in children receiving CD with regional anesthesia (hazard ratio = 0.64, 95% confidence interval 0.44 to 0.92; $P = 0.017$ for comparison of CD under regional anesthesia compared to vaginal delivery). It was concluded that , children exposed to general or regional anesthesia during CD are not more likely to develop LD compared to children delivered vaginally, suggesting that brief perinatal exposure to anesthetic drugs does not adversely affect long-term neurodevelopmental outcomes. The

risk of LD may be lower in children delivered by CD whose mothers received regional anesthesia.

Ryburn, B, et.al.,(2009), conducted a study at Australia to assess how Asperger syndrome relates to non-verbal learning disability. This study investigated the claim utilizing a battery of neuropsychological tests that were found to be sensitive to NLD in the original learning disordered populations used to describe the syndrome. Children aged between 8 and 14 were recruited to form two groups: (1) children with Asperger syndrome (N=14) and (2) normal healthy schoolchildren (N=20). By contrast to the main principle outlined in the NLD model, children with Asperger syndrome did not display a relative difficulty with spatial- or problem-solving tasks; indeed, they displayed significantly higher performance on some non-verbal tasks in comparison with verbal tasks. It was only in relation to their high levels of psychosocial and interpersonal difficulties, which are also predicted on the basis of their psychiatric diagnosis, that the children with Asperger syndrome were clearly consistent with the NLD model in this study. These results raise questions about the relevance of the syndrome of NLD for children with Asperger syndrome.

Kibby, MY et.al., (2009), conducted a study Carbondale, USA to assess the relationship between cerebral hemisphere volume and receptive language functioning in dyslexia and attention-deficit hyperactivity disorder. Because poor comprehension has been associated with small cerebral volume and there is a high comorbidity between developmental dyslexia, attention-deficit hyperactivity disorder (ADHD), and specific language impairment, the goal of this study was to determine whether cerebral volume is reduced in dyslexia and attention-deficit hyperactivity disorder in general, as some suggest, or whether the reduction in volume corresponds to poor receptive language functioning, regardless of the diagnosis. Participants included 46 children with and without dyslexia and attention-deficit hyperactivity disorder, aged 8 to 12 years. The results indicated that cerebral volume was comparable between those with and without dyslexia and attention-deficit hyperactivity disorder overall. However, when groups were further divided into those with and without receptive language difficulties, children with poor receptive language had smaller volumes bilaterally as hypothesized. Nonetheless, the relationship between cerebral volume and receptive language was not linear; rather, our results suggest that small volume is associated with poor receptive language only in those with the smallest volumes in both dyslexia and attention-deficit hyperactivity disorder.

Abdullah, N et.al., (2008)., conducted a study at Tyne, UK to assess relationship between height and learning disabilities. Children at two local special schools were measured using a Leicester height measurer and values converted to standard deviation scores (SDS). Children were categorized according to whether there were known factors that could affect height. The data were compared with those collected from local mainstream schools. In total, 242 children were registered at the two special schools and 192 children were measured. The mean height SDS of children in mainstream school (n = 2301) was similar to national standards at -0.09 (SD 1.02). The mean height SDS distribution of the 192 children in special schools (age range 3.2-18.4 years; median age 11.3 years) was -0.73; 95%CI -0.9 to -0.5. In those with no established diagnosis to explain altered growth (n = 120) this was -0.613; 95%CI -0.8 to -0.4. Both pre-pubertal (n = 37) and pubertal (n = 83) children were short and eight (6.7%) had a height less than the 0.4th centile. It was concluded that the children attending special school with severe or profound learning disability were shorter than those attending mainstream school. This is still the case following the exclusion of children with a known cause for abnormal growth. This underlines the importance of each child being assessed by professionals with a refined knowledge of normal and abnormal growth.

Balci, S. et. al., (2007), Turkey. stated that, Periventricular nodular heterotopia (PNH) is a rare neuronal migration disorder in which immature neurons fail to undergo a directed migration from the ventricular and subventricular zones to the cerebral cortex. Classic PNH occurs predominantly in females and is associated with periods of epilepsy and near-normal intelligence. One gene associated with PNH was mapped to chromosome Xq28. PNH with learning disability is reported in 15 male patients with several syndromes and various congenital abnormalities such as craniosynostosis, frontonasal malformation, and agenesis of the corpus callosum. They presented a 26-year-old male patient who was followed up with the diagnosis of epilepsy from the age of 1 year. Additionally the patient had severe learning disability, obesity, and hypogonadism. Imaging of his brain demonstrated PNH.

Abu-Rabia, S and Maroun, L., (2005), Israel. The present study examined the effect of consanguineous marriage in the Arab community on reading disabilities of offspring. It examined whether the rate of reading disabilities was higher among offspring of first-cousin parents than offspring of unrelated parents; and whether reading-disabled children of first-cousin parents were more disabled in phonological awareness and phonological decoding than reading-disabled children of unrelated parents and normally reading younger children. These questions were investigated among 814 pupils of the 4th, 5th, and 6th grades, using word recognition and reading comprehension tests. Two experimental groups were chosen from this population. These were a reading-disabled group of 22 pupils who were children of first-cousin marriages and 21

pupils who were children of unrelated parents. A control group was also selected, consisting of 21 younger normally reading pupils at the same reading level. All the groups were tested on non-words, real words, phonological, orthographic and working memory measures. The results indicated that the rate of reading disabilities among children of first-cousin parents was higher than that of with children of second-cousin parents, distantly related parents, or unrelated parents. Further, no differences were found in phonological awareness and decoding between the two reading-disabled groups.

c. Studies related to Clinical Features:

Kibby, MY., (2009) conducted a cohort study to assess the memory functioning in developmental dyslexia. The goals of this project were threefold: to determine the nature of the memory deficit in children/adolescents with dyslexia, to utilize clinical memory measures in this endeavor, and to determine the extent to which semantic short-term memory (STM) is related to basic reading performance. Two studies were conducted using different samples, one incorporating the Wide Range Assessment of Memory and Learning and the other incorporating the California Verbal Learning Test-Children's Version. Results suggest that phonological STM is deficient in children with dyslexia, but semantic STM and visual-spatial STM are intact. Long-term memory (LTM) for both visual and verbal material also is intact.

Regarding reading performance, semantic STM had small correlations with word identification and pseudoword decoding across studies despite phonological STM being moderately to strongly related to both basic reading skills. Overall, results are consistent with the phonological core deficit model of dyslexia as only phonological STM was affected in dyslexia and related to basic reading skill.

Landerl, K, et.al.,(2009), conducted a study at Tuebingen, Germany to assess the cognitive profile among students with dyslexics and dyscalculics. This study tests the hypothesis that dyslexia and dyscalculia are associated with two largely independent cognitive deficits, namely a phonological deficit in the case of dyslexia and a deficit in the number module in the case of dyscalculia. In four groups of 8- to 10-year-olds (42 control, 21 dyslexic, 20 dyscalculic, and 26 dyslexic/dyscalculic), phonological awareness, phonological and visual-spatial short-term and working memory, naming speed, and basic number processing skills were assessed. A phonological deficit was found for both dyslexic groups, irrespective of additional arithmetic deficits, but not for the dyscalculia-only group. In contrast, deficits in processing of symbolic and nonsymbolic magnitudes were observed in both groups of dyscalculic children, irrespective of additional reading difficulties, but not in the dyslexia-only group.

Cognitive deficits in the comorbid dyslexia/dyscalculia group were additive; that is, they resulted from the combination of two learning disorders. These findings suggest that dyslexia and dyscalculia have separable cognitive profiles, namely a phonological deficit in the case of dyslexia and a deficient number module in the case of dyscalculia.

Martelli, M., (2009), Italy. tested the hypothesis that crowding effects are responsible for the reading slowness characteristic of developmental dyslexia. A total of twenty-nine Italian dyslexics and thirty-three age-matched controls participated in various parts of the study. In Experiment 1, they measured contrast thresholds for identifying letters and words as a function of stimulus duration. Thresholds were higher in dyslexics than controls for words (at a limited time exposure) but not for single letters. Adding noise to the stimuli produced comparable effects in dyslexics and controls. At the long time exposure thresholds were comparable in the two groups. In Experiment 2, they measured the spacing between a target letter and two flankers at a fixed level of performance as a function of eccentricity and size. they concluded that word analysis in dyslexics is slowed because of greater crowding effects, which limit letter identification in multi-letter arrays across the visual field. We propose that the

peripheral reading of normal readers might constitute a model for dyslexic reading. The periphery model accounts for 60% of dyslexics' slowness. After compensating for crowding, the dyslexics' reading rate remains slower than that of proficient readers.

Knivsberg, AM. & Andreassen, AB., (2008), conducted a study at Norway, to assess the behaviour, attention and cognition in severe dyslexia. The aim was to assess if these students have more behavioural/emotional problems than normal reading students. A clinical sample of 70 students, 59 males and 11 females, were compared to a normal reading control group. The groups were pair-wise matched on age, gender, cognitive level, and whether they lived in rural or urban areas. Mean age for the two groups was 150 months, and mean IQ scores approximately 100. Information on behaviour/emotions was obtained from parents, teachers and participants by means of the Child Behavior Checklist, Teacher's Report Form and Youth Self Report. The dyslexia group showed significantly more problems in all areas than the controls. This was reported from all three groups of informants. Parents reported most problems, internalizing behaviour for more than 50% of the participants and total problem behaviour for nearly 45%. Significantly more attention problems were also reported for the dyslexia group from all informants. Parents reported that nearly half the group demonstrated attention problems.

Gadeyne, E., (2004), conducted a study to assess psycho social functioning of different groups of young children with learning problems. 276 children of first grade were evaluated. Attention problems are reported by the teachers turned out to be the most important single psychosocial predictor for group discrimination. Results varied according to the type of learning problems.

Krawtz, S. et.al., (1999), conducted a study at Israel used Baron's criteria for mediation to investigate the extent to which interpersonal understanding mediates the relation between LD and social adaptation in the classroom. The results shows that reduced social adaptation in the classroom and lower interpersonal understanding are both associated with a diagnosis of LD. However they do not conclusively support the claim that interpersonal understanding mediates the relation between LD and social adaptation.

d. Studies related to Management:

Bull, L., (2007) conducted a study at Twickenham, UK to determine the clinical and perceived effectiveness of the Sunflower therapy in the treatment of childhood dyslexia. The Sunflower therapy includes applied kinesiology, physical manipulation, massage, homeopathy, herbal remedies and neuro-linguistic programming. A multi-centred, randomized controlled trial was undertaken with 70 dyslexic children aged 6-13 years. The research study aimed to test the research hypothesis that dyslexic children 'feel better' and

'perform better' as a result of treatment by the Sunflower therapy. Children in the treatment group and the control group were assessed using a battery of standardised cognitive, Literacy and self-esteem tests before and after the intervention. Parents of children in the treatment group gave feedback on their experience of the Sunflower therapy. Test scores were compared using the Mann Whitney, and Wilcoxon statistical tests. While both groups of children improved in some of their test scores over time, there were no statistically significant improvements in cognitive or Literacy test performance associated with the treatment. However, there were statistically significant improvements in academic self-esteem, and reading self-esteem, for the treatment group. The majority of parents (57.13%) felt that the Sunflower therapy was effective in the treatment of learning difficulties.

Zafiropoulon, .M. et. al., (2004) concluded that interaction among and a cognitive, metacognitive, emotional factor seems to play a determining part in achievement behaviour and especially in scholastic performance. Parents and teachers also took part. It was found to be effective.

e. Studies related to complication:

Morris, MA et. al., (2009), conducted a study at Texas, USA to assess the cognition, academic achievement, and affective illness of learning disabled persons. This study was undertaken to establish how the current level of cognitive and academic functioning in adults might

correlate with the previous testing performed at a small private school in Dallas, Texas, that serves students with learning disabilities. Each of the 40 participants had been evaluated as students 20 to 25 years previously using the standard cognitive and achievement tests accepted in practice during the 1970s. Additionally, the medical director of the school, a neurologist, had evaluated each student for neurologic and behavioral disorders. At the time of follow-up, the participants were administered a battery of intellectual and achievement measures commensurate with the previous testing and a detailed neurologic and neurobehavioral examination was performed. A significant correlation was found between the original and the current test scores, confirming both that learning disabilities persist into adulthood and that children with affective illness have a significant risk for later recurrent affective illness episodes.

PART –III ROLE OF TEACHERS AND PARENTS

Notices and legal disclaimer (2009) has given the following tips for parent:

- Praise your child when he or she does well.
- Find out the ways your child learns best.
- Let your child help with household works.
- Pay attention to your child's mental health and your own.

- Talk to other parents whose children have learning disabilities. ‘
- Meet with school personnel and help an education plan to address your child’s needs.

Fitzpatrick, A and Dowling, M., (2007), stated that parenting a child with a learning disability is a unique and often demanding experience. The nurse can play a key role in supporting parents and families by communicating effectively, providing information and working in partnership.

Notices and legal disclaimer (2009) has given the tips for teachers.

- Breaking tasks into smaller steps and giving directions verbally and in writing.
- Giving the student more time to finish school work or take tests.
- Letting the student with reading problem use text books or tape.
- Letting the student with listening difficulties borrow notes from other classmates or use a tape recorder to teach.
- Letting the student with writing difficulties use a computer with specialized software that spell checks, grammar, checks or recognizes speech.

a.Studies Related To Role Of Teachers And Parents:

Karande, S. et. al., (2009) conducted a study at Mumbai, India to assess the anxiety level of the mothers of children with learning disabilities. Prospective rating-scale and interview-based study

conducted in their clinic. One hundred mothers of children (70 boys, 30 girls) with SpLD were interviewed using the Hamilton anxiety rating scale (HAM-A) and a semi-structured questionnaire. Detailed clinical and demographic data of mothers were noted. Chi-square test or unpaired student's t-test was applied wherever applicable. The mean age of mothers was 40.14 years (+/-SD 4.94, range 25.07-54.0), 73% belonged to upper or upper middle socioeconomic strata of society, 67% were graduates or postgraduates, 58% were full-time home-makers, and 33% lived in joint families. Levels of anxiety were absent in 24%, mild in 75%, and moderate in 1% of mothers. Their mean total anxiety score was 5.65 (+/-SD 4.75, range 0-21), mean psychic anxiety score was 3.92 (+/-SD 3.11, range 0-13), and mean somatic anxiety score was 1.76 (+/-SD 2.05, range 0-10). Their common worries were related to child's poor school performance (95%), child's future (90%), child's behavior (51%), and visits to their clinic (31%).

Kermanshahi, SM., (2009), conducted a study at Tehran, Iran to assess the Perceived support among Iranian mothers of children with learning disability. This qualitative phenomenological study explored the lived experiences of perceived support by Iranian mothers who have children with learning disability. Twelve open interviews with six

mothers of learning-disabled children (7-12 years of age) were audiotape-recorded with participants' consent. The interviews were transcribed and data were analyzed using Van Manen methodology. Two major themes emerged from 138 thematic sentences. The mothers' experiences could be interpreted as a sense of being in the light or being in the shade of support, with variations for different participants. The results indicate a need for more specialized and individually adjusted support for mothers in Iran.

Chang, MY and Hsu LL., (2007), conducted a study to assess the perceptions of Taiwanese families who have children with learning disability. The aims and objectives were to explore the perceptions of families in Taiwan of living with a child who have learning disability and the parent's perspectives on the cultural influences on their spiritual experiences. This study adopted qualitative research with semi-structured interviews. Semi-structured interviews were conducted with 117 parents in their homes and were interpreted by using content analysis to extract key conceptual themes from the transcribed interview texts. The findings revealed that the perceptions of families with learning disability children were wide-ranging. The stressors did not occur in a fixed order, they were different in degree and importance from one family to another.

Tournaki, N.,(2003), conducted a study at Newyork to assess the differential effects of teaching addition through strategy instruction versus drill and practice to students with and without learning disabilities. Forty-two second-grade general education students and 42 students with learning disabilities (LD) were taught basic, one-digit addition facts (e.g., $5 + 3 = _$). Students received instruction via (a) a minimum addend strategy, (b) drill and practice, or (c) control. The effectiveness of the two methods was measured through students' accuracy and latency scores on a posttest and a transfer task (e.g., $5 + 3 + 7 = _$). Students with LD improved significantly only in the strategy condition, as compared to drill-and-practice and control conditions, whereas general education students improved significantly both in the strategy and the drill-and-practice conditions as compared to the control condition. However, in the transfer task, students from all groups became significantly more accurate only in the strategy condition, while all students were significantly faster than their control group peers regardless of teaching method. The implications for teachers' differential choices of methods of instruction for students with different learning characteristics are discussed.

McCutchen, et. al., (2002), stated that, they worked with groups of kindergarten and first-grade teachers (the experimental group) during a 2-weeks summer institute and throughout the school year. They shared with them research about learning disabilities and effective instruction, stressing the importance of explicit instruction in phonological and orthographic awareness.

They followed the experimental group and a control group into their classrooms for a year, assessing teachers' classroom practices and their students' (n = 779) learning. The study yielded three major findings: They can deepen teachers' own knowledge of the role of phonological and orthographic information in literacy instruction; teachers can use that knowledge to change classroom practice; and changes in teacher knowledge and classroom practice can improve student learning.

Troia, GA and Graham, S., (2002), conducted a study in USA to assess effectiveness of a highly explicit, teacher-directed instructional routine used to teach three planning strategies for writing to fourth and fifth graders with learning disabilities. In comparison to peers who received process writing instruction, children who were taught the three planning strategies-goal setting, brainstorming, and organizing-spent more time planning stories in advance of writing and produced stories that were qualitatively better. One month after the end of instruction, students who had been taught the strategies not only maintained their advantage in story quality but also produced longer stories than those produced by their peers who were taught process writing.

Taylor, HG. et. al., (2000), USA stated that the most existing research on early identification of learning difficulties has examined the validity of methods for predicting future academic problems. The present study focused instead on the sensitivity of kindergarten teachers to learning problems in their students and on the continuity of teacher-identified problems over time. To

identify early learning problems, kindergarten teachers in a suburban school district rated student progress toward six academic objectives as satisfactory or unsatisfactory. Twenty percent of the district's 303 kindergarten children received unsatisfactory ratings in at least one area. Thirty-eight of these children (identified group) were matched to 34 children with satisfactory ratings in all areas (nonidentified group). Results of testing conducted during kindergarten revealed poorer academic achievement in identified children than in nonidentified children. Children from the identified group also performed more poorly than children from the nonidentified group on tests of phonological processing and working memory/executive function and were rated by teachers as having more behavior and attention problems and lower social competence. Follow-up of the sample to first grade documented continued learning problems in the identified group. These findings support the use of teacher judgements in early detection of learning problems and argue against reliance on discrepancy criteria.

Brook, V. et. al.,(2000), conducted a study at Israel, to assess the knowledge and attitude on ADHD and LD among teachers.46 teachers were interviewed 23 were regular teachers and 23 were special educators general knowledge about ADHD 71% and about LD 74% was relatively low. 13% of all teachers considered LD to be the result of parental attitudes namely spoiling the children. In relation to LD cases the over all scoring for positive attitude was 75%. The score was higher among special educators.

Khatib, Al and M. Jamal.,(2007) investigated 405 regular educators knowledge on learning disabilities and whether this knowledge differed as a function of selected variables. Teachers completed a 40 item test designed by the researcher. T tests and ANOVA were used to analyse the surveyed data. Female teachers were found to be significantly more knowledgeable than male teachers. Teacher's level of knowledge was unrelated to teacher's age, teaching experience, or academic qualifications.

Germano, GD et.al., (2009), conducted a study at Marília, São Paulo, to assess the Efficacy of an audio-visual computerized remediation program in students with dyslexia. The specific goals of this study involved the comparison of the linguistic-cognitive performance of students with developmental dyslexia with that of students considered good readers; to compare the results obtained in pre and post-testing situations of students with dyslexia who were and were not submitted to the program; and to compare the results obtained with the remediation program in students with developmental dyslexia to those obtained in good readers. The participants of this study were 20 students who were divided as follows: group I (GI) subdivided in: GIe (five students with developmental dyslexia who were submitted to the program) and GIc (five students with developmental dyslexia who were not submitted to the program); group II (GII) was subdivided in: GIIE

(five good readers who were submitted to the program) and GIIC (five good readers who were not submitted to the program). An audio-visual computerized remediation program was used--'Play on'. Results indicated that GI presented a lower performance in auditory processing and phonological awareness when compared to GII in the pre-testing situation. However, GI presented a similar performance to that of GII in the post-testing situation, indicating the effectiveness of the audio-visual remediation program in students with developmental dyslexia.

Obudo, and Francis., (2008) stated that teachers are inadequately prepared to teach students with learning disabilities especially in math. The use of effective strategies is especially important to students with LD. Use of strategies even more important than using drill and practice and mediated instruction strategies.

Anderson, et. al., (1985) conducted a study among 135 Pennsylvania regular classroom teachers to examine their understanding of learning disabilities and the degree to which they felt prepared to work with the LD students. The results found that 82 % of teachers had identified or referred a child as LD but only 21% felt they sufficiently understood the concept to approximately identify and serve LD children.

PART –IV SIGNIFICANCE OF TEACHING AID

According to **Sankaranarayanan (2008)**, self instructional module is a learning package planned and prepared from the beginning till end with an aim to facilitate self learning. It is a self explanatory, self sufficient, self directed, self motivating and self evaluating. Above all it should facilitate self learning. In the strict sense module is an organized collection of learning experiences assembled in order to achieve a specified group of related objectives or a self contained section of a course or programme of instruction.

Studies related to Significance of Teaching Aid:

Baltimore., (2001), conducted a study to assess the effectiveness of self instructional module in increasing knowledge of genetics. There was a significant increase of 20.8% in participants mean knowledge score as compared with the posttest based on paired t test analysis and it was concluded that a genetics self instructional module for registered nurses was effective in increasing knowledge of basic human genetic concepts and risk assessment.

Lalitha, K and Pudmavathi D., (2009) conducted a study to assess the effectiveness of structured teaching programme on the level of knowledge and opinion of teacher trainees regarding learning disabilities among children in selected training institutions at Kolar district, Karnataka. 30 trainees were selected by census method. The paired differences between the pretest knowledge and the posttest knowledge showed the knowledge gain and the

value was 11.3 and the 'p' value was significant at 0.000. This indicated that the structured teaching programme was effective in improving the knowledge of the teacher trainees on learning disabilities. The paired differences between the pretest opinion and the posttest opinion showed that the opinion changed towards favorable direction and the value was 7.66 and the 'p' value was significant at 0.000. This indicated that the structured teaching programme was effective in changing the opinion of the teacher trainees on learning disabilities. The findings showed that there was correlation between the knowledge and the opinion in pretest; where-as there was no correlation between the knowledge and the opinion in the posttest

CHAPTER – III

METHODOLOGY

Methodology of study includes approach and design of the study, setting of the study, population, criteria for sampling, sample size, instrument and scoring procedure, developing and testing of the tool, method of data collection and plan for data analysis.

Research Approach and Design:

Evaluative approach was used to assess the effectiveness of self instructional module on learning disabilities among primary school teachers.

The design which was used in this study was one group pretest and posttest pre experimental design which is one of the quasi experimental designs.

The pre experimental design which is represented below.

Group	0₁	X	0₂
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0₁- Pretest knowledge and practice regarding learning disabilities among teachers.

X- Intervention which is given in the form of self instructional module on learning disabilities.

O₂- Posttest knowledge and practice regarding learning disabilities among teachers.

Setting Of the Study:

The study was conducted in primary schools that are located with in one kilometer of distance from college. There are 11 private schools and 5 government schools and approximately 10-15 teachers are working in private schools and 4-5 teachers are working in government schools.

Population

The population of this study was school teachers.

Sample:

The sample of this study was teachers who teach the students from I to V standard

Criteria for selection of samples:

❖ *Inclusion Criteria:*

- Teachers who are available during data collection period.
- Teachers who are teaching first to fifth standard Teachers of both sexes, between the age group of 25yrs- 58yrs.

❖ *Exclusion Criteria:*

- Teachers who are not willing to participate
- Teachers who are on leave.

Sample Size:

The sample size comprised of 100 teachers who teach the students from I-V standard.

Sampling Technique:

Non probability purposive sampling was used in this study.

Methods of Data Collection:

The tool was prepared to assess the effectiveness of self instructional module on learning disabilities among primary school teachers.

The tools are,

- Self administered knowledge questionnaire to assess knowledge.
- Self administered rating scale to assess practice.
- Self instructional module on learning disabilities

❖ **Description of Tool :**

Tool consists of 3 parts.

Part – I

It consists of demographic variables such as age, sex, marital status, number of years of experience in teaching and religion.

Part – II

The self administered knowledge questionnaire consists of 30 multiple choice questions. Each question has got 4 options. One is the correct response.

Part – III

It consists of self administered rating scale on practice. It consists of 16 items which has three responses such as always, rare and never.

❖ Scoring Procedure:

Self administered knowledge questionnaire

The multiple choice questionnaire was used to assess the knowledge on learning disabilities. Each right answer is scored as one and each wrong answer is scored as zero.

Level of knowledge	Knowledge score	Percentage
Adequate	21 – 30	70%-100%
Moderately adequate	11 – 20	34% - 69%
Inadequate	< 10	< 33%

Self administered rating scale on practice.

Structured rating scale questionnaire was used to assess practice of teachers in identifying the students with learning disabilities.

It consists of 16 items which has three responses such as always, rare and never and scored as 3, 2, &1 respectively.

Practice	Practice score	Percentage
Adequate	37-48	76-100%
Moderately adequate	25-36	51-75%
Inadequate	<24	<50%

Validity and Reliability of the Tool:

❖ **Validity:**

The validity of the tool was established in consultation with guide and 4 experts in the field of psychiatric nursing, psychiatric medicine. It was modified according to the suggestions and recommendations of experts.

❖ **Reliability:**

The reliability of the tool was established by administering the tool for 5 teachers in a selected school. Test retest method was used to find out the stability of the structured knowledge questionnaire ($r = 0.96$) and self administered rating scale($r=0.99$). Split half method was used to assess the internal consistency of the tool structured knowledge questionnaire ($r = 0.96$) and self administered rating scale ($r=0.99$). The values were found to be reliable.

Pilot Study:

The pilot study was conducted at Dharapuram for the period of 7 days. 1 government school and one government aided school were selected. After obtaining permission from headmasters, 10 teachers who were fulfilling the inclusive criteria were selected and informed about the objectives. On the first

day pretest was conducted and self instructional module was given. On 7th day posttest was conducted. Mean posttest knowledge and practice scores (28, 12.7) were significantly higher than the mean pretest scores (13.9, 9.3). Post test knowledge and practice scores had significantly positive correlation ($r=0.96$). The paired 't' test value was calculated for posttest knowledge and practice (38.9, 55.2) which were significantly higher than the table value (2.2) at $P < 0.05$ level of significance. It was found that it was feasible and practicable to conduct main study.

Data Collection Procedure:

The data collection was done during allotted period of 4 weeks. 6 private schools and 5 government schools were selected. Teachers who were fulfilling the inclusive criteria were selected. After obtaining permission from district elementary educational officer Erode, assistant elementary educational officer, Dharapuram and head masters of each school, teachers were informed about the objectives of the study. Data were collected from 1-2 schools per day. Between 9am- 4pm investigator met each teacher individually and administered pretest on the first day. For each sample it took around 30 minutes to complete pretest. On the same day self instructional module was provided and on seventh day posttest was conducted to the teachers individually in order to assess the knowledge and practice. Alternatively pretest and posttest was conducted within the stipulated period.

Data Analysis Plan:

Descriptive and inferential statistics was used for data analysis. The collected data was tabulated and analyzed by using descriptive and inferential statistical methods.

S. No.	Data analysis	Methods	Remarks
1.	Descriptive statistics	Frequency percentage Mean, standard deviation, Frequency percentage	To describe the demographic variables on learning disabilities among primary school teachers. To assess the pretest posttest knowledge & practice scores on learning disabilities among primary school teachers.
2.	Inferential statistics	Paired 't' test	To compare the pretest and posttest knowledge and practice scores on learning disabilities among primary school teachers.
		Karl Pearson coefficient correlation (r) test.	To find relationship between the knowledge & practice scores on learning disabilities among primary school teachers.
		Chi square test. χ^2	To find the association between posttest knowledge scores of primary school teachers with their selected demographic variables. To find the association between posttest practice scores of primary school teachers with their selected demographic variables.

Protection of Human Subjects:

After getting approval from dissertation committee pilot study and main study was conducted. Permission was obtained from district elementary educational officer Erode, assistant elementary educational officer, Dharapuram and head master of each school at Dharapuram. Verbal consent was obtained from each teacher before data collection. Investigator assured that the in formations will be kept confidentially.

CHAPTER – IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the analysis and interpretation of the data collected to assess the effectiveness of self instructional module in terms of knowledge and practice on learning disabilities among school teacher at Dharapuram.

Kerlinger (1993) defines analysis as the organizing of data to obtain to research problem question.

Analysis is a process of organising and synthesizing data in such a way that the research question can be answered and hypothesis is tested.

(Polit and Hungler 1990)

The analysis of data collected from 100 primary school teacher to assess the effectiveness of self instructional module on learning disabilities among primary school teachers at Dharapuram.

Organisation of data:

The data has been tabulated are organized as follows:

Section – A : Distribution of demographic variables.

Section – B : Comparison between pretest and post test knowledge and practice scores on learning disabilities among primary school teachers.

Section – C: Correlation of post test knowledge scores, with practice scores on learning disabilities among primary school teachers.

Section – D : Association of post test knowledge scores and selected demographic variables on learning disabilities among primary school teachers.

Section – G : Association of post test practice scores and selected demographic variables on learning disabilities among primary school teachers.

SECTION – A

Table –1 Percentage distribution of primary school teachers according to their demographic variables.

N=100

S. No	Demographic Variables	Frequency	Percentage %
1.	Age (in years) a. < 30s b. 31 -40 c. 41-50 d. >50	45 30 21 4	45 30 21 4
2.	Sex a. Male b. Female	10 90	10 90
3.	Marital status a. Married b. Unmarried c. Divorced d. Widow/ widower	61 37 1 1	61 37 1 1
4.	Number of years of experience in teaching.(in yrs) a. <5 b. 6-10 c. 11-20 d. >20	50 21 21 8	50 21 21 8
5	Religion a. Hindu b. Christian c. Muslim	51 41 8	51 41 8

Table 1 showed the distribution of demographic variables Age, Sex, Marital status, Number of years of experience in teaching and Religion.

Distribution of primary school teachers according to their age group depicts that the highest percentage (45%) of teachers were in the age group of 25-30 yrs where as 30% were in the age group of 31-40 yrs and 21% were in the age group of 41-50 yrs. Least percentage of teachers (4%) were in the group of > 50 yrs. (Fig:2)

Distribution of primary school teachers according to their sex depicts that the most of the teachers (90 %) were females and 10% were males. It shows that most of the teachers are females working in primary schools. Females prefer teaching profession than males and hence most of the primary school teachers were females. (Fig:3)

Distribution of primary school teachers according to their marital status shows that the highest percentage (61%) of teachers was married and 37% of teachers were unmarried. Only one was divorced and one was widow. (Fig:4)

Distribution of primary school teachers according to their number of years of teaching experiences that half of them (50%) were having less than 5yrs of experience. However similar percentages (21%) of teachers were having 6-10 yrs and 11-20 yrs of experience. Only 8% of teachers were having more than 20 yrs of experience. Around half of the number of teachers had more than 5 years of experience. (Fig:5)

Distribution of primary school teachers according to their religion depicts that around half (51%) of teachers were Hindus and 41% of teachers were Christians. Only 8% of teachers were Muslims. Hindu teachers are more because Hindu religion is more prevalent in Tamilnadu. (Fig: 6)

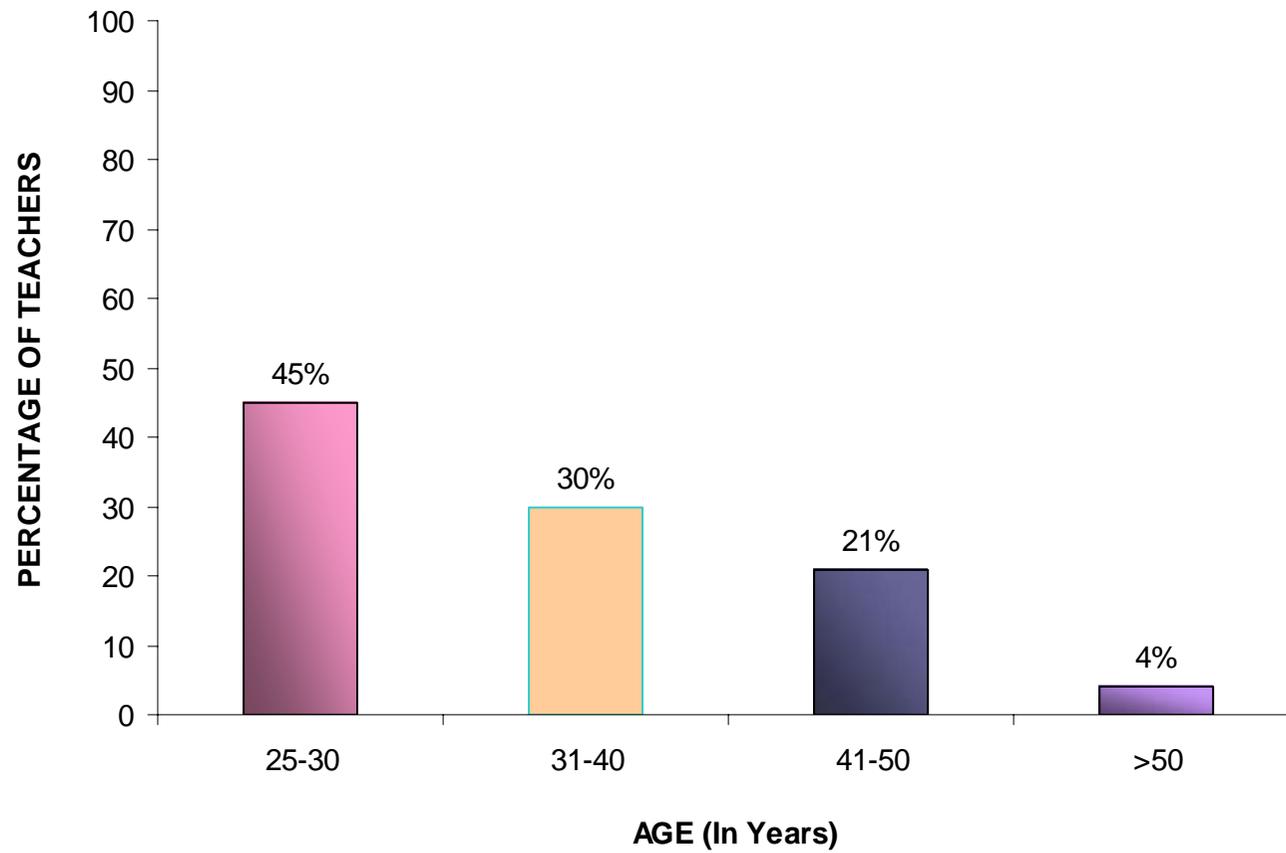


Fig:2 Distribution of primary school teachers according to their age (in yrs)

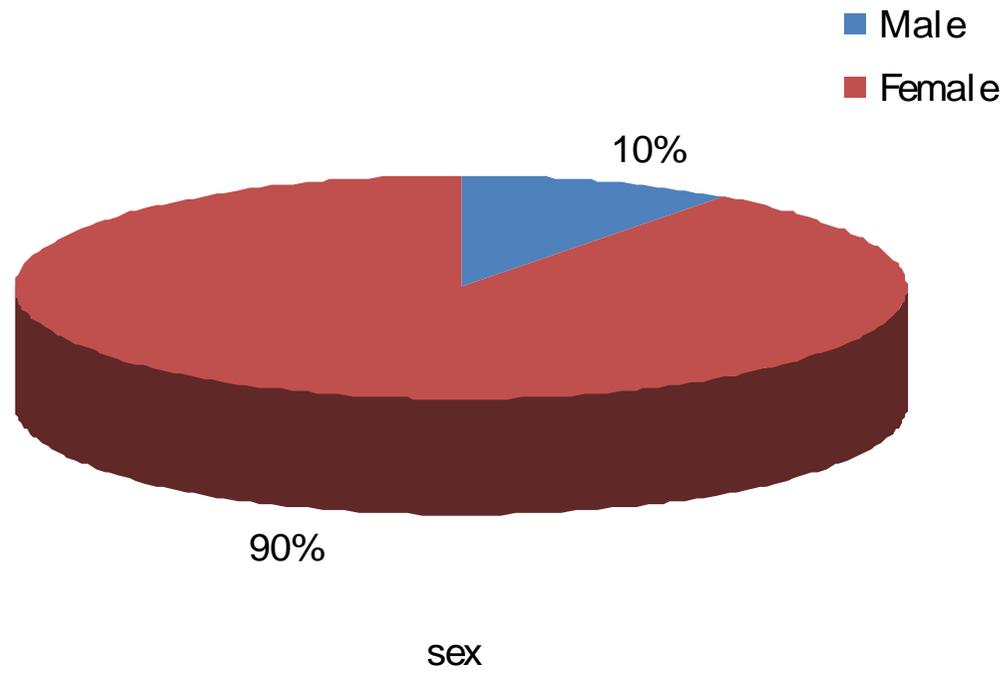


Fig:3 Distribution of primary school teachers according to their sex.

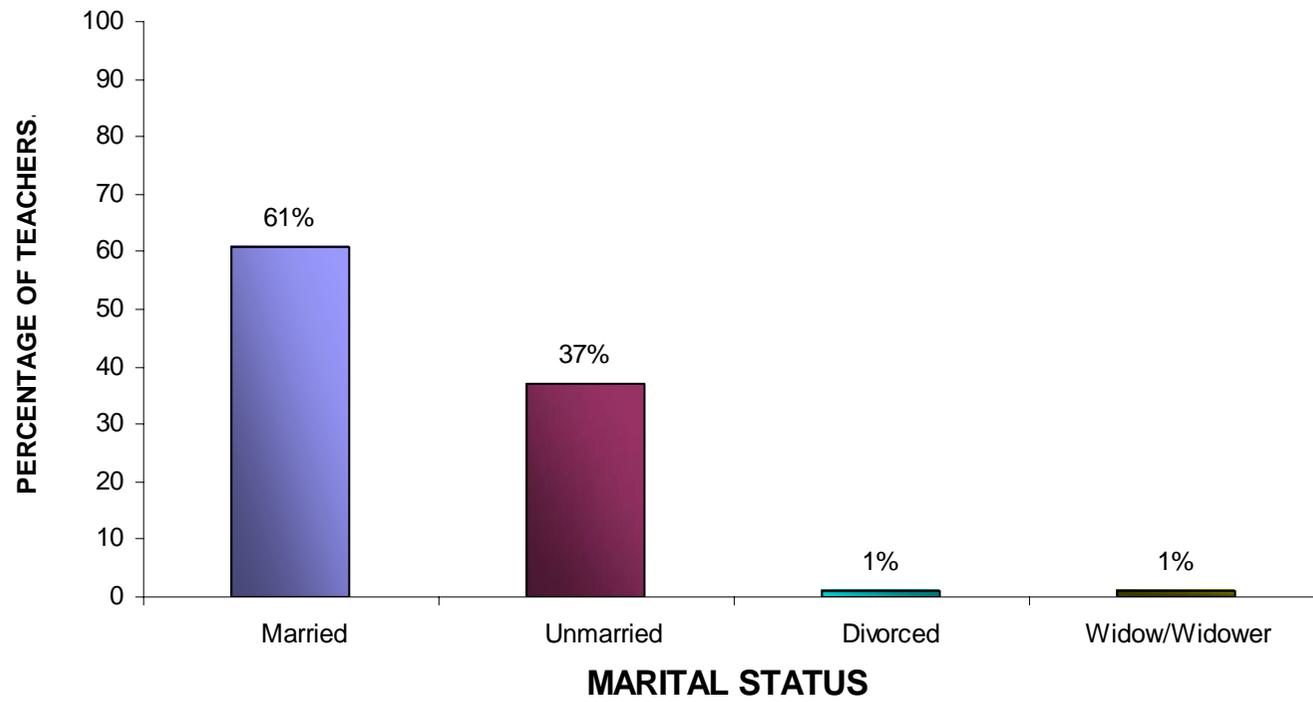


Fig:4 Distribution of primary school teachers according to their marital status.

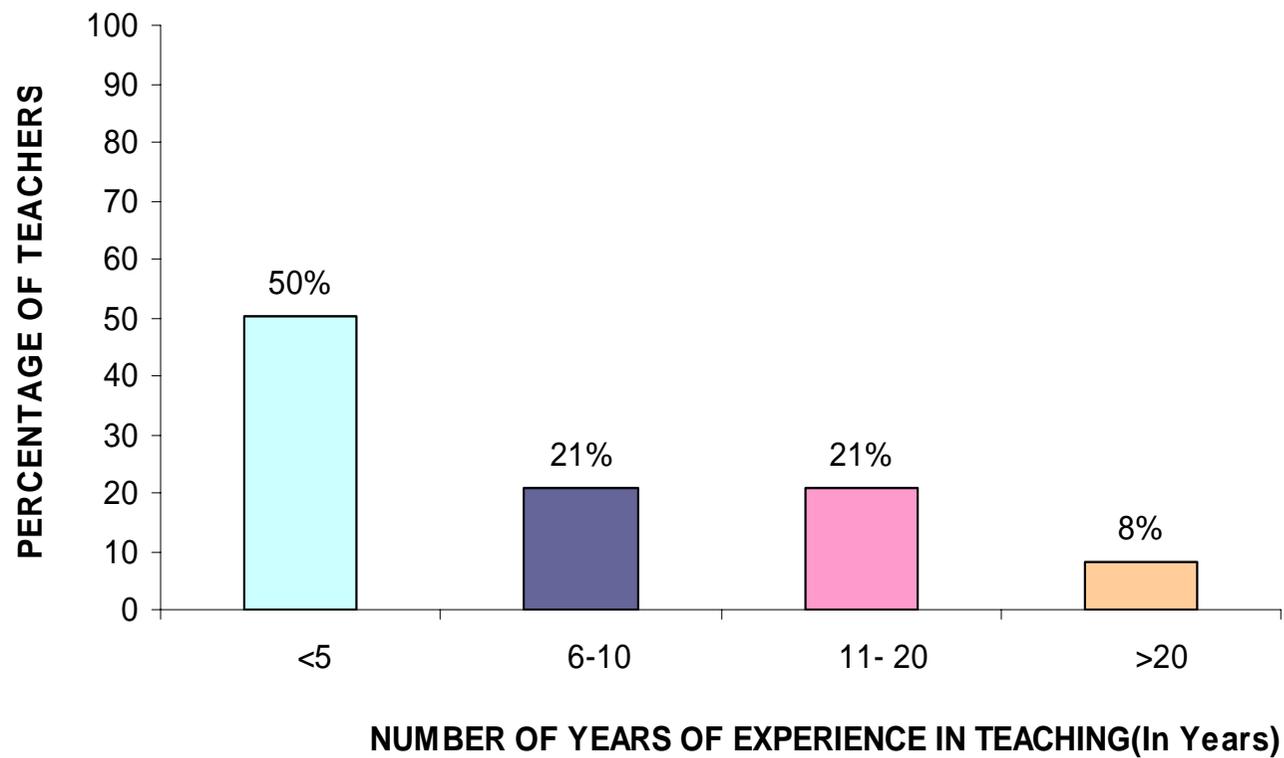


Fig:5 Distribution of primary school teachers according to their no. of years of experience in teaching.

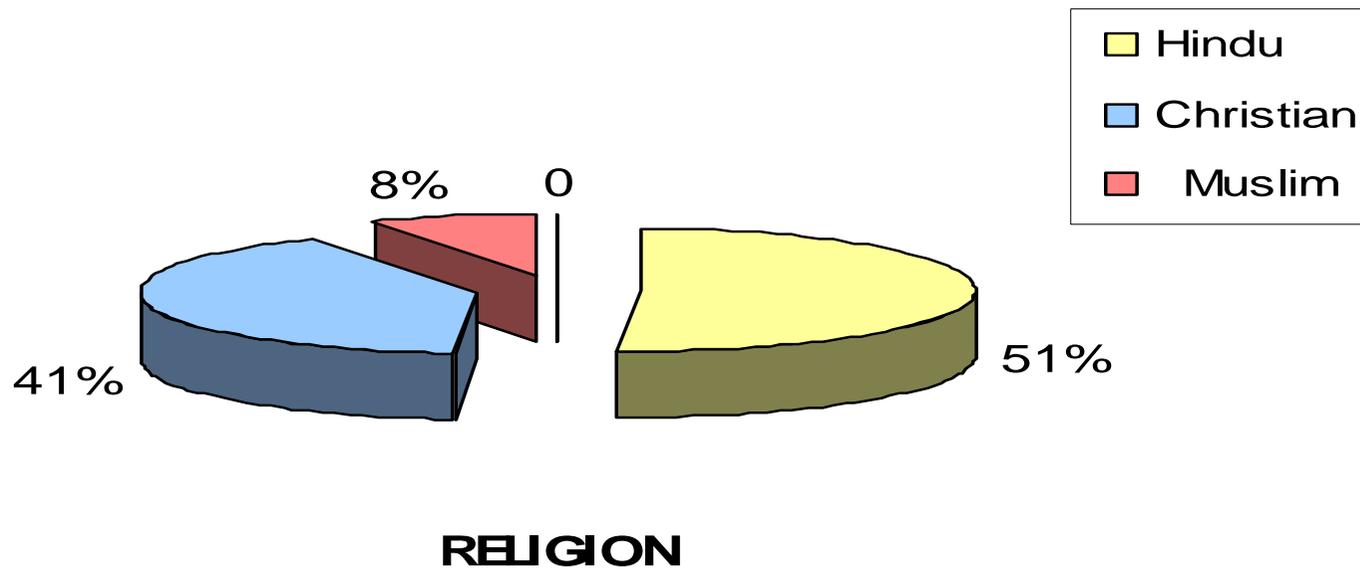


Fig:6 Distribution of primary school teachers according to their religion.

Section - B

Comparison between pretest and posttest knowledge and practice scores on learning disabilities among primary school teachers.

Table –2 : Comparison between the pretest and posttest knowledge scores on learning disabilities among primary school teachers.

N=100

Level of knowledge	Pretest		Post test	
	F	%	F	%
Adequate	-	-	79	79
Moderately adequate	41	41	21	21
Inadequate	59	59	-	-
Total	100	100	100	100

Table 2 showed that in pretest, majority of primary (59%) school teachers had inadequate knowledge and 41% of teachers had moderately adequate knowledge on learning disabilities.

In post test, majority (79%) of primary school teachers had adequate knowledge and 21% of teachers had moderately adequate knowledge on learning disabilities. None of them had inadequate knowledge in posttest.

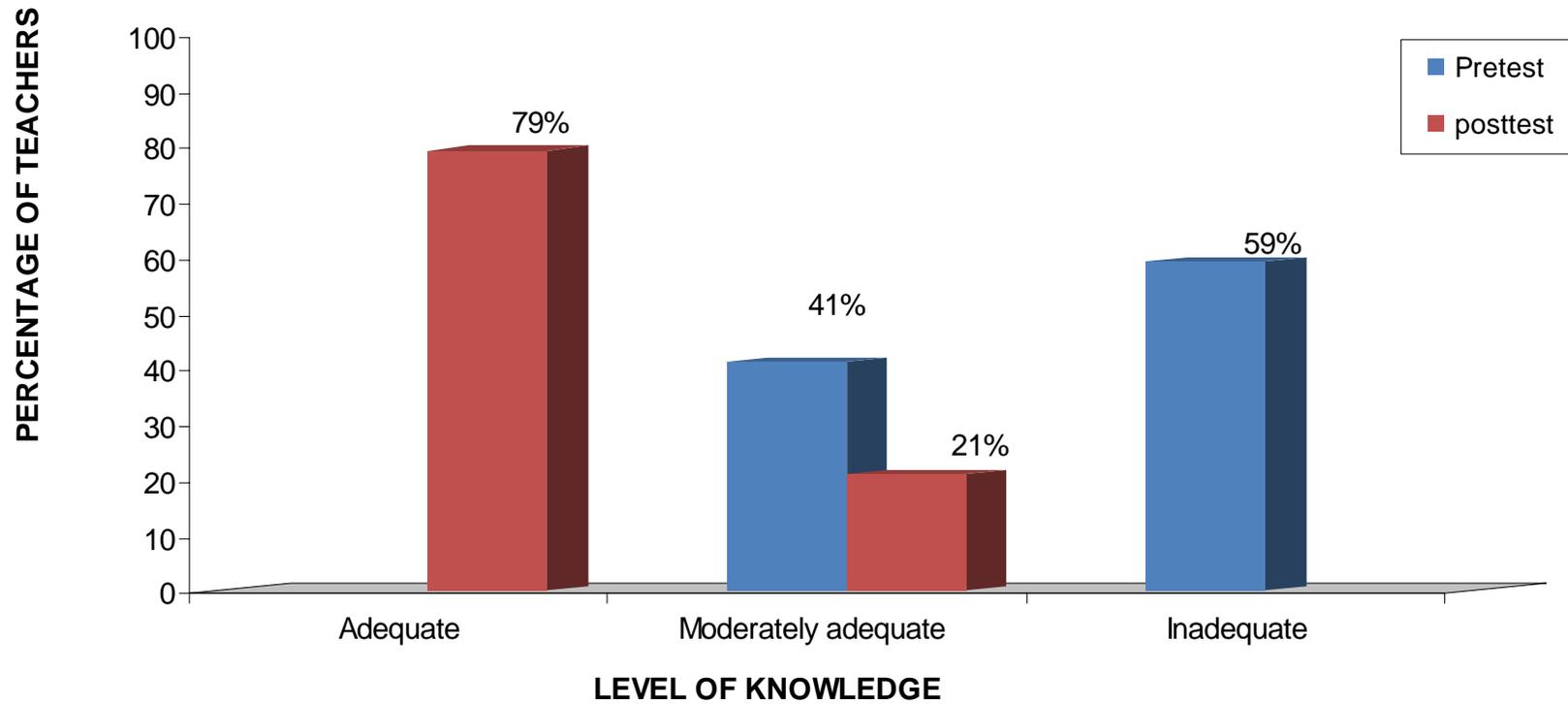


Fig.7 : comparison of pre and post test knowledge on learning disabilities scores among primary school teachers.

Table – 3: Comparison between the pretest and posttest practice scores on learning disabilities among primary school teachers

N=100

Level of practice	Pretest		Post test	
	F	%	F	%
Adequate	-	-	78	78
Moderately adequate	61	61	22	22
Inadequate	39	39	-	-
Total	100	100	100	100

Table 3 showed that in pretest among 100 primary school teachers, majority (61%) of them had moderately adequate practice and 39% of teachers had inadequate practice.

In post test, majority (78%) of the primary school teachers had adequate practice and 22% of teachers had moderately adequate practice on learning disabilities.

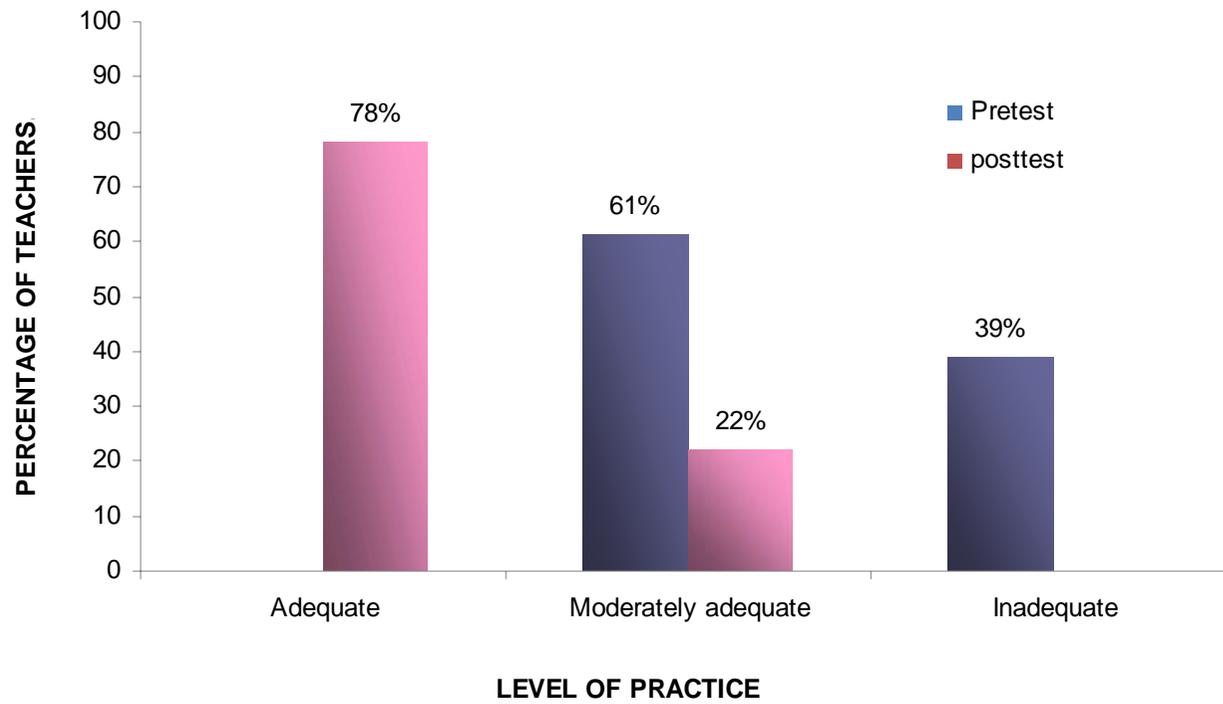


Fig.8: comparison of pre and post test practice scores on learning disabilities scores among primary school teachers.

Comparison of mean, standard deviation and paired‘t’ test value of knowledge on learning disabilities in pre and post test among primary school teachers.

Table: 4

Comparison of mean, standard deviation and paired‘t’ test value of pre and post test knowledge on learning disabilities among primary school teachers.

N: 100

S.NO	Knowledge scores	Mean	SD	“t” value	Table value
1	Pretest	9.5	2.98	28.75	1.658
2	Posttest	22	3.08		

df – 99

(P<.0.05)

Table: 4 showed that the mean posttest knowledge score (22 ± 3.08) was higher than the mean pretest knowledge score. (9.5 ± 2.98).

The paired “t” test showed that calculated value (28.75) was greater than the table value (1.96). Hence It was found that the ‘t’ test value is significant at P < 0.05 level.

Table: 5

Comparison of mean, standard teacher and paired “t” test value of practice in pre and post tests on learning disabilities among primary school teachers.

N=100

S.NO	Practice scores	Mean	SD	“t “value	Table value
1	Pretest	25.56	4.6	27.7	1.658
2	Posttest	41.95	7.17		

df – 99

(P<.0.05)

Table: 5 showed that, the mean posttest practice score (25.56 ± 4.6) is higher than the mean pretest practice score. (41.95 ± 7.17)

The paired “t” test showed that calculated value (27.7) was greater than the table value (1.96). Hence it was found that it is significant at $P < 0.05$ level.

SECTION – C

Table: 6

Correlation between the mean posttest knowledge and practice scores on learning disabilities among primary school teachers.

N=100

S. NO	Variable	Mean	Coefficient correlation	Table value
1	knowledge	22	0.94	0.1946
2	practice	41.95		

df- 98

(P<0.05)

Table: 6 showed that there was positive correlation ($r = 0.94$) found between mean post test knowledge and practice score of primary school teachers and learning disabilities.

SECTION: D

Association of post test knowledge scores on learning disabilities among primary school teacher with their selected demographic variables.

Table: 7: Association between posttest knowledge scores on learning disabilities among primary school teachers on LD with their demographic variables.

N=100

S. NO	Demographic variables	Level of knowledge						χ^2	Table value	Inference
		Adequate		Moderately adequate		Inadequate %				
		F	%	F	%	F				
1	Age (in yrs)									
	25- 30	34	34	11	11			0.848	3.841	(NS)
	31 – 40	18	18	12	12	-	-			
	41 – 50	19	19	2	2					
	>50	3	3	1	1					
2	Sex									
	Male	9	9	1	1	-	-	1.33	3.841	(NS)
	female	66	66	24	24					
3	Marital status:									
	Married							0.124	3.841	(NS)
	Unmarried	45	45	16	16					
	Divorced	28	28	9	9	-	-			
	Widow /	1	1	-	-					
	widower.	1	1	-	-					
4	Number of yrs of teaching									

	experience (in yrs)									
	<5									
	6-10	39	39	11	11					
	11-20	14	14	7	7	-	-	0.049	3.841	(NS)
	>21	14	14	7	7					
		7	7	1	1					
5	Religion									
	Hindu	39	39	12	12					
	Christian	30	30	11	11	-	-	0.118	3.841	
	Muslim	6	6	2	2					(NS)

NS – Not significant

S – Significant df – 1

(P<0.05)

Chi-square values were calculated to find out the association between post test knowledge scores and the selected demographic variables of primary school teachers like age, sex, marital status, number of years of teaching experience and religion. There was no significant association between knowledge scores of primary school teachers and their demographic variables.

SECTION – E

Association of post test practice scores on learning disabilities among primary school teachers with their demographic variables.

Table : 8: Association of post test practice scores on learning disabilities among primary school teachers with their demographic variables.

N=100

S. NO	Demographic variables	Level of practice						χ^2	Table value	Inference
		adequate		Moderately Adequate		In adequate				
		F	%	F	%	F	%			
1	Age: (in years) 25-30 31 – 40 41 – 50 >50	34	34	11	11			0.24	3.841	(NS)
2	Sex Male Female	8	8	2	2	-	-	0.252	3.841	(NS)
3.	Marital status: Married Unmarried Divorced Widow / widower.	47	47	14	14			0.76	3.841	(NS)
		29	39	8	8	-	-			
		1	1	-	-	-	-			
		1	1	-	-					

4	Number of years of teaching experience(in years)									
	<5	43	43	7	7	-	-	0.787	3.841	(NS)
	6-10	14	14	7	7	-	-			
	11-20	16	16	5	5					
	>21	5	5	3	3					
5	Religion:									
	Hindu	39	49	12	12			0.14	3.841	(NS)
	Christian	32	32	9	9	-	-			
	Muslim	7	7	1	1					
	Other	-	-	-	-					

NS – Not significant

S – Significant

df -1

(P<0.05)

Chi-square values were calculated to find out the association between post test practice server and the selected demographic variables of primary school teachers like age, sex, marital status, number of years of teaching experience and religion. There was no variable associated with practice scores. So there was no significant association between practice scores of primary school teachers and their demographic variables.

CHAPTER – V

DISCUSSION

The discussion chapter deals with description of sample characteristics and objectives of the study. The aim of the study was to evaluate the effectiveness of self instructional module on learning disabilities in terms of knowledge and practice among teachers in selected schools, Dhrapuram.

Description of sample characteristics:

Distribution of primary school teachers according to their age group depicts that, the highest percentage (45%) of teachers were in the age group of 25-30 yrs. Least percentage of teachers (4%) were in the group of above 50 yrs of age.

Distribution of primary school teachers according to their sex depicts that, the most of the teachers (90%) were females and 10% were males.

This finding is consistent with the report given by Sarva Siksha Abiyan (2002) in the total number of primary school teachers in Tamilnadu females are constituting 73.99%.

Distribution of primary school teachers according to their marital status shows that, the highest percentage (61%) of teachers were married and 37 % of teachers were unmarried. Only one was divorced and one was widow.

Distribution of primary school teachers according to their number of years of teaching experiences shows that, half of them (50%) were having less than 5yrs of experience. Only 8% of teachers were having more than 20 yrs of experience.

Distribution of primary school teachers according to their religion depicts that, around half (51%) of teachers were Hindus. Only 8% of teachers were Muslims.

The findings are discussed under the following headings:

- Assess the pretest knowledge and practice scores regarding learning disabilities among primary school teachers.
- Assess the posttest knowledge and practice scores regarding learning disabilities among primary school teachers.
- Compare the pretest and posttest knowledge and practice scores regarding learning disabilities among primary school teachers.
- Find out the relationship between posttest knowledge scores and practice scores regarding learning disabilities among primary school teachers.
- Find out the association between posttest knowledge scores with their selected demographic variables.
- Find out the association between posttest practice scores with their selected demographic variables.

First objective: Assess the pretest knowledge and practice scores regarding learning disabilities among primary school teachers

The knowledge and practice of teachers on learning disabilities were done. In pretest 59% of teachers had inadequate knowledge and 41% of teachers had moderately adequate knowledge on learning disabilities. 61% of teachers were having moderately adequate practice and 39% of teachers had inadequate practice in pretest.

This finding is more or less similar with the study conducted by Anderson David, W., (2007) 82% had moderately adequate practice and 18% of teachers had adequate practice on learning disabilities.

Second objective: Assess the posttest knowledge and practice scores regarding learning disabilities among primary school teachers

The assessment of posttest knowledge and practice regarding learning disabilities among 100 primary school teachers shows that 79% of teachers had inadequate knowledge and 21% of teachers had moderately adequate knowledge. Majority (78%) of the teachers had adequate practice on learning disabilities and 22% of teachers had moderately adequate practice.

Third objective: Compare the pretest and posttest knowledge and practice scores regarding learning disabilities among primary school teachers

The assessment of knowledge and practice scores of primary school teachers after giving self instructional module showed that knowledge and practice score had been markedly increased as evidenced by post test analysis.

The knowledge level of primary school teachers in post test had mean score of 22 ± 3.08 which was higher compared to the mean score of 9.5 ± 2.98 in pretest. The paired 't' test value of knowledge scores was 28.75. It is significant at $p < 0.05$ level.

The practice level of primary school teachers in post test had mean score of 41.95 ± 7.17 which was an excellent score compared to the mean score of 25.56 ± 4.6 in pretest. The paired 't' test value of practice scores was 27.7. It is significant at $p < 0.05$ level. Hence the research hypotheses, the mean posttest knowledge scores are significantly higher than the mean pretest knowledge scores on learning disabilities among teachers and the mean posttest practice scores are significantly higher than the mean pretest practice scores on learning disabilities among teachers are accepted.

This finding is consistent with the study conducted by Lalitha, K., (2009) stated that the mean posttest knowledge score 28.78 ± 5.41 is higher than the mean pretest score 17.5 ± 4.19

Fourth objective: Determine the relationship between posttest knowledge scores and practice scores regarding learning disabilities among primary school teachers

There was positive correlation ($r = 0.94$) found between mean post test knowledge and practice score of primary school teachers and learning disabilities. Further it could be confirmed that knowledge and practice depends on each other. The reason might be, when the knowledge is improving practice will also develop positively. Hence the research hypothesis **H₃** is accepted that, there is significant relationship between the posttest knowledge and practice scores on learning disabilities among teachers. It can be concluded that knowledge and practice are dependent on each other.

Fifth objective: Determine the association between posttest knowledge scores with their selected demographic variables

Chi-square values were calculated to find out the association between post test knowledge scores of primary school teachers with their age ($\chi^2 = 0.848$), sex ($\chi^2 = 1.33$), marital status ($\chi^2 = 0.124$), number of years of teaching experience

($\chi^2 = 0.004$) and religion ($\chi^2 = 0.118$). No demographic variable has association with the knowledge regarding learning disabilities. Therefore **H4** was rejected and concluded that there was no association found between the posttest knowledge scores of teachers with their selected demographic variables.

This study finding is consistent with the study conducted by Al.Khatib, and Jamal, M., (1985) stated that teacher's level of knowledge was unrelated to teacher's age, teaching experience or qualification but females teachers were found to be more knowledgeable than male teachers.

Sixth objective: Determine the association between posttest practice scores with their selected demographic variables

Chi-square values were calculated to find out the association between post test practice scores of primary school teachers with their age ($\chi^2 = 0.24$), sex ($\chi^2 = 0.252$), marital status ($\chi^2 = 0.76$), number of years of teaching experience ($\chi^2 = 0.787$) and religion ($\chi^2 = 0.14$). No demographic variable has association with the practice regarding learning disabilities. Therefore **H5** was rejected and inferred that no association between the posttest practice scores on learning disabilities among teachers with their selected demographic variables.

CHAPTER VI

SUMMARY, CONCLUSION, IMPLICATIONS, RECOMMENDATIONS AND LIMITATIONS

This chapter is divided into five aspects:

- Summary
- Conclusion
- Implication
- Recommendation
- Limitation

SUMMARY OF THE STUDY:

The study was done to assess the effectiveness of self instructional module on learning disabilities in terms of knowledge and practice among primary school teachers.

The research design used for the study was pre experimental design. The research approach used for the study was evaluative approach. The study was conducted at Dharapuram. The conceptual frame work was based on Alabwign Von Bertlanffy model (1968)

A sample of 100 primary school teachers, who met inclusion criteria were selected. Purposive sampling technique was used for sampling. The tool used to assess the knowledge and practice of primary school teachers on learning disabilities, consisted three parts.

PART I - Demographic variables

PART II - Self administered knowledge questionnaire

PART III- Self administered rating scale on practice.

The investigator gave brief introduction and pretest was conducted on the 1st day. On the same day self instructional module was given. On 7th day post test was conducted.

The major findings of the study are summarized as follows:

- Highest percentage of primary school teachers (45%) were in the age group of 25-30yrs.
- Majority of the primary school teachers were females (90%).
- Most of the primary school teachers were (61%) married.
- Highest percentage of primary school teachers (50%) were having less than 5 yrs of experience.
- Around half of the primary school teachers were (51%) Hindus.
- In pretest most of the teachers (59%) had inadequate knowledge and 41% of teachers had moderately adequate knowledge where as in posttest most

of the teachers (79%) had adequate knowledge and 21% of teachers had moderately adequate knowledge.

- In pretest most of the teachers (61%) had moderately adequate practice and 39% of teachers had inadequate practice where as in posttest most of the teachers (78%) had adequate practice and 22% of teachers had moderately adequate practice.
- Highly significant differences were found between pretest and posttest knowledge and practice scores. ($p < 0.05$).
- Positive correlation was found between posttest and practice scores of primary school teachers.
- There was no association between knowledge scores and the selected demographic variables of primary school teachers.
- There was no association between practice scores and the selected demographic variables of primary school teachers.

CONCLUSION:

Based on the findings, the following conclusion was drawn.

The existing knowledge of primary school teachers on learning disabilities was inadequate and moderately adequate. The existing practice of primary school teachers on learning disabilities was inadequate and moderately adequate. The self instructional module was significantly effective to improve the knowledge ('t' value=28.75) and practice ('t' value=27.7) level of primary school teachers

regarding. There was no association between knowledge and practice scores with their selected demographic variables of the primary school teachers.

IMPLICATIONS FOR NURSING:

Nursing service:

- Psychiatric nurse can conduct periodic teaching programme on learning disabilities to improve knowledge and practice.
- Structured teaching programme can be conducted by psychiatric nurses among parents on learning disabilities.
- Training programme can be conducted for teachers regarding identification of psychiatric illnesses such as mental retardation, attention deficit hyperactive disorder and behavioural problems.

Nursing education:

- The study emphasis the need of educating the nursing personnel through in-service or continuing education to update their knowledge and skills in educating the primary school teachers and parents regarding learning disabilities.
- Nursing curriculum has to focus the nursing students to develop knowledge and skills in identifying and treating disease among school children.
- Nursing students can use self instructional module for giving health education in the community.

Nursing research:

- Findings of the study help to expand the body of professional knowledge upon which further research can be conducted.
- The study will be a valuable reference material for future researchers.

Nursing administration:

- The study will help nursing administrative authority to recognize the need for conducting awareness programme on learning disabilities.
- Administration in both private and government sectors should take initiative action to update the knowledge of health personnel regarding school health by in- service education.
- Provision should be made for money in budget in order to identify the learning disabilities of school children and to conduct health awareness programme.
- Multisectorial approach will be beneficial in treating learning disabilities for which nursing administration should have policy guidelines.

RECOMMENDATIONS:

- Replication of the study can be conducted for a large group of samples.
- A structured teaching programme can be conducted among parents
- A comparative study can be conducted between urban and rural school teachers.
- A comparative study can be conducted between government and private school teachers.
- A comparative study can be conducted between regular and special educators.
- Replication of the study can be conducted by using different method of teaching aids.

LIMITATION:

It was difficult to gather all the teachers at a time.

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SELF INSTRUCTIONAL MODULE PLAN
ON
LEARNING DISABILITIES

GENERAL INFORMATIONS :-

Topic	-	Learning Disabilities
Date	-	
Time	-	
Place	-	School
Method of Teaching	-	Self
AV Aids	-	Booklet
Group/Individual	-	Individual
Name of the Teacher	-	X. Aron Christy, II Year M.Sc (N)

CENTRAL OBJECTIVE :-

The group members will gain knowledge regarding learning disabilities, develop desirable attitude and skills in identifying students with learning disabilities.

SPECIFIC OBJECTIVES :-

The group members will be able to,

- define learning
- list out the types of learning
- explain the process of learning
- enumerate the causes
- explain the types

- describe the clinical features
- list out the diagnostic measure
- explain management
- enumerate the complications
- outline tips for parents
- enumerate role of teacher
- explain the special services available.

INTRODUCTION :

Learning occupies a very important place in our life. Most of what we do or do not influenced by what we learn and how we have learnt it. Learning therefore provides a key or structure to personality and behaviour. An individual starts learning immediately after his birth or in the strict sense, even earlier when in the womb of the mother. Experience direct or indirect is found to play a dominant role in molding and shaping the behaviour of the individual from the very beginning.

DEFINITION OF LEARNING :

Learning is the process by which behaviour is originated or changes through practice or training.

- Kingsley and Garry

So learning is a process which brings relatively permanent changes in the behaviour of a learner through experience or practice.

TYPES OF LEARNING:

There are many types of learning. The major types are as follows.

(i) Verbal Learning :-

Learning of this type helps in the acquisition of verbal behaviours. The languages we speak, the communication devices we use, are the result of such learning. Rote learning and rote memorization which is a type of school learning is also included in verbal learning. Signs, pictures, symbols, words, figures, sound and voices etc are employed by the individual as an essential instrument for engaging him in the process of verbal learning.

(ii) Motor Learning :-

The learning of all types of motor skills may be included in such type of learning. Learning how to swim, riding a horse, driving a car, flying a plane, playing the piano are the examples of such learning.

(iii) Concept Learning :-

A concept in the form of a mental image denotes a generalized idea about the things, persons or events. For example our concept of 'tree' is a mental image that brings to us the similarities or common properties of all the different trees we know.

We will call a thing tree when it has some specific characteristics the image of which we have already acquired in our mind on account of our previous experience perception or rich integration. The format of such concepts on account of previous experience, training or cognitive processes is called concept learning. Such type of concept process is very useful in recognizing, naming and identifying the things. All of our behaviour verbal, symbolic, motor as well as cognitive is influenced by our concepts.

(iv) Problem solving :-

In the ladder of learning and acquisition of behaviour, problem solving denotes a higher type of learning. Such type of learning requires

the use of the cognitive abilities like reasoning, thinking, power of observation, discrimination, generalization, imagination, ability to inter relate and draw conclusion etc.

PROCESS OF LEARNING IN LEARNING DISABILITIES

The four stages in learning are: Input, integration storage and output.

Input :-

This is the information perceived through the senses, such as visual and auditory perception. Difficulties with visual perception can cause problems with recognizing the shape, position and size of items seen. There can be problems with sequencing which can relate to deficits with processing time intervals or temporal perception. Difficulties with auditory perception can make it to screen out compelling sound, in order to focus on one of them, such as the sound of teacher's voice. Some children appear to be unable to process tactile input. For example, they may be seen insensitive to pain or dislike being touched.

Integration :-

This is the stage during which perceived input is interpreted, categorized, placed in a sequence or related to previous learning. Students with problems in these area may be unable to tell a story in the correct sequence, unable to memorize sequences of information such as the days of the week, able to understand a new concept but be unable to generalize it to other areas of learning or able to learn facts but be unable to put the facts together to see the big picture. A poor vocabulary may contribute to problems with comprehensive.

Storage :-

Problems with memory can occur with short term or working memory, or with long term memory. Most memory difficulties occur in the area of short term memory which can make it difficult to learn new material without many more repetition then is usual. Difficulties with visual memory can impede learning to spell.

Output :-

Information comes out of the brain through words that is language output or through muscle ability such as gesturing, writing and drawing. Difficulties with language output can create problem with spoken

language. For example answering a question on demand, in which one must retrieve information from storage, organize our thoughts and put the thought into words before we speak. Difficulties with motor abilities can cause problem with gross and fine motor skills. They may also have trouble running, climbing or learning to ride a bicycle. People with fine motor difficulties may have trouble in buttoning shirts, tying shoelaces or with handwriting.

LEARNING DISABILITIES

Learning disabilities are problems that affect the brain's ability to receive, process, analyze or store information. These problems can make it difficult for a student to learn as quickly as someone who isn't affected by learning disabilities.

Some Facts about learning disabilities are as follows:

- 1) The learning disabled have difficulties with academic achievement and progress. Discrepancies exist between a person's potential for learning and what he actually learns.
- 2) The learning disabled show an uneven pattern of development. Learning problems are not due to environmental disadvantages.

- 3) Learning problems are not due to mental retardation or emotional disturbances.

DEFINITION OF LEARNING DISABILITIES:

A learning disability is a neurological condition that affects a child's brain and impairs his ability to carry out one or many specific tasks. These tasks include being able to read, write, speak, listen and calculate.

A learning disability can also be defined as a differences exist between children's learning capacity and their actual learning ability.

A learning disabled child is neither slow nor mentally retarded. An affected child can have normal or above average intelligence.

EPIDEMIOLOGY:

Globally 5% of school aged population has been affected with learning disabilities. 52.4% of all students with disabilities ages 6-21 years Boys out numbers girls. The prevalence of learning disabilities is quite high in countries like Great Britain 14%, France 12-14%, USA 10-15%, Canada 10-16%. 10% of children are identified in India.

RISK FACTORS FOR LEARNING DISABILITIES

- A family history of learning disabilities
- Speech and language delay
- Recurrent, chronic otitis media
- Fine & gross motor delays
- Maternal substance abuse during pregnancy such as smoking, alcohol use and cocaine use
- Seizure disorders
- Cancer survivors after high dosages of CNS radiation
- Low birth weight
- Cord around the neck
- Jaundice
- Central nervous system infection, such as encephalitis or meningitis
- Lead poisoning
- Tourette syndrome
- Viral bacterial or genetic injuries Congenital hypothyroid syndrome
- Attention deficient disorders
- Problems with socialization

CAUSES:

There is no one common factor that causes a learning disability in a child. In most cases it is inherited.

Today a leading theory is that learning disabilities stem from subtle disturbances in the brain structures and function. Some scientists believe that in many cases, the disturbance begins before birth.

Errors in fetal brain development :-

Throughout pregnancy, the brain development is vulnerable to disruptions. If the disruption occurs early the fetus may die or the infant may be born with wide spread disability and possibly mental retardation. If the disruption occurs later, when the cells are becoming specialized and moving into place, it may leave errors in the cell makeup, location, or connections. Some scientists believe that these errors may later show up as learning disorders.

In the early stages of pregnancy, the brainstem forms. It controls basic life function such as breathing and digestion. Later deep ridge divides the cerebrum the thinking part of the brain in to two halves, a right and left hemisphere. Finally the areas involved with processing sight,

sound and other senses develop as well as the areas associated with attention, thinking, and emotion.

Factors that affect brain development :-

By studying the normal process of brain development, scientist can better understand what can go wrong. Some of these studies are examining how genes, substance abuse, pregnancy problem, and toxins may affect the developing brain.

Genetic Factors :-

The fact that learning disabilities tend to run in families indicates that there may be a genetic link. For example children who lack some of the skills needed for reading, such as learning the separate sounds of words are likely to have a parent with a related problem. There may be an alternative explanation for why learning disabilities may seen to run in families.

Tobacco, Alcohol and Other Drug Use :-

Many drugs taken by the mother pass directly to the fetus. Research shows that a mothers use of cigarette, alcohol and other drug use during pregnancy may have damaging effects on the unborn child.

Alcohol also may be dangerous to the fetus developing brain. It appears that alcohol may distort the developing neurons. Heavy alcohol use during pregnancy has been linked to fetal alcohol syndrome, a condition that can lead to low birth weight, intellectual impairment, hyper activity and certain physical defects.

Drugs such as cocaine especially in the smokable form known as crack seem to affect the normal development of brain receptors.

These brain cell parts help to transmit incoming signals from our skin, eyes and ears and help regulate our physical response to the environment.

Problems during pregnancy or delivery

Other possible causes of learning disabilities involve complication during pregnancy. In some cases the mothers immune system reacts to the fetus and attacks it as if it were an infection.

This type of disruption seems to cause newly formed brain cells to settle in the wrong part of the brain or during delivery, the umbilical cord may become twisted and temporally cut off oxygen to fetus. This too can impair brain function and lead to learning disabilities.

Toxins in the child's environment

New brain cells and neural network combine to be produce for a year or so after the child is born. The cells are vulnerable to certain disruption also.

Researches are looking into environmental toxins that may lead to learning disabilities possibly by disrupting child hood brain development or brain processes.

Cadmium and lead both prevalent in the environment are becoming a leading focus of neurological research.

TYPES:

(i) Dyslexia :

A Language based disability in which a person has trouble in understanding written words. It may be referred to as reading disability or reading disorder

Reading comprehension occurs when there is an inability to grasp the meaning of words, phrases and paragraphs. Signs are;

- Letter and word recognition
- Understanding words and ideas

- Reading speed and fluency
- General vocabulary skills

Examples:

The dyslexic may reverse letters like 'b' and 'd' or 'p' and 'q' either when reading or writing.

He may invert letters reading and writing 'n' as 'u', 'm' as 'w', 'd' as 'q', 'p' as 'b', 'f' as 't'.

He may read or write words 'no' for 'on', 'rat' for 'tar', 'won' for 'now', 'saw' for 'was'.

He may read or write 17 for 71

He may read 'felt' as 'left', 'act' as 'cat' (Puts letters in wrong order)

He may put syllables in wrong order as 'animal' as 'aemial', 'enemy' as 'emeny'.

He may omit letters ie reading or writing cat for cart, wet for went, sing for string.

(ii) Dyscalculia:

A mathematical disability in which a person has a difficulty in solving arithmetic problems and grasping math concepts.

Dyscalculia has a mixed form characterized by having difficulties both reading and with math. Children with dyscalculia often required a long time to carry out even simple arithmetic tasks.

A child with a math - based learning disorder may struggle with memorization and organization of number, operation, signs and number facts like $5 + 5 = 10$ or $5 \times 5 = 25$.

The examples are;

- The dyslexic may have a problem with numbers and calculations involving adding, subtracting and timetables.
- He may be confused by similar looking mathematical signs + and X, , +, =, <, >.,.
- He may not grasp that the words difference, reduction and minus all suggest subtraction.
- The dyslexic may reverse numbers and read or write 17 for 71.
- He may transpose numbers 752 - 572.
- He may have a difficulty with mental arithmetic

- He may have a problem with telling the time

(iii) Dysgraphia:

Dysgraphia is a writing disability in which a person finds it hard to form letters or within a defined space.

These children usually will have extremely poor hand writing

Children with dysgraphia often have sequencing problems what usually appears to be a perceptual problem (Reversing letters or numbers, writing words backwards, writing letters out of orders and very sloppy handwriting) is often directly related to sequential or rational information processing difficulty present.

- They have problem with, Tight awkward pencil grip and body position while writing
- Illegible handwriting
- Avoiding writing or drawing tasks
- Unfinished or limited words in sentence
- Difficulty with syntax, structure and grammar

(iv) Dyspraxia:

Dyspraxia refers to variety of difficulties with motor skills

It is some times referred to as output activity meaning it relates to the output of information from the brain.

It can cause difficulty with single step tasks

Examples,

- Problem in combing, waving bye
- Brushing teeth, getting dressed.
- Hand eye coordination like holding pencil or buttoning shirts

(v) Non verbal learning disability:

Non verbal learning disabilities often manifest in motorclumsiness, poor visual - spatial skills, problematic social relationships, difficulty with math, poor organization skills.

This individuals often have specific strengths in the verbal domains, including early speech, large vocabulary, early reading and spelling skills, excellent rote memory and auditory retention and eloquent self expression

(vi) Sensory processing disorders:

It is a sensory disability where in a person has difficulty in understanding language despite normal hearing and vision. Deficits are with the processes of recognizing interpreting information taken in through senses.

The two most common areas of processing difficulty associated with learning disabilities are visual and auditory perception.

Typically individuals with central auditory disorder have normal hearing when taking a traditional pure and speech hearing tests but are unable to interpret or process speech when in an environment which is less than quiet.

Environment such as class room setting and community gatherings can be threatening because of this auditory difficulty.

An inability to distinguish subtle difference in sound or hearing sounds at the wrong speed make it difficult to sound out words and understand the basic concepts of reading and writing.

Problems in visual perception may include missing subtle differences in shapes, reversing letters or numbers skipping words lines, misperceiving depth or distance, or having problems with eye hand coordination.

CLINICAL FEATURES:

Early warning signs:

- Poor performance on group test
- Difficulty discriminating size, shape and color
- Reversals in writing and reading
- General awkwardness
- Poor visual motor coordination
- Hyper activity
- Difficulty coping accurately from a model
- Slowness in completing work Easily confused by instructions
- Poor short term or long term memory
- Behaviour often inappropriate for situation
- Failure to see consequences for his action
- Overly distractible difficulty concentrating
- Poor peer relationships
- Overly excitable during group play

- Poor social judgment
- Lags in developmental milestones (Eg: Motor, language)

Signs and symptoms:

Age 0 to 4 years

- Speaks later than most children
- Pronunciation problems
- Slow vocabulary growth, often unable to find the right word
- Difficulty rhyming words
- Trouble learning numbers, alphabet, days of the week, colors, shapes.
- Extremely restless and easily destructor
- Fine motor skills slow to develop

Age 5 to 9 years:

- Slow to learn the connection between letters and sounds
- Confuses basic words (Run, eat, want)
- Makes consistent reading and spelling errors including letters reversals (b/d) inversion (m/w) transpositions (felt/left) and substitution (house/home)
- Transposes number sequence and confuses arithmetic signs(+,-,X,=)

- Slow to learn new skills, relies heavily on memorization
- Unstable pencil grip
- Trouble learning about time

Age 10 to 12 years

- reverse letter sequences (Soiled/ solid, left/felt)
- Slow to learn prefixes, suffixes, route words, and other spelling strategies
- Avoids reading allowed
- Trouble with word problems
- Awkward fist like or tight pencil grip
- Avoid writing assignments
- Slow and poor recall of facts
- Difficulty making friends
- Trouble understanding body language and facial expressions

Age 13 to 16 years

- Continuous to spell correctly, frequently speaks the same word differently in a single piece of writing
- Trouble summarizing
- Avoids reading and writing tasks

- Trouble with open ended questions or tests
- Weak memory skills
- Difficulty adjusting to new settings
- Works slowly
- Either pays to little attention to details or focuses on them too much.

DIAGNOSTIC EVALUATION:

The identification of a learning disorder involves the examination of two kinds of evidence:

1. A detailed case history - It is important to correct detail information regarding the child's birth, development, familial status, learning environment, medical history and social - emotional adjustment. This is them by interviewing the patients / care givers and often provides reasonably good insight into the issues underlying the learning problem.

2. Evaluation of child - information regarding the child's functional skills can only be gain by directly assessing him or her using informal and formal testing procedures. The child is tested in the areas of motor, speech - language, sensory, cognitive, perceptual and academic skills. Psychological test are often carried out to identify and rule out associated

features such as intelligence level, behavioural and social emotional issues.

Specialists needed to do psychological testing and result interpretation:

- Clinical psychologist
- School psychologist
- Educational psychologist
- developmental psychologist
- Neuro psychologist Psycho metrists
- Occupational therapists
- Speech and language therapists

MANAGEMENT:

Treatment centers on educational management but also involve medical behaviour and psychological therapy. Effective teaching programme may take a remedial, compensatory, or strategic approach. A mismatch of instructional method to a child's learning disabilities and learn performance aggravates the disabilities.

Some children requires specialized instruction in only one area while continuing to attend regular classes. Other children need separate intense educational programmes.

Drugs minimally affect academic achievement intelligence and general learning disability eg: Stimulants such as methyl phenidate.

Early intervention

It involves identifying the problem areas and designing a programme to suit the child's needs specialized education programme, therapy services for the child along with support for the family and school in an integral part of intervention.

Interdisciplinary approach:

The child should be provided the required services in an interdisciplinary setting. An ideal intervention team generally consists special education, speech and language, pathologist, occupation therapist, physiotherapist and counselors.

COMPLICATIONS OF LEARNING DISABILITIES:

Dealing with social and emotional challenges is part of everyday, but if can particularly challenging for any identical with learning disabilities.

As a consequence of struggling day and day out at school many individuals with LD perceive themselves as less competent.

Anxiety is the most frequent emotional symptoms reported by individual with learning disabilities. Individual with learning disabilities become fearful because of their constant frustration and confusion in school. Many of the problems caused by learning disabilities occur of frustration with school or social situation. Researches have frequently observed that frustration produces anger. Depression is also a frequent complication in learning disabilities.

TIPS FOR THE PARENTS OF CHILDREN

- Take time to listen to the children as much as can
- Love them by touching them, hugging them, tickling them.
- Look for and encourage their strengths interest and abilities. Help them to use compensation for any limitations or disabilities.
- Reward them with praise them good words, smiles and put on the back as often as you can
- Accept them for what they are and for their human potential for growth development. Be realistic in your expectations and demands.

- Help them to correct their errors and mistakes by showing and demonstrating what they should do
- Give them reasonable closers and regular family work responsibilities when ever possible Provide toys, games, motor activities and opportunities that will stimulate them in their development
- Take them to libraries and encourage them to select and check out of interest
- Serve as a model to them by reading and discussing material of personal interest.

ROLE OF TEACHER:

Provide instruction and accommodation to address the students needs.

Suggested class room accommodation for specific behaviours.

When you see this behaviour	Try this accommodation
<p>1. Difficulty sequencing and completing steps to accomplish specific tasks (Eg; Writing a book, term paper, organized paragraphs)</p> <p>2. Difficulty following through on instructions from others</p>	<p>- Break up task into workable and obtainable steps</p> <p>- Provide examples and specific steps to accomplish tasks</p> <p>Gain students attention before giving directions use alerting cues. accompany oral directions with written directions</p> <p>Give one direction at a time. quietly repeat directions to the students after they have been given to the rest of the class.</p> <p>Check for understanding by having the student repeat the directions.</p>
<p>3. Difficulty completing assignments</p>	<p>List and / or post all stpes necessary to complete each assignment</p> <p>Reduce the assignment into manageable sections with specific due dates. Make frequent checks for work</p>

<p>4. Difficulty with any task that requires memory</p>	<p>Combine seeing, saying, writing, and doing, student may need to subvocalize to remember.</p> <p>Teach memory techniques as a studies strategy eg: Mnemonics, visualization, oral rehearsal, numerous repetitions</p>
<p>5. Difficulty with test taking</p>	<p>Allow extra time for testing, teach test taking skills and strategies, and allow student to be tested orally.</p>
<p>6. Confusion from nonverbal cues</p>	<p>Use clear, readable and uncluttered test forms. Use test format that the student is most comfortable with.</p>
<p>7. Confusion from written material (difficulty finding main idea from a paragraph attributes greater)</p>	<p>Allow ample space for student response. Consider having lined answer spaces for essay or short Answer test.</p> <p>Directly teach (tell the student)that what non verbal cues mean.</p> <p>Model and have student practice reading cues in a state setting.</p> <p>Provide student copy of reading material with main ideas underlined or highlighted.</p> <p>Provide an outline of important points from reading material.</p>

	<p>Teach outlining main idea/details, concepts.</p> <p>Provide take of text /chapter.</p> <p>Allow peers to share carbon copy notes presentation. Have student compare own notes with a copy of</p>
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<p>8. Poor handwriting (often minimizing cursive with manuscript and capitals with low - case letters)</p>	<p>Allow for a scribe and grade for content, not handwriting. Allow for use of computer or typewriter</p> <p>Consider alternative method for student response (eg. Tape recorder, oral reports etc)</p> <p>Don't penalize student for minimizing cursive and manuscript (accept any method of production)</p> <p>Use pencil with rubber grip</p>
<p>9. Difficulty with fluency in handwriting eg. Good letter/word production but very slow and laborious</p>	<p>Allow for shorter assignment (quality and quantity)</p> <p>Allow alternate method of production (computer, scribe, oral presentation etc.) Use pencil with rubber grip</p>
<p>10. Poor self monitoring (careless, errors in spelling, arithmetic, reading)</p>	
<p>11. how fluency or production of written material (takes hours on a 10 minute assignment)</p>	<p>Teach specific methods, of self monitoring (eg. Stop -look-listen)</p> <p>Have student proof read finished work when it is cold</p> <p>Allow for alternative method for completing assignment (oral presentation, taped report, visual presentation, graphs, maps,</p>

	<p>pictures etc. with reduced written requirements</p> <p>Allow for alternative method of (eg. Typewriter, computer, cursive or printing or a scribe</p>
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<p>12. difficulty in participating in class without being interruptive; difficulty working quietly</p>	<p>Seat student in close proximity to the teacher</p> <p>Reward appropriate behavior (catch student being good)</p> <p>Use study carrel if appropriate</p>
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Special services available for student

With hard work and proper help children with learning disabilities can learn more easily and successfully. For aged children (including preschoolers), special education and related services are important sources. Regular classroom teachers are experts at approaches for the vast majority of pupils. Special education teachers are experts at learning styles and alternatives to pupils who have a learning disability where the classroom teacher tends to form on learning at a classroom of pupils level, the special education teacher focuses on individual student school staff work with the child's parents to develop an individualized educational program or IEP. This document describes the child's unique needs. It also describes the special education services that will be provided at low cost to the child or family.

The members are the special education consultant or teacher, regular education teacher, parent, school nurse, social worker, school psychologist, and school administrator. It requires both the special education teacher and the regular classroom teacher to follow the IEP.

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- ñ T. Ç, úx „ Ç, Çjð „ Ç Äj: °öÄT ð¾ pÄÄjÄø, Ç: ÉÄø|, jüÇ
ÓÈÄjÄø pÖöÄðö - ñ T. ð¾Ä „Öððj „ Çö ðjðð|, jüÇ ÓÈÖö.

„üEÄø pÄÄj“ Ä

„üEÄø pÄÄj“ Ä ±ýÀÐ ÄÄÄí „ Çø | ÄüÜì | „jüÇ, | °ÄÄjì „ õ
| °öÄ, - ð „ Ä „ « øÄÐ Ç Ä ÇÜð¾Ç | „jüÇ ä „ ÇÄy ¾ÈÜì Ì ´Õ
ÄÄí °° ÉÄj „ « „ Ä „ ÈÐ. Þó¾ ÄÄí °° É „ ü ´Õ Äj ½Äý „ øÄ „ ü „ ¾ „ ¼Äj „
ÞÖì „ y ÈÉ.

„üEÄø pÄÄj“ Ä ÄüÈÄ °Ä - ñ „ Ä „ ü Äy ÄÖÄj Ü:

1. „üEÄø pÄÄj¾Ä÷ „ Üì Ì Ì „ øÄÄø °j¾ „ É ðjÄÐø, Óy §ÉüÈø
« „ ¼ÄÐø Ì „ ÈÄj „ - üÇÐ. ÞÐ, ´ÕÄ÷ „ üÜì | „jüÄ¾üì üÇ
¾È „ Äì Ì ø, - ñ „ ÄÄ\$Ä « Ä÷ „ üÜì | „jüÄ¾üì ø - üÇ §ÄÜÄj¼j „
ÞÖì „ ÈÐ.
2. „üEÄø pÄÄj¾Ä÷ „ Ç¾ø ÞÄøðì Ì ÄjÜÄð¾ ÄÇ÷î°Ç „j½øÄí „ ÈÐ.
3. ÞÐ Ýüç Äì „jÄ½ç „ Çjø ÄÖÄ¾ø „ Ä.
4. ÞÐ ÁÉ ÄÇ÷î°Ç Ì „ ÈÄÉjSÄj « øÄÐ ÁÉ ÇÄ Äj¾øÄÉjSÄj
züÄí Ä¾ø „ Ä.

Ä „ ÄÄ „ È:

„üEÄø pÄÄj“ Ä ±ýÀÐ ´Õ Ì Äó „ ¾, ´ýÜ « øÄÐ „ üì ÈöÄø¾ ÄÄ
§Ä „ Ä „ Çø ¾ÈöÄ¾ | °öÄ¾ø ä „ Ç |¾j¼÷ð „ ¼Ä ÇÄöÄø Ì „ È - Ì ø.

1. Äj °ö¾ø
2. ±ØÐ¾ø
3. §Äí¾ø
4. „ ÄÉö¾ø
5. „ ½ì „ Ä¾ø

- ÷òÀ ÷jÄð¾ø ÷¾çÇÀ ÷ Äj¾øð
- ÀÈòð ±´ ¼ Ì ´ È×
- Ì Æó´ ¾òÀÕÀð¾ø Àí °ù ÷jÁj´ Ä
- ã´ Çì ÷jî°ø ÁüÜõ ã´ Ç °ðÀó¾òÀð¾ |¾jüÜ §¿jö
- ÷÷òÀ ÷jÄð¾ø ÷jìÄ ¿îÍ ò¾ý´ Á
- Ì Æó´ ¾Àø´ ¾Äjõî ÀÇî´ °´ É ÷ ù
- «¾çÍ ÙÍ Ùòð ÁüÜõ ÷ ÄÉî°¾Èø §¿jö
- Ì Æó´ ¾Àø « Èì ÷ È « øÄð ¿ñ ¼ ¿jð¾Çj ÷ þÕì ò ¿î ÷jð ÷ÕÁò¾jì ÷ õ
- ÷üÀ ÷jÄð¾ø¾jÄ¾ø þÕòð °çí Áüì |°øÖø þÃð¾ µð¾ð¾ø¾´ ¼ ±. ÷j: |¾jòðù | ÷jÈ ÷øð´¾ Í üÈÀÈð¾ø

§¿jöì ÷jÄ½í ÷ù:

÷üÈÀø þÄÄj´ Áì Ì ÈòÀø¾ ÷jÄ½õ ±ð×õ þø´ Ä. ÄõÀ´ ÄŞÁ Òì ÇÄ ÷jÄ½Áj «´ Á¾Èð. Ì Æó´ ¾Äý ã´ ÇÄý «´ Áòð ÁüÜõ |°ÀøÄjî Çø ÄjÜÄjî ÷ ÷j½òÀî ÷ýÈÉ. |ÀÕòÄjÖø þð Ì Æó´¾ ÀÈòÀüì Óý§À - ÄòÀòÀ¾j « Èç» ÷ ÷ ÷òð ÷ýÈÉ÷.

°çí Äý ã´ ÇÄÇ÷î°Äø Äj¾øðì ÷jÈ ÷jÄ½í ÷ù:

÷÷òÀ ÷jÄð¾ø °çí Äý ã´ ÇÄÇ÷î° ±ò§Äjð §Äñ î ÄjÉjÖø Äj¾çí ÷òÄ¾Äjõ. « ð - ÄõÀ ÷jÄð¾ø ¿¾ó¾jø ÁÉÄÇ÷î° ÓüÈÖø Ì ýÈç ÷j½òÀî õ « øÄð °çí þÈóðÄçí õ.¾jÁ¾Äj ¿¾ó¾jø « ð ÷üÈÀø þÄÄj´ Á §ÄjýÈ ÀÇî´ °´ É ÷ ù ìì ÄÈÄì ìì õ.

°ÁÁÿ ã ¨ ÇÁÇ:í°Áí° É Á;¼¼ Ì ò ,jÁ½¼, ù:

« . ÁÁÁÍ Ì ,jÁ½¼í , ù:

,üÈÄø þÁÄ;¨ Áì Ì Ì Í òÁí ,Çø ÁÄòð;¼;¼÷ò þ¨ ½òÄ; , - ùÇÐ.
- ¾;Á½Ä; , - Õ Ì Æó¨ ¾ì Ì §, ðì ò ¾Èý |¾;¼÷Ä; , Ì ¨ È× þÕó¾;ø
« ó¾ì Ì ¨ È | ÄÜÈ;÷ì Ì ò |¾;¼÷ò¨ ¼Á¾; , - ùÇÐ.

¬ . ò¨ ,Áí° Ä, ÁÐ ÁüÜò §Á;¨ ¾ò;Ä;Õð, ù - Á§Á; , ò:

,÷òÄ; ,jÄð¾ø ¾;ö ±Í òÐì | ,jüÜò ÁÐ, ° ,jÁð ÁüÜò
§Á;¨ ¾ò;Ä;Õð, ù Ì Æó¨ ¾¨ Áò Ä;¼¼ Ì ò ±É - Á;òí° , ù |¾;¼Ä; ,ýÈÈ.
ÁÐ, ÁÇÕò °Á Áÿ ã ¨ Ç¨ Á |Áì Á; ,ò Ä;¼¼ , ÈÐ. þÐ 'ÁÐÄ;ø °Á ×ì Ì
ÁÕò ÁÁí°¨ È'(fetal alcoholic syndrome) ±ýÈ §;¨ Á - ÕÁ;ì Ì , ÈÐ.
þ¾ø Ä;¼¼ , òÄð¼ Ì Æó¨ ¾, ù ÀÈòð ±¨ ¼ Ì ¨ È× , - ¼ø ° Èò, ã ¨ Ç
|°Áø¾Èý Ì ¨ È× §Á;ýÈ Ì ¨ ÈÁí , Ç;ø Ä;¼¼ , òÁí ,ýÈÈ÷. | ,j¨ ,ý
§Á;ýÈ ò¨ , ÁÈÄð¾ø ±Í Ì , òÁí ò §Á;¨ ¾ò;Ä;Õð, ù ò ã ¨ Ç¨ Á
Ä;¼¼ ,ýÈÈ. ¿ÁÐ , ñ , ,jÐ òüÜò §¾;Äø ÁÕò |°ö¾, ù Ì Ì Á¾ÁÇ¼ Ì ò
¾Èý ã ¨ Çì Ì - ùÇÐ.

þ. , ÷òÄ; ,jÄð¾ø ÁüÜò Ì Æó¨ ¾ÁÈòÁÿ §Á;Ð - ùÇ ÁÁí°¨ È , ù:

,÷òÄ; ,jÄð¾ø ²üÁí ò - ¼ø§, jÇÚ, ù Ü¼ ,üÈÄø þÁÄ;¨ Áì Ì
,jÁ½Ä; ,jÄ; . ¾;Áÿ §;ö ±¾ø-òòí°í¾¼ Ì ¨ ÈÄ;ð¼;ø |¾;üÜ §;ö, ù
²üÁÈý, « Ð þ¾ü Ì ÁÈÁì Ì ò. |¾;òòü| ,jÈ ,øð¨ ¾í Ì üÈ ,j ½òÁí ¾ø
ÁüÜò °Á Áÿ ã ¨ Çì Ì þÄð¾ μð¼ò¨ ¾ò Ä;¼¼ Ì ò ±ó¾ì ,jÁ½¼Õø ,üÈÄø
þÁÄ;¨ Áì Ì ÁÈÁì Ì ò.

'cat'-'act', 'felt'-'left'

±ØðÐôÀċ' Ē:

'went'-'wet', 'sting'-'sing', 'chemistry'-'chemistory', 'Áĵ¼õ'-'Á¼õ'

2. ½ì ċ¼Äø þÄÄĵ' Á:(Dyscalculia)

½¼ð¼ø ¼Ē × ĵñ À¼Öõ, ½ì ċ¼Äø þÄÄĵ' Á ±É ôĀĪ õ. ½ì ċ¼Äø þÄÄĵ' Á, Åĵ¼ø þÄÄĵ' ÁÔ¼ý þ' ½ó¼ ĵ¼ôĀĪ ċÉĐ.þ¼Éĵ Åĵ¼ø ðÄð¼ Ē Ēó' ¼ ĵ ±ċ' ÁĀĵÉ ½ì ċ¼Äø ¼Ē ĵ¼ « ¼ċ ĪĀõ ±Ī ðÐĪ ĵĵ ĵĵÉĵ. þĀĵ, ±ñ ĵ, Ī ĒĀĪ ĵ ĀüŪõ ĒĒ' ċ ðĵóĐ ĵĵ Ū¼ÄÖõ » ĵĀ¼ø' ĀðÐĪ ĵĵ Ū¼ÄÖõ ĒĀõ ±üĀĪ õ.

±Ī ðÐĪ ĵĵĪ :

5+5 = 10, 5x5=25

- Ūð¼ø, ¼Ē¼Äø ĒĀõ
- 'šĀ Āĵ¼ċĀĵÉ Ī ĵĀĪ' ċ « ĒóĐ ĵĵ Ū¼ø Ī ĒôĀõ.±.ĵ: =,-, +, <, >
- ĵĀ « ð¼Ā' ½' Ā Āý ĀüŪĀ¼ø ĒĀõ
- Ī' Ēð¼ø, ¼Ē¼ø šĀĵÉ Āĵ' ¼ ċý ĵĵ Ū¼ø ðĵĀĵø þŌð¼ø
- ĀÉĪ ½ì ĵĵ ĵ¼ø ĒĀõ.
- ±ñ ċ ĀĵüĒ ±Øð¼ø
- Ēĵĵ¼ø Ā½ċĀĵð¼ø ĒĀõ
- °ĐĀĪ õ šĀĵÉ Āċ' ċĀĵĪ ċø ĒĀõ
- Āċ' ċĀĵĪ ċø ¼ý Ū' ¼Ā Ā¼ôĀð' ¼ Ūð¼ø ĵĵ Ū¼ø ĒĀõ

3. ±ØÐÁ¼Ø þÄÄj'' Á:(Dysgraphia)

±ØÐì ,'' Ç ÄÊÄ'' ÁôÀ¼Ø\$Äj,« øÄÐ Ì Ú,Ä þ¼ð¼Ø ±ØÐÄ¼Ø\$Äj
¬ úÇ ÄÄî'' É ±ØÐÁ¼Ø þÄÄj'' Á ±ÉôÄî õ.

|ÄjÐÄj, þùÄ,ÄjÉ Áj½Ä÷, Ûì Ì '' ,|ÄØðÐ \$Äj°Äj, þÖì Ì õ.
|°jü, '' Ç Ó'' ÈôÄî ò¼Ø ±ØÐÄ¼Ø °ÄÄõ, ±ØðÐì ,ú ÁüÜõ ±ñ ,'' Ç
ÓýÄý ÄjüÈ ±ØÐ¼Ø,Äj÷ð'' ¼, '' Ç ÄjüÈ ±ØÐ¼Ø,°jöÄjÉ '' ,|ÄØðÐ
¬ ,Ä'' Ä þ¼Ø « ¼í Ì õ.

±, j:

- |Äý°Ø ÁüÜõ \$ÄÉj'' Ä Ó'' ÈÄj, ÄÈì ,jÄø ±ØÐ¼Ø
- ðjÄj¼'' ,|ÄØðÐ
- ±ØÐÄÐ,Ä'' ÄÄÐ \$ÄjýÈ \$Ä'' Ä, '' Ç ¼Ä÷ð¼Ø
- Äjì ,Äð'' ¼ ÓØ'' ÄÄj, ÓÈì ,jÄø ÄÄ¼Ø « øÄÐ Ì '' ÈÄjÉ
|°jü, '' Ç ¬ Ä\$Äj,ò¼Ø
- ±ØðÐ , ÄÊÄõ,ÁüÜõ þÄì ,½ð¼Ø Ä'' Ä,ú.

4. |°Äø¼Èý þÄÄj'' Á:(Dyspraxia)

'' , ,j, '' Ç ¬ Ä\$Äj,òÐ |°öÖõ \$Ä'' Ä,Çø °ÄÄõ ðüÄî ÄÐ
|°Äø¼Èý þÄÄj'' Á ±ÉôÄî õ.

ã'' ÇÄý |°ö¼, '' Ç |ÄÇÄÄ Ä¼Ø °ÄÄõ ,j½ôÄî Ä¼jø þÐ
|ÄÇÄÄî þÄÄj'' Á ±É×õ ÜÈôÄî ,ÈÐ.|°Äø¼Èý þÄÄj'' ÄÄø
,ú,ñ ¼ÄüÈø Ì '' ÈÄjÄ ,j½ôÄî õ.

« Èĭ Èĭ, ū

« Èĭ Èĭ, ū: 0-4 ĀĀĐ

- ÄüÈ ĩ Æó'' ¼, '' Çĭ ĩ ĩ ðĒÖö ¼ĭ Ā¼Āĭ, ô ŠĀ° - ĀōĀō¼ø
- - ĩ°ĭōōĭ ĩ '' ÈĀĭĤ ĩ, ū
- ĩ°ĭø¼Ēý ĀÇ:ĩ°ĭ ĩ '' ÈĀĭĤ, °ĭĀĭÉ ĩ°ĭü, '' Çĭ ĩ, ñ ¼Ē¼Āø - ūÇ ĩ '' ÈĀĭĤ
- °Ā'' °ĭ ĩ°ĭü, Çø ĩ '' ÈĀĭĤ
- ±ñ ĩ, ū, ±ØðĐĭ ĩ, ū, ĀĭĀ ĭĭ ð, ū, ĭĒĒ ĩ, ū ÄüŪō ĀĒĀĭ, '' Çĭ ĩ, üĒĀø - ūü ĩ '' ÈĀĭĤ Ā¼üĒ - ½÷x
- Ññ ¼ĒĒ ĩ, '' Ç ĀÇ:ðĐĭ ĩ, ĩ, ūÇĀø - ūÇ Āó¼ ĭĭ Ā

« Èĭ Èĭ, ū: 5-9 ĀĀĐ:

- ±ØðĐ ÄüŪō ĩĀĭ, Ūĭĭ ĩ - ūÇ ĩ¼ĭ¼÷'' Ā « È¼Āø - ūÇ ¼ĭĀ¼ō « ĒōĀ'' ¼ Āĭ÷ð'' ¼, Çø - ūÇ ĩ ÆōĀō(run, eat, want) ĩ¼ĭ¼÷:Āĭ°ōĀĭý ŠĀĭĐ ²üĀĭ ĩ, ūýĒ ¼ĀŪ, ū Āĭ÷'' ¼, '' Ç, ±ØðĐĭ ĩ, '' Ç Āĭ°ōĀ¼ø Āĭĭ Ē, ū (b-d, m-w, felt-left, house-home) ±ñ ĩ¼ĭ¼÷, ū, ĩ¼ĭ¼ĭ ĩ Èĭ, Çø - ūÇ ĩ ÆōĀō(-, =, +, x, <, >) ĀĒōĀĭ¼ō ĩ°ōĀ¼ø Āōĭ ŠĀ ĭōĀĭ'' ĩ, ð¼Ā ¼ĒĒ ĩ, '' Ç ĀÇ:ōĀ¼ø - ūÇ Āó¼ōŠĀĭĭ ĩ ĩĀý°ĭ Ā °ĭĀĭÉ Ó'' ÈĀø ĀĒēð ±Ø¼ĭ'' Ā ŠĭĀō'' ¼, ĩ¼ĭ¼ĭ ĩ¼Āø - ūÇ °ĀĀō

Àj(°i¼À Ì ò Ó´ È, ù:

ùÈÄØ - ùÇÌ´´ ÈÀjT´´ Çì, ñ¼È¼ÄØ pÕ Á´´, ÀjÉ °iyÚ, ù
®T ÌðT ùÇÉ.

1. Àj¼À, òÀð¼ÀjY ÁqVjÉ ÁVÁr, ù:

Ì Èó´´ ¼ÁY ÀÈòð, ÁÇ:î°ç, Ì T òÀ ÁVÁr, ù, ùøÁq YÈø,
ÁÕðÐÁì Ì Èòð, ù ÁüÜò °ã, - ½÷x p´´ °x - ù, VÁ ÁVÁr,´´ Ç Áç, Ì
°jVj, ò | ÁÜÁÐ Óì, VÁjÉ ´yÈj Ì ò. pÐ SÁjyÈ ÁVÁr,´´ ÇÕð, ùÈÄØ
pÁÁj´´ Á ÀüÈVÁ ÁVÁr,´´ ÇÕð Àj¼À, òÀð¼Àj¼Óò « ÁjY
Ì T òÀ¼j¼¼Óò S, ðT |¼Ççx ÁT ò¼À |, jùÇ SÁñ T ò.

2. Ì Èó´´ ¼ÁY Á¼VÁr :

Ì Èó´´ ¼ÁY |°Áø¼Èý °j÷ó¼ ÁVÁr, ù, « Á÷, Ç¼õ pÕóÐ
SçÁÈÁj, SÁj « øÄÐ Á´´ ÈÓ, Áj, SÁj Àj÷òÐ |¼VóÐ |, jùÇ SÁñ T ò.
pó¼ì Ì Èó´´ ¼, |°Áø¼Èý, |ÁjÈç, - ½÷î°ç, « Èçx ÁüÜò, ùøÁç
°j÷ó¼Á´´, ù, ÇØ Àj(°i¼À, ùòT, VÈÐ. ÁÉ çÄò Àj(°i¼´´ ÉÁjÉÐ,
« Èçxò¼Èý, ÀÈì, ÁÈì, Ó´´ È, ù ÁüÜò °ã, - ½÷xò¼Èý - ù, VÁÁü´´ È
« ÈVÁ, SÁü|, jùÇòÁT, VÈÐ.

ù, jT ò «´´ ÉÁÕò Áj ½´´ Á Àj(°i¼À, ù SÁñ T ò:

- ÁÕðÐÁ ÁÉ ÁVÁø ç0½÷.
- ÀùÇçÁÉ ÁVÁø ç0½÷.
- ÀÈòð ÁÉ ÁVÁø ç0½÷.
- Ì Èó´´ ¼ ÁÇ:î°ç ÁÉ ÁVÁø ç0½÷.
- çÄòÁVÁø ÁÉ ÁVÁø ç0½÷.

- 'Ö ŞÄ'' Ä'' Ä | °öÄî ÜÊÄ ÄÊ, Çj, °ÈÈ °È¼j, |, jî ò¼ø,
- ±î Ðì, jî ðî, ü ÁüÚò Ì ÈòÀò¼ ÄÊ, Ç |, jî ò¼Ä;

2. ÄÊ: |, jî Ì Ì ò |, ÈÓ'' È, Ç Äÿ ÄüÚÄ¼ø °ÄÄö

Äj ½Ä÷, Çÿ, ÄÊ ò'' ¼, ÿ Ì | ÄüÚì |, jî ñ ¼ ÄÈ Ì |, ÈÓ'' È, Ç |, jî ò¼ø

- |, ÈÓ'' È, Ç ±Ø òÐ ÄüÈò | °jø ÄÊÄò¼ø |, jî ò¼ø.
- 'Ö ŞÄÄ¼ø 'Ö |, ÈÓ'' È'' Ä Äðî ò |, jî ò¼ø.
- ±øÄj Äj ½Ä÷, Ü Ì Ì ò « ÈÄò¼ Äÿ ò, üÊÄø ÞÄÄj¼ Äj ½Ä÷, Ü Ì Ì Äðî ò ¼ÉÄj, ÜÖ¼ø.
- Äj ½Ä'' È ¼ÖòÄt ÜÈî | °jøÄî, Ş, ð¼ø

3. |, jî ò¼ ŞÄ'' Ä'' Ä ÓÊòÄ¼ø °ÄÄö

±, jî Äðî ò Äj¼í, Ç ÓÊò¼ø

- ÓÊì, ŞÄñ ÊÄ ±øÄj, ŞÄ'' Ä, ÇÖò Äj, °ò Äî ò¼ò ¼Ö¼ø,
- | °öÄ ÓÊó¼ « ÇÄü Ì, ŞÄ'' Ä, Çì |, jî ò¼ø
- « Èì, Ê, ŞÄ'' Ä'' Ä ÓÊì, ÿ ÈjÄj Þø'' ÄÄj ±É, Ş°¼ò¼ø.

4. ÈÄjüÈ'' Ä - ÄjÄj, òÐ | °öÖö, ŞÄ'' Ä, Çø °ÄÄö

- Äj÷ò¼ø, | °jøÖ¼ø, ±ØÐ¼ø, | °ö¼ø, ŞÄjÿÈ « ÿ'' É òÐ Ó'' ÈÄÖö | °ö¼ø, Ç ÜÜ¼ø
- ÈÄjüÈ'' Ä « ¼Ç, jî Ì ò Ó'' È, Ç, üÚì |, jî ò¼ø
±, jî: Ì Üì |, jî òÐ Ó'' È, ÄjòÄÊ, üÈø, ¼ÖòÄò ¼ÖòÄ | °jøÄî |, jî ò¼ø

5. §3/4 ÷ × ± Ø Æ Å 3/4 Ø ° Å Å ð

- Å ì ò Å ð È §3/4 ÷ Å 3/4 Ø « 3/4 Ç, § Å ð |, § j Î ò Æ Å Å ù Ú Å 3/4 Ø
- §3/4 ÷ × ± Ø Æ ð Ó ð È Á ù Ú ð Å ä, í, ð Ç, ü Ú ì |, § j Î ò 3/4 Ø
- Å j ö Å Æ ð §3/4 ÷ Å 3/4 È « 3/4 Ç, Å j, - À § Å j, ð 3/4 Ø
- Å Æ È j ò 3/4 j ù, ð Ç | 3/4 Ç Å j È Ó ð È Å 3/4 Ø |, § j Î ò 3/4 Ø,
- Å j 1/2 Å Ú ì ì Å 3/4 Å j È Ó ð È Å 3/4 Ø Å Æ È j ò 3/4 j ù, ð Ç |, § j Î ò 3/4 Ø
- §, j Î § Å j ð 1/4 Å 3/4 ò 3/4 j ù, ð Ç |, § j Î ò 3/4 Ø
- Å È ì ì ò Å Æ ì, ð 3/4 Å j ù È Ç « ð Å 3/4 Ø

6. ð ð ð, ð Ç ò j ò Æ |, § j ù Å 3/4 Ø ° Å Å ð

- ð ð ð, ð ù ± ý È - ñ ð ò Æ, Ç ý È È ± ý Å ð 3/4 Å j 1/2 Å ð, Ú ì ì ± Î ò Æ ì Ú Ú 3/4 Ø
- ð ð ð, ð Ç Å È ì, ò Å È ì, ò Å Î ò Æ 3/4 Ø.

7. ± Ø ò Æ Å È Å 3/4 Ø - ù Ç Å ù ð È ò j ò Æ |, § j ù Å 3/4 Ø ° Å Å ð

±, § j Å 3/4 Å 3/4 Ø - ù Ç Ó ì, Å ì, Ò Æ ì, ð Ç ò ò j ò Æ |, § j ù Å 3/4 Ø ° Å Å ð

- Ó ì, Å ì, Ò Æ ì, ð Ç « È ì §, j È ð Î « ø Ä Æ « ð 1/4 ò ì ì È Å ì ù |, § j Î ò 3/4 Ø
- Å j ö Å Æ Å j, Ó ì, Å ì, Ò ò Æ ì, ð Ç ± Î ò Æ ì Ú Ò 3/4 Ø
- Ç ñ Å ð, Ç 3/4 ò - ù Ç Å j 1/4 ò ò 3/4, í, Ç Ç ý Ç, ð Å Å È ì, ì |, § j Î ò 3/4 Ø

8. § Å j ° Å j È ð, | Å Ø ò Æ

- Å j 1/2 Å ð È « Å ý § Å j ì, ð ± Ø 3/4 « Ú Å 3/4 ò 3/4 Ø.
- , 1/2 ò | Å j È, Ç 3/4 ð 1/4 Î Í Þ Å 3/4 Å ð § Å j ý È Å ð È - À § Å j, ð Æ ± Ø ò Æ ò Å 3/4 È, ð Ç, ð Ç ò 3/4 Ò ò 3/4 ò |, § j ù Ç Å j ð.

- Á_j ½ ÄÉÿ §¼÷×ì Ì Á_jüÚ Ó´ È_s´ Ç´ ÀŞÄ_j ò¼ø ±. _s | ´ ÄÖÄ¼×
pÄó¼Äð´ ¼´ ÀŞÄ_j ò¼ø, Ä_jöÄÆð!¼÷× | °ö¼ø.
- Á_j ½ Ä´ É´ ´ _s | ÄØð¼ü_s _s « Ä´ É´ ¼ñ Èì _s Ü¼jÐ. ±üÄ¼Ä_jÉ´
´ _s | ÄØð¼_j pÖó¼jÖö « ´ ¼´ ´ òðì | _s jñ Î´ °jÄ_j Á_jüÈ´ ¼Ä
ŞÄñ Î ö.
- ±ØÐÄ¼üÌ ÄüÚ Ó´ È_s´ Ç´ _süÚì | _s jÎ´ ò¼ø ±. _s | _s ½ð | Ä_jÈÇ´
° ÄŞÄ_j ò¼ø
- « ÄöÄ_jÜ¼ý ÜÊÄ ±ØÐ_s´ Ä´ ÀŞÄ_jÄ_sì | _s jÎ´ ò¼ø .
- °jÄ_j÷ì Ì ö ÀðÊÄø ¼Ä_jjðÐ_s | _s jÎ´ ò¼ø

±. _s j:

ŞÄÉ_j´ Ä´ °jÄ_j ö ÄÊð¼ø, ÄÉ´ ¼ø | °jØÄÄ_s | _s jñ §¼ ±ØÐ¼ø, ±ØðÐ
ÄÊÄð´ ¼´ ÓØ´ ÄÄ_j ÓÊð¼ø

9.¼ý´ Éð¼jý _s ÄÉðÐì | _s jüÜ¼Äø °ÄÄö

- Ì ÈöÄö¼´ °Ä´ Ó´ È_s´ Ç´ _süÚì | _s jÎ´ ò¼ø.
- ¿Üð¼¿¼jÉÄ_j ŞÄ´ Ä_s´ Ç´ ÓÊì _s _süÚì | _s jÎ´ ò¼ø.

10.±ØðÐ ŞÄÄ´ Ä´ ÓÊì _s « ¼ø_s Ş¿Äö ±Î´ òÐì | _s jüÜ¼ø (10 ¿Ä¼¼
ŞÄ´ Äì Ì 2 Ä½çŞ¿Äö ±Î´ òÐì | _s jüÜ¼ø)

- Á_jüÚ Ó´ È_s´ Ç´ ÀŞÄ_j ò¼ø, ±. _s j: Ä_jöÄÆÄÊð¼ø Ä¼ö Ä´ Ä¼ø.
- _s ½ð | Ä_jÈÇ´ ¼ððíÍ pÄ.ó¼Äð ŞÄ_jýÊÄ´ È´ ÀŞÄ_j òÐ ±ØðÐö
Ä´ Ä_s´ Ç´ _s´ Ç´ ò¼øÖð¼Ä_s | _s jüÇÄ_jö.

- | Äü\$Èj÷
- ÄüÇç' Â §°÷ó¼ ' ÖÅ÷
- Ájñ Å'' É Á¼ôÀÏ | °öÀÅ÷

üÈÄø pÄÄj'' ÄÄý °çç'' ° Óý\$ÉüÈ çç'' Ä:

p¼'' É Óø'' ÄÄj, ì ½ôÀÏ ò¼ ÓÈÄjÄø¼jÖõ Ó'' ÈÄjÉ ÄüÇç
 , ÄÉòò ÄüÜõ ÄüÈ °çç'' °Äý ã Äõ ÄÄî'' É ,'' ÇÔõ p¼÷ÄjÏ ,'' ÇÔõ
 ¾Äç:ì , Äjõ. ±ÉçÜõ p¼ý ¾jì , õ ç'' ¼Ó'' È ÄjüÄø °È¼Ç× ,j ½ôÀ¼¾jý
 | °öçÈÐ.

PART -I DEMOGRAPHICAL VARIABLES

NOTE: Please read the following and put tick mark for the correct answer in the given boxes.

1. Age (in years)
 - a) 25-30
 - b) 31-40
 - c) 41-50
 - d) >50

2. Sex
 - a) Male
 - b) Female

3. Marital status
 - a) Married
 - b) Single
 - c) Divorced
 - d) Widow/widower

4. No. of years of experience in teaching
 - a. <5
 - b. 6-10
 - c. 11-20
 - d. >21

5. Religion

a. Hindu

b. Muslim

c. Christian

d. Others.

PART II
KNOWLEDGE QUESTIONNAIRE

- 1) What is learning disability ?
- a. Subnormal intelligence
 - b. Memory disturbance
 - c. Inability to read & write.
 - d. Disorder of attention and concentration
- 2) Which of the following is true about learning disability?
- a. Caused due to environmental disadvantage
 - b. Difficulties in academic achievement
 - c. Caused by mental retardation
 - d. Caused by emotional disturbance
- 3) What are the risk factors of learning disability?
- a. History of fine and gross motor delays and low birth weight
 - b. Family history of brain tumor
 - c. Family history of conduct disorders and seizures
 - d. Family history of diabetes mellitus
- 4) What are the causes of learning disability?
- a. Disruption in brain development during pregnancy
 - b. Learnt from siblings
 - c. Previous neurological problems of mother and the father
 - d. Conduct disorder

5) What is dyslexia ?

- a. Language problem
- b. Trouble in understanding written words
- c. Stuttering
- d. Poor handwriting

6) What is dysgraphia ?

- a. Problem in spelling written expression and handwriting
- b. Problem in writing language other than mother tongue
- c. Problem in motor function and understanding non verbal cues
- d. Problem in speech

7) What is dyspraxia?

- a. Difficulty in understanding nonverbal cues
- b. Difficulty in motor activities
- c. Difficulty in drawing
- d. Difficulty in seeing and hearing

8) What is dyscalculia?

- a. Difficulty in grasping maths concepts
- b. Difficulty in concentration
- c. Difficulty in memorization
- d. Difficulty in drawing

9) Which one of the following is not a feature of dysgraphia ?

- a. Avoiding writing and drawing tasks
- b. Tight awkward pencil grip
- c. Saying words out loud while writing
- d. Not using good pencil and pen

10) Pick up correct example of dyslexia.

- a. Read 'felt' as left
- b. Writes 'simon' as 'siamion'
- c. Misinterprets the gesture and expression
- d. Difficulty in buttoning shirts

11) What is the example of dysgraphia ?

- a. Omits letter while writing 'cat' for 'cart'
- b. Put words in wrong order while reading
- c. Misinterpret the symbol + and x
- d. Abnormal waving 'bye'

12) Which one of the following is not a feature of dyscalculia?

- a. Confusing signs +, -, and *
- b. Difficulty in telling time
- c. Difficulty in mental arithmetic
- d. Good at keeping scores while playing.

13) What is the most common type of learning disability?

- a. Dyslexia
- b. Dysgraphia
- c. Dyscalculia
- d. Dyspraxia

14. What are the early signs of learning disabilities?

- a. Dull activities
- b. Anxiety and fear of going to school
- c. Conduct problems
- d. Memory disturbances and hyperactive

15. How to diagnose learning disabilities?

- a. Personality test
- b. Aptitude test and class room test
- c. Attitude test and aptitude test
- d. Speech, language and intellectual test

16. When the learning disability can be identified?

- a. In adult age
- b. When the child finishes primary school
- c. When the child starts to talk
- d. When the child reaches school

s

17. What are the things should be excluded when diagnosing learning disability?

- a. Low IQ, vision and hearing problems
- b. Low birth weight
- c. Alcohol and tobacco use in pregnancy
- d. Problems during delivery

18 . What is the management for learning disability ?

- a. Providing care, love and security alone
- b. Educational and drug treatment
- c. Admitting in psychiatric hospital for short period
- d. Stop schooling temporarily

19. What is the use of medications?

- a. Will cure the disorder completely
- b. Increases attention and concentration
- c. May produce same severe side effect
- d. Will temporarily relieve symptom

20. Who are the members involved in treating the child with learning disability?

- a. Teacher alone
- b. Teacher and parents
- c. Teacher and psychologists
- d. Multidisciplinary approach

21. What are the complications of learning disability?

- a. Anxiety and depression
- b. Schizophrenia
- c. Conduct disorder and ADHD
- d. Seizures

22. How the parent should treat the child?

- a. Praise the child while doing well and finding out the ways of child learns well
- b. Being very strict and giving
- c. Changing the school
- d. Providing the child some relaxation techniques

23. What is the role of teacher in treating the child?

- a. Being strict
- b. Encouraging in extracurricular activities
- c. Careful monitoring and addressing the educational needs
- d. Giving punishment

24. What the teacher should do when the child is having reading problem?

- a. Tell the student to observe the student who read well
- b. Giving instruction clearly and repeatedly
- c. Giving punishment
- d. Giving writing instead of reading

25. What the teacher should not do when the child fails in the tests?

- a. Use clear, readable test forms.
- b. Allow ample space for student response.
- c. Giving more time to take test
- d. Giving fewer questions to write.

26. What can be done when the child is having writing difficulties?

- a. Help the student to create a checklist for writing work
- b. Giving more writing work
- c. Encourage for copying the content as much
- d. Advice to use good quality of pen and paper

27. What to do to increase the memory of child with of learning disability?

- a. Combine seeing , saying and teaching memory techniques
- b. Giving imposition
- c. Keeping frequent tests
- d. Advice for some nutritious diet and to spend more time for studying

28. How can the teacher manage a hyperactive child?

- a. Restrict the activities of child
- b. Teaching in closed place
- c. Seat the student in close proximity
- d. Giving frequent punishment

29. What the teacher should not do when he is not completing the assignment?

- a. List out all steps to complete each assignment
- b. Educate the assignment into manageable sections with due dates
- c. Make frequent checks for assignment completion
- d. Giving less amount of work than other students

30. What is the prognosis of learning disabilities?

- a. Get completely treated
- b. They will live in same condition
- c. Some impact will be on their lives but the complications can be reduced
- d. Their life conditions will get worsened.

6. ÊŠ ŸĀĭ· ÀĀĭ ±ýËĭø ±ýÉ?

« . ±ØÐ¾ø ÁüÚõ " ŸĀøð¾ø - úÇ °ĀĀõ

→ .¾ĭö | ÁĭÆĉ « øÄ¾ ÀĒ | ÁĭÆĉ" Â ±ØÐ¾ø °ĀĀõ

p. | °Āø¾Ēĭ ŸÇø, " °" Ÿø òĭóÐ | ŸĭúĀ¾ø - úÇ °ĀĀõ

®. ŠĀĪ Ā¾ø - úÇ °ĀĀõ



7. ÊŠøĀĭĭ °Āĭ ±ýËĭø ±ýÉ?

« . " °" Ÿø òĭóÐ | ŸĭúĀ¾ø - úÇ °ĀĀõ

→ . | °Āø¾Ēĭ ŸÇø - úÇ °ĀĀõ

p. À¾ø Ā" Ā¾Āø - úÇ °ĀĀõ

®. Āĭ÷òÀ¾ø, Šø ðÀ¾ø - úÇ °ĀĀĪ Ÿĭú



8. ÊŠ Ÿĭøĭ ĀĀĭ ±ýËĭø ±ýÉ?

« . ĀĭöøĀĭĪ Ÿĭú ÁüÚõ ±ñ ŸÇ - ðŸĀøð¾Āø - úÇ °ĀĀõ

→ . Ü÷øÐ ŸĀÉø¾Āø - úÇ °ĀĀõ

p. ĀÉøĀĭ¾ø | °øĀ¾ø - úÇ °ĀĀõ

®. À¾ø Ā" Ā¾Āø - úÇ °ĀĀõ



9. ÊŠ ŸĀĭ· ÀĀĭĀø ±Ð Ÿĭ½øĀĭÐ?

« . ±ØÐ¾ø, Ā" Ā¾ø ŠĀĭýË ŠĀ" ĀŸŸø ò¾Āøð¾ø

→ . | Àý" Ā pŪĭ ŸĀĭø ÀĒèÐ ±ØÐ¾ø

p. ĀĒĭĭ õ ŠĀĭÐ °ø¾ø ŠĀĭðĪ ĀĒø¾ø

®. ŸøÄ ŠĀĒĭ, | Àý" Ā - ĀŠĀĭŸĭúĀø pŌø¾ø



10. ĀýĀŌĀÉĀüÚú ÊŠ | Āĭ °Āĭĭĭ °ĭĀĭÉ - ¾ĭĀ½ø ±Ð?

« . "felt" ³ "left" ±É ø ĀĒø¾ø

→ . "simon" ³ "siamion" ±É ±ØÐ¾ø

p. " °" Ÿø òĭóÐ | ŸĭúÇĭ¾Ōøð¾ø

®. °ð" ¼ĭĭ Āð¾ý ŠĀĭĪ ¾Āø °ĀĀõ



16. ¿Qué es el propósito de la investigación de campo?

a. Recoger información

b. Resolver problemas

c. Generar hipótesis

d. Analizar datos



17. ¿Qué es el propósito de la investigación de laboratorio?

a. Recoger información

b. Resolver problemas

c. Generar hipótesis

d. Analizar datos



18. ¿Qué es el propósito de la investigación de gabinete?

a. Recoger información

b. Resolver problemas

c. Generar hipótesis

d. Analizar datos



19. ¿Qué es el propósito de la investigación de campo?

a. Recoger información

b. Resolver problemas

c. Generar hipótesis

d. Analizar datos



20. ¿Qué es el propósito de la investigación de laboratorio?

a. Recoger información

b. Resolver problemas

c. Generar hipótesis

d. Analizar datos



21. ¿üÈÄø þÄÄj ÿ ÄÄjø ÄÖö ÄÄî°° É ±Ð?
 « . ÄÉì ¿Ä ÿ Ä ÄüÜö ÄÉ « Øð¾ö
 ¬ . ÄÉî°° ¾×
 þ. ¿ýÉ¼ð°° ¾î Ì ÿ ÈÄjî , ¿ÄÉì Ì ÿ È× ÄüÜö ÐÚÐÚ|ÄÉ þÖð¾ø
 ®. ÄÄöð
22. |ÄüSËj÷¿ ü ±üÄjÜ Ì Äó°° ¾¿ ÿ Çö SÄ½SÄñ î ö?
 « . Ì Äó°° ¾Ä Ä ¿ü|°ÄÖ¿ Ü Ì ¿¿ « Ä÷¿ Çö ÄjÄjð¼×ö, °Èö¾
 Ó ÿ ÈÄø ¿ü Ì ö ÄÄ¿ ÿ ÇÖö ÿ ½÷ð¾ SÄñ î ö
 ¬ . ÄÏ ó¾ ¿ñ Èöð¼ý þÖð¾ø ÄüÜö ÄÈöÄø « ¾¿ S¿Äö |°Öð¾ø
 þ. ÄüÇ¿ Ä ÄjüÜ¾ø
 ®. °Ä µö× ±î Ì Ì ö Ó ÿ È ¿ |°jøÄö¾Ö¾ø
23. Ì Äó°° ¾Ä Ä ¿¼ðÐÄ¾ø ¬ °¿Ä÷¿ Çý Äí ¿Çöð ±ýÉ?
 « . ÄÏ ó¾ ¿ñ Èöð¼ý ¿¼óÐ|¿jüÇø
 ¬ . ¿ ÿ Äö¾È°° Ä ¿ Ç° Ì Äö¾ø
 þ. Ü÷óÐ ¿ÄÉöÐ ¿üÈÖì ¿jÉ S¾° Ä ¿ Ç ±î ðÐ ÿ Äö¾ø
 ®. ¾ñ Èö¾ø
24. Äj°ö¾Äø Ì ÿ ÈÄjî ÿ üÇ Ì Äó°° ¾î Ì µ÷ ¬ °¿Ä÷¿ |°öÄ Ì Ü¼¾Ð ±ýÉ?
 « . ¿ýÈj¿ Äj°¿ Ì ö Äj½Ä° Ä ¿ ÄÉ¿ Ì ÄjÜ « È×Üð¾ø
 ¬ . |¾ÇÄj¿ ×ö, Äñ î ö Äñ î ö « È×Üð¾SÄñ î ö
 þ. ÄüÈÄ÷ Óý Äj°öÄ°° ¾¾Ä¿ì ¿ SÄñ î ö
 ®. Äj°öÄ¾ü Ì Ä¾Äj¿ ±Ø¾ |°jøÄ SÄñ î ö
25. S¾÷× ¿Çø S¾jü Ì ö Äj½Ä÷¿ Ü Ì µ÷ ¬ °¿Ä÷¿ |°öÄ Ì Ü¼¾Ð ±ýÉ?
 « . Äñ î ö Äñ î ö ±Ø¾ |°jøÖ¾ø
 ¬ . Ä¿ ¼ ¿ Ç ±Ø¾ S¾° ÄÄjÉ þ¼ð°° ¾ ±î ðÐ Ì |¿jüÇ « ÜÄ¾¿ ¿ SÄñ î ö
 þ. S¾÷× ±Ø¾ « ¾¿ S¿Äö ±î ðÐ Ì |¿jüÇ |°jøÖ¾ø
 ®. Ì ÿ ÈÄjÉ S¿üÄ¿ ÿ Çì |¿jî ð¾ø

ANSWER KEY

PART II

KNOWLEDGE SCORING ON LEARNING DISABILITIES

Q.NO	A	B	C	D
1.	0	0	1	0
2.	0	1	0	0
3.	1	0	0	0
4.	1	0	0	0
5.	0	1	0	0
6.	1	0	0	0
7.	0	1	0	0
8.	1	0	0	0
9.	0	0	0	1
10.	1	0	0	0
11.	1	0	0	0
12.	0	0	0	1
13.	1	0	0	0
14.	0	0	0	1
15.	0	0	0	1
16.	0	0	0	1
17.	1	0	0	0
18.	0	1	0	0
19.	0	1	0	0
20.	0	0	0	1
21.	1	0	0	0
22.	1	0	0	0
23.	0	0	1	0
24.	0	1	0	0
25.	0	0	0	1
26.	1	0	0	0
27.	1	0	0	0
28.	0	0	1	0
29.	0	0	0	1
30.	0	0	1	0

PART-III

PRACTICE SCORING ON LEARNING DISABILITIES

Q.NO	ALWAYS	RARE	NEVER
1	3	2	1
2	3	2	1
3	3	2	1
4	3	2	1
5	3	2	1
6	3	2	1
7	3	2	1
8	3	2	1
9	3	2	1
10	3	2	1
11	3	2	1
12	3	2	1
13	3	2	1
14	3	2	1
15	3	2	1
16	3	2	1