"EFFECTIVENESS OF COMPETENCY BASED TEACHER EDUCATION (CBTE) TRAINING MODULE ON KNOWLEDGE, ATTITUDE AND PRACTICE (KAP) OF SCHOOL TEACHERS REGARDING LEARNING DISABILITIES IN CHILDREN"

Thesis Submitted To

SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION AND RESEARCH,

(A Deemed to be University) TAMAKA, KOLAR, KARNATAKA

For the requirement of Degree

DOCTOR OF PHILOSOPHY (Ph.D.) [INTER-DISCIPLINARY: NURSING]

Under

Faculty of Allied Health and Basic Sciences.

By

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DECLARATION BY THE CANDIDATE

This is to certify that the thesis entitled **"A Study to Evaluate the Effectiveness of Competency Based Teacher Education (CBTE) Training Module on Knowledge, Attitude and Practices (KAP) of School Teachers regarding Learning Disabilities in Children in selected schools at Kolar district, Karnataka"** is a bonafide and genuine research work carried out by me in fulfilment of the requirement for the **Doctor of Philosophy in the subject of Inter-disciplinary Nursing** under the guidance of Dr. Zeanath Cariena.J, Professor & HOD, Dept. of Medical Surgical Nursing, Sri Devaraj Urs College of Nursing, CNO (Add. Charge) RLJH&RC, Kolar, Karnataka and to the best of my knowledge no part of this thesis has formed the basis for the award of any degree, diploma or fellowship previously elsewhere.

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Mr. R. RAJESH

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LIST OF ABBREVIATIONS

NJCLD	National Joint Committee of Learning Disabilities
IDEA	Individual With Disabilities Education Act
LD	Learning Disabilities
SLD	Specific Learning Disabilities.
ADHD	Attention Deficit Hyperactivity Disorder
GSLD	Gifted Students with Learning Disabilities
SAS	Self-Awareness Scale
ITP	Instructional Training Package
CBTE	Competency Based Teacher Education
KAP	Knowledge, Attitude, Practice
CIPP	Context, Input, Process and Product
ORI	Opinion Relative to Integration Scale
ATDP	Attitude Towards Disabled Person
ICD	International Statistical Classification of Diseases
DSM-5	Diagnostic Statistical Manual, 5^{th} Revision
APD	Auditory Processing Disorder
CBTE	Competency Based Teacher Education
KAP	Knowledge, Attitude, Practice
TAIS	Teachers Attitude Towards Inclusive Education
RPWD	Right Of Person with Disabilities Act
ASD	Autism Spectrum Disorder
LPD	Language Processing Disorder
NVLD	Nonverbal Learning Disabilities
NEP	National Education Policy
IEP	Individualised Education Plan
SEN	Special Educational Needs
CIPP	Context, Input, Process and Product
MCQ	Multiple Choice Questions
DVI	Difficulty Value Index

SPSS	Statistical Package for Social Sciences
ANOVA	Analysis Of Variance
RMANOVA	Repeated Measures of Analysis of Variance
ANOCOVA	Analysis of Co Variance
CDC	Centers For Disease Control and Prevention
HRSA	Health Resources and Services Administration
NIMHANS	National Institute of Mental Health and Neurosciences
GLAD	Grade Level Assessment Device
STROBE	Strengthening The Reporting of Observational Studies in Epidemiology
MEDLINE	Medical Literature Analysis and Retrieval System Online
CINHAL	Cumulated Index to Nursing and Allied Health Literature
ERIC	Education Resources Information Center
LCD	Liquid-Crystal Display
OR	Odds Ratio
SS	Statistically Significant
NS	Not Significant
CI	Confidence Interval
SD	Standard Deviation
PPT	Power Point Presentation
DV	Dependent Variable
CD	Compact Disc
CEC	Central Ethics Committee
ICF	Informed Consent Form

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ABSTRACT

INTRODUCTION:

Inclusive education is a new approach towards a system of educating the children with disability and learning difficulties with that of normal ones within the same crown. Competency based teacher education is a framework, where teachers demonstrate their learned knowledge, attitude and skills in order to achieve specific predetermined "competencies" for a specific course or at a specific educational institution. Children with learning disabilities have significant impairment in reading, writing and mathematics, in spite of normal intelligence and sensory abilities.

AIM:

The aim of the study was to evaluate the Effectiveness of Competency Based Teacher Education (CBTE) Training Module on Knowledge, Attitude and Practices (KAP) of School Teachers regarding Learning Disabilities in Children.

MATERIALS AND METHODS:

This was a pre- experimental study carried out with one group pre-test and post-test design. A total of 350 school teachers were randomly selected through multistage cluster sampling method as study subjects from a private and government schools who were handling the classes for primary school students at Kolar and the school teachers who had previous exposure in special schools and who had already worked as a counsellor were not included in the study. Data were collected from the teachers through self-administrated structured questionnaires consisting of 150 items which included socio-demographic characteristics, Knowledge, Attitude, and

Practice related questions on learning disabilities in children. The data were analysed by descriptive and inferential statistical methods.

RESULTS:

Among the total study participants majority of the school teachers 175(40%) were between the age group of 31-40 years The mean age was 37.52 In terms of gender majority 276(78.9%) were females and remaining 74 (21.1%) were males. Regarding educational qualification more than half of the teachers 197 (56.3%) were undergraduates, regarding their marital status, most of them 300(85.7%) were married ,46 (13.1%) was unmarried, in terms of religion 281(85.7%) of them belongs to Hindu religion, 33(09.4%) were Muslims and 36(10.3%) of them belongs to Christian. With regard to place of residence majority of them were from urban area 183(52.3%) and 163 (38.9%) were from rural area. With reference to the type of school almost all the school teachers 345(98.6%) were from private school and only 05(1.4%) of the school teachers belonged to government school.

The study findings before intervention in pre-test revealed that 89 (25.4%) of the school teachers had inadequate knowledge, majority of them 254 (72.6%) had moderately adequate knowledge and only 07 (02%) had adequate knowledge regarding learning disabilities in children. With regard to attitude 70 (20.0%) of them had moderately favourable attitude, 272 (77.7%) had favourable attitude and only 08(2.3%) had Highly favourable attitude whereas, none of them had unfavourable attitude. Regarding level of practice, predominantly 217 (62.0%) of the school teachers had good level of practice, 96 (27.4%) of them had satisfactory level of practice (average) and 30 (08.6%) of them had excellent practice in managing the

children with learning disabilities at classroom level where as only 07 (02.0%) had poor level of practice (below average) under pre-test.

The effectiveness of the CBTE training module was measured after 15 days and it revealed that majority of school teachers 202 (57.7 %) had adequate knowledge and 148 (42.3 %) of them had moderate adequate knowledge, where none of them belonged to inadequate knowledge level. The majority of them 222 (63.4%) had highly favourable attitude and 128 (36.6%) had favourable attitude whereas none of them belonged moderately favourable and unfavourable attitude under Post-test. The majority school teachers 167 (47.7 %) had excellent level of practice, 183 (52.3%) of them had good level of practice in managing the children with learning disabilities at classroom level where as none of the school teachers belonged to poor level of practice (below average) and satisfactory practice (average) in Post-test.

The pre-test and post-test mean enhancement scores of knowledge as 8.93±3.39, attitude mean enhancement as 38.85±14.03 and practice mean enhancement scores as 20.57±17.84 and the paired ‘t’ test values with comparison of mean scores shows 49.18 for knowledge, 51.79 for attitude and 21.57 for practice respectively, where it is statistically significant at $P<0.05$ with degree of freedom at 349, The study findings showed that there is highly statistically significant difference with high positive correlation between pre-test and post-test knowledge ($r=0.81$, $P<0.05$), attitude ($r=0.75$, $P<0.05$), and the practice ($r=0.79$, $P<0.05$)

INTRODUCTION

CHAPTER-I

INTRODUCTION

"Learning Disabilities Cannot Be Cured, But They Can Be Treated Successfully and Children with Learning Disabilities Can Go on Live Happy, Successful Lives".

-Anne Ford

BACKGROUND OF THE STUDY:

The term **"learning disabilities" (LD)** is used to describe a broad range of issues that are characterized by severe challenges in learning and using certain skills, such as speaking, listening, reading, writing, thinking, or mathematics. ***"*(NJCLD-National Joint Commission on Learning Disabilities: 1998)".**[(1)]

These illnesses can happen at any stage of life, are believed to be caused by malfunction of the central nervous system, and, and are intrinsic to the person. Although they perhaps cohabit with learning difficulties, issues with self-regulation behaviours, social perception, and social interaction do not by themselves qualify as learning disabilities.[(1)]

Despite the fact that learning disabilities may accommodate other disabilities (such as impairment of the senses, intellectual disabilities, severe emotional disturbance), or linked with external factors (such as differences in culture, inadequate or improper guidance), they don't cause by these conditions or influences.[(2)]

A "specific learning disability" (SLD) refers to a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think,

read or write or do mathematical calculations **"(IDEA-Individuals with Disabilities Education Act-1977)".**[2]

The 10th Revised **"International Classification of Diseases and Related Health Problems" (ICD-10)-WHO Version for 2016** defines learning disability as a cluster of functional impairments when someone struggles to study in a conventional way. The Disorders of psychological development are seen in this block (F80-F89), while (F81) stands for specific developmental abnormalities of academic skills, which are disorders when the regular processes of learning are skewed from a young age.[3]

The specific developmental problems that affect academic performance have the following subtypes: F81.0 Specific reading disorder, F81.1 Specific spelling disorder, F81.2 Specific arithmetical skills disorder, F81.3 Mixed scholastic skills disorder, F81.8 Other learning disabilities that affect academic skills (Developmental expressive disorder in writing), and F81.9 problem with the development of academic abilities, unspecified.[3]

According to the "Rights of Persons with Disabilities Act" (RPWD, 2016), "Specific learning disabilities" relate to a diverse range of disorders in which it shows problems with comprehension, speaking, reading, writing, spelling, or performing mathematical calculations. There are many labels used to describe children with learning problems, including dyslexia, slow learners, brain damage, learning disabilities, always on the go, educationally handicapped, mentally retarded, and poor readers. [4]

The brain "processes" information differently among those who have learning difficulties than in most other pupils, to start. Second, a "discrepancy" a learning disability causes a gap between your capacity and accomplishment. This implies that

a youngster is far intelligent than his or her academic performance suggests. Similar to a cricketer who possesses the “capacity" but is provided with a broken bat to hit home runs to wield, a youngster with learning disabilities has this ability. She/he is not able to prove how outstanding they truly are.[(4)]

The intelligence scores of children with learning disorder are frequently ordinary to above average. There frequently appears to be a disconnect between a person’s both potential and actual success. Because of this, learning difficulties are often called as "hidden disabilities": although the child appears to be highly bright and brilliant, they may be unable to display the level of proficiency that is typical for someone their age.[(4)]

Children who have learning difficulties cannot outgrow them, but they can learn to adapt and strengthen their poor capabilities. Children with learning disabilities are more likely to learn to overcome their challenges and keep a good self-image if they are diagnosed and treated early. They can learn to build on their own abilities and grow up to be extremely successful and productive people. [(4)]

Learning disability categories at a global level:

The seven diseases described below are regarded by many mental health specialists, notably the **“Learning Impairments Association of America”,** as distinct learning disabilities.

1. Dyslexia

2. Dysgraphia

3. Dyscalculia

4. Disorder of auditory processing

5. Disorder of language processing

6. Nonverbal learning disorders

7. Deficit in visual perception and motor control

They categorize “Attention Deficit Hyperactivity Disorder (ADHD)” and “Autism Spectrum Disorder (ASD)” as two related but different learning diseases that have an effect on learning.[5]

Dyslexia: Reading difficulty, or dyslexia, is a particular learning disability that has an impact on language-based processing abilities connected to reading.[6]

Dysgraphia: Dysgraphia is a particular learning disorder that impairs a person's fine motor and handwriting skills. Additionally, to spelling problem and spelling dyslexia, it is marked by poor writing abilities.[6]

Dyscalculia: It deals with a person's capacity for comprehending numbers, learning math facts, and having issues learning arithmetic.[6]

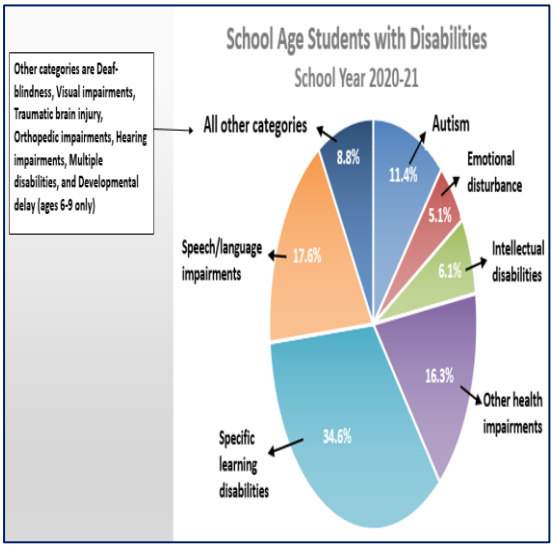
Auditory processing disorder (APD): APD is a weakness in the brain's ability to process auditory inputs, which prevents the affected child from "hearing" sounds the way most people do. [6]

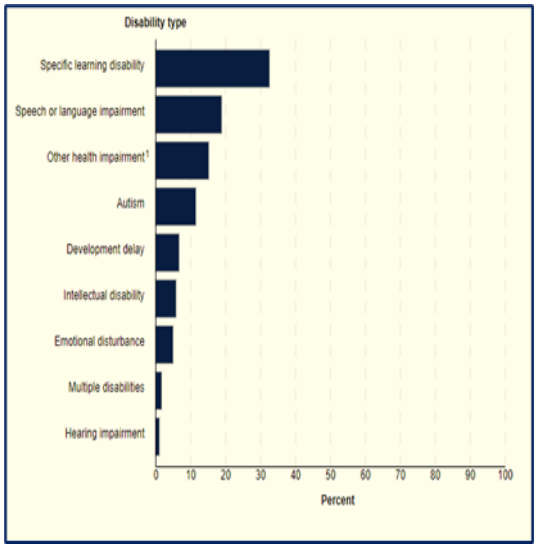
Language processing disorder (LPD): LPD only affects the way language is processed. Finding the right words and phrases or keeping up with a fast-paced discussion may be challenging for children with “language-based learning disabilities (LD)”.[6]

Nonverbal learning disabilities (NVLD): The term "NVLD" refers to issues with comprehending nonverbal behaviour or social indicators such as tone of voice, facial expressions, or body language. **(6)**

Visual motor and perceptual deficits: A person with poor eye-hand coordination, frequent reading positional errors, and having trouble utilizing scissors, glue, crayons, and other fine motor skills is said to have visual perceptual/visual motor deficits.**(6)**

Common Learning Disorders and the Different Domains:





(Percentage distribution of students ages 3–21 served under the Individuals with Disabilities Education Act (IDEA), by selected disability type: School year 2020–21)

Other conditions that hinder a child's ability to learn include There is occasionally a co-morbidity between anxiety, sadness, stressful situations, psychological harm, among other illnesses including ADHD and Autism.**(7)**

Academic progress is slower than that of the student's chronological age, and it is extremely clear that the student has impairments in all areas, including dyslexia, dysgraphia, dyscalculia, dyspraxia, perceptual problems, and developmental aphasia

with specific learning disabilities (SLDs) at school. According to several research conducted over the past five years, the prevalence of certain learning disabilities in India varies from 5% to 15%.[8] Boys seem to be more impacted than girls, suggesting a gender preference. Additional behavioural and emotional problems include ADHD, autism spectrum disorder, conduct disorder, depressive disorder, anxiety disorder, and others are examples of co-morbid conditions.[8]

There is no cure or treatment for a learning issue. People who have learning disorders may have particular difficulties that frequently persist throughout their entire career. Interventions may be utilized to assist the individual in learning techniques that will promote future achievement, depending on the nature and degree of the disorder. While some interventions are complex and challenging, others may be rather straightforward. In terms of how they help the person do various duties successfully, the intervention will include involvement from parents and teachers. School psychologists frequently collaborate with teachers and parents to create the intervention and plan its implementation. In the educational system, social support may be a crucial component for students with learning disabilities, and it shouldn't be ignored in the therapeutic plan. Learning disabled people can excel in school and in later life with the proper assistance and intervention.[9]

Parental and educational staff ignorance continues to be a serious problem. A unified, consistent strategy is impossible because of the diversity of educational curricula, differing standards, and multilingualism. However, regional protocol modifications and widespread children screening are essential. The probable biological foundation might be revealed by improvements in genetics and research on functional imaging in children with SLD. To better understand and help children

reach their full potential, prospective studies, multicenter collaborations, and longitudinal research are thought to be urgently necessary.[10]

"The Competency Based Teacher Education (CBTE)", The CBTE method places a strong emphasis on the development of professional teacher skills for technical education, which came up as a result of the different responsibilities that instructors must do. It is particularly pertinent to teacher education, and several training institutions are changing their teacher education curricula to a Competency Based Teacher Education with teachers' consent (CBTE). The three CBTE competences are subject-matter knowledge, teaching techniques for mastery, and behavioral attitudes. All three elements must work together to maximize learning in the students.[11]

"Competency Based Teacher education" is the capacity to create educational experiences that take into account the compatibility between the educational offer and the requirements of the student and are related to effective task performance in realistic scenarios, taking a critical view of reality. It empowers the teachers to understand the competencies they need to master to achieve their goals in terms of identifying the children with learning disabilities. Progress through learning processes without time constraints. Explore diverse learning opportunities in handling the children with learning disabilities at classroom level. [12]

School is one of the most organized and powerful systems in society which presents opportunity through it and to influence the health and wellbeing of those individuals who come into contact with the school system. In this situation, a teacher's role becomes crucial for protecting and improving children's mental health furthermore for the quick recognition of inappropriate behavior.[13]

An educational task is always involved when determining whether a pupil has a learning disability, Moreover, it begins when parents or teachers see that the pupil is struggling with the daily schoolwork. It has been demonstrated that a learning-disabled child's success depends greatly on the teacher and student relationship. Services for people with learning difficulties claim that when a teacher makes an effort to meet the requirements of these pupils, the students can gain substantially. These pupils could require modifications for some classroom activities, assignments, and tests. A fantastic assistance to the child is educating them about their disability. Children with such issues may experience subsequent emotional, social, and family issues if they are not recognized and treated appropriately.[(14)]

The prevalence of learning difficulties in children is roughly 10% across their lifespan. Compared to girls, guys are more likely to experience learning impairments. Significant risk factors for learning impairments in children include low birth weight, premature birth, neonatal issues, language delay, and epilepsy. Students who struggle with learning difficulties perform poorly academically and experience high levels of stress and worry. They experience more behavioural, emotional, and social issues than people who don't have learning difficulties. Learning impairments will result in exam failure if not treated as soon as possible, and these kids run the risk of developing stress-related diseases. All children with learning difficulties should be evaluated scientifically as soon as feasible in order to detect learning disorders. Children's learning issues can be successfully controlled by offering scientific direction and intense one-on-one remedial training.[(15)]

NEED FOR THE STUDY:

"Learning disabilities are not a prescription for failure. With the right kinds of instruction, guidance and support, there are no limits to what individuals with Learning Disabilities can achieve." *Sheldon H. Horowitz*

Knowledge and labour are not two distinct things, according to the basic education philosophy known as **"Nai Talim".** According to this pedagogical idea, the father of the Nation Mahatma Gandhi developed the same-named educational curriculum.[(16)]A useful art, craft, or a community involvement project serves as the focal point of this all-encompassing approach to learning in an effort to advance the body, mind, and soul. The new administration of the "Republic of India "supported the concept of universal and mandatory education for all children in the age group of 6 to 14.[(16)]

The basic competencies of students have been the focus of educational reforms all throughout the world. **"Inclusive education"** is a term used to describe an educational system where students with and without impairments learn together, with the teaching and learning methods appropriately modified to fulfil the learning requirements of various categories of disabled students.[(17)] Inclusive education is a new approach towards a system of educating the children with disability and learning difficulties with that of normal ones within the same crown The best method to ensure that all students have an equal opportunity to attend school, study, and acquire the abilities required to succeed is through inclusive education.[(17)]

"Learning for all" is a goal of the **2020 "National Education Policy (NEP)", [(18)]**which aspires for inclusive and equitable education. In accordance with the abovementioned Policy, Disability-related students should:

1.Promotes awareness and information on teaching techniques for students with impairments, particularly students with learning problems, as a key element of teacher education programmes.

2. Persistence of a standard approach to inclusion and equity in higher education and the classroom.

3. Priority should be provided to programmes for teacher education that address the inclusion of diverse learners and their learning needs.

In recent years, learning problems have gotten greater attention. If educators don't recognize and address it, it can become a permanent impairment. In order to identify pupils with learning difficulties (LD), teachers in schools play a critical role. After parents, teachers have the largest impact on a child's life. Being a good teacher requires a combination of knowledge, skills, and understanding of both pedagogy and the subject matter, as well as the ability to use proven teaching strategies. Unfortunately, learning disabled students are less likely to have teachers who are as qualified and effective. If this needs to change, educators must adopt a new perspective on LD in order to be adequately educated and outfitted to handle such difficulties in the classroom.**(19)**

A well-trained, highly effective teaching staff is essential for the achievement of children with learning disabilities. There is a severe shortage of special educators in our nation and abroad, and a large proportion of children with learning disabilities spend a lot of time learning in classrooms towards general education.

The need for general education teachers to learn how to engage with an increasing number of different students has now become critical. Since school

teachers spend over 6-7 hours with each student, it is crucial that they receive the right training to recognize students who may have learning issues. This might be the first step in providing the student with support. Along with assisting in the identification of children with learning impairments, schools and teachers play a critical role in integrating these children into society. It is the school where the child develops his or her self and learns how to fit into a larger family. It is the teacher who possesses the mystic potential to transform "sadness into joy", "failure into success", and "**Disability** into **Ability".**[(20)]

Research was conducted on "Competency Based Teacher Education (CBTE)" a training module for improving knowledge competencies for resource room teachers in Jordan with a sample size of 50 teachers. The results revealed that between the pre-test and post-test, the means of the two groups on the accomplishment test were different. An adjusted mean of (M=33.15) with a standard deviation of (SD=3.41) for the control group, and (M=42.24) with a standard deviation of (SD=2.32) for the experimental group. Additionally, the results of the (ANCOVA) analysis showed that the experimental group was favoured on the post-achievement test, with statistically significant differences between the means of the two groups.[(21)]

A framework known as **"Competency-Based Teacher Education"** requires teachers to demonstrate their acquired knowledge, attitude, and skills in order to meet specified predetermined "competencies" for a particular course or at a particular educational institution. Therefore, with this competency-based teacher education training module, the investigator was trying to find new knowledge that helps teachers in schools, especially in elementary schools, receive training on how to work with students who have learning challenges could enhance better school results, and also to plan innovative strategies for teachers to manage the children with learning

disabilities under normal classroom and, finally to provide some screening tools for teachers to use in identifying students with learning disabilities.

VALUABLE FACTS ON LEARNING DISABILITIES:

Learning disabilities are surprisingly widespread, as evidenced by statistics on their prevalence. The data on learning difficulties can be used to determine how many children are impacted by learning problems.

Prevalence of Learning Disabilities (Globally):

Over 4 million children in the US have at least one learning disability, making learning disorders (LD) a high incidence disability.1.69 percent, or one in 59 children, have one or more learning difficulties. 20% percent of children, or one in five, struggle with learning and attention. [(22)] More than 2.5 to 2.8 million US children get special education assistance due to a learning impairment. In the US, 4 million children under the age of 18 suffer from learning difficulties. About two thirds of students with learning disabled are male. Only 12 to 26% of students with learning disabilities performed in the average to above-average range on reading and math standardized examinations, compared to 50% of non-LD students. [(22)]

Of children with ADHD, 11% also have dyscalculia, a learning problem in maths. Dyslexia, for which 20% of kids receive special education services. Dyslexia, dysgraphia, and ADHD are the three most prevalent learning disabilities. Attention-deficit hyperactivity disorder (ADHD) affects about one-third of people with learning difficulties. [(22)]

Children who have learning difficulties are 31% more likely to experience bullying than their peers who do not. In contrast to a special education classroom or

resource room, seven out of ten students with an IEP for a learning disability spend 80% or more of their school day in their normal education classroom.33% of individuals with learning disabilities have ADHD. 33 percent or more of children enrolled in Individualized Education Programmes (IEP). 47 percent of all children receiving special education services as of 2021 seem to be the 2.5 to 2.8 million children who have learning difficulties are enrolled in special education. [22]

Statistics & Prevalence of Learning Disabilities in the UK:

According to the report by the "CSJ Disability Commission 2021", Less than 10% of UK students with Special Educational Needs (SEN) attend special schools, with the majority attending regular schools**.** In England in 2019–20, special schools served 9.3% of students with SEN (Gov.uk, 2020). In Northern Ireland, that percentage in 2021–2022 was 9.8%. (DENI, 2021). In Wales, that percentage for 2019–20 was 5.3%. (Stats Wales 2020). In Scotland, special schools served 6.8% of students with additional support requirements in 2020. (Scottish Government, 2021). [23]

Key information on learning disabilities in India:

The word "LD" was essentially unknown in India's educational system more than a decade ago. According to Education data.org,2017,1 million kids in primary and secondary schools have been identified as having LD. [24] Based on NCLD report 2015-16, Children with LD drop out of high school at a rate that is over three times higher than that of other students, with 1 in 5 having learning and attention disorders like dyslexia and ADHD. The incidence of LD in India is estimated to be between 10 and 12% of the school-age population (UNESCO-MGIEP report 2020). [24]

Putting a child with learning difficulties in a classroom might make a trained, qualified instructor appear insufficient, leaving the student's and their parents perplexed, frustrated, overwhelmed, and angry. Teachers with specialized training and knowledge of learning disabilities are needed to teach these children. However, there are not many teachers who have received training. [(24)]

Studies that highlight data on learning difficulties in children:

A systematic review and meta-analysis were conducted using a methodical search of the electronic databases of "MEDLINE, Embase, PsycINFO, and CINHAL" where the authors compiled SLD prevalence research that were written between 1990 and 2020, a period of 30 years. The pooled prevalence of SLDs was calculated from the reported prevalence of the relevant studies using the random-effects model. The overall pooled prevalence of SLD in India, according to the random-effects meta-analysis, was 8%. (95% CI=4-11). According to the review, 8% of children up to the age of 19 have SLD. There aren't many high-quality population-based epidemiological research on this subject that follow sound methodology so large-scale population-based studies that make use of the proper screening and diagnostic technologies are required in India.[(25)]

Cross-sectional research was done to find out how common certain learning difficulties among schoolchildren between the ages of 8 and 12 as well as the SLD-related risk factors with a total of 800 children from the third to sixth standard were included in this study, which was done at two government-run and two privately-run schools in Gwalior. A total of 23 students were found to have SLD, with a prevalence of 2.87%, according to the survey. The combination type was the most prevalent (dyslexia and dyscalculia). The prevalence of reading impairment was 2.5%, that of

writing disability was found to be around 1.37%, and that of arithmetic disability was determined to be around 2.25%. The average age of the students with SLD was 9.8. of 19 students (82%) of the learning challenged students.Prematurity, low birth weight, and a history of head trauma were the antenatal risk factors linked to SLD. Attention-deficit hyperactivity disorder was the most frequent comorbid condition linked to SLD.[26]

A systematic review was conducted in order to assess the current prevalence in India, journals that have been published since 2000 and are indexed in PubMed and Scopus have been used to find studies. According to studies, One percent to 19 percent of Indian school-age children have LD. The variation of prevalence shows that awareness-raising is necessary. Additionally, it's crucial to assess LD in Indian school-age children using a uniform standard scale. In India, 10% of children are affected by LD. Mental health issues and delayed interventions are caused by delayed identification. Early intervention would be encouraged by mental health education programmes.[27]

The study sought to determine the prevalence of developmental disabilities among children in the United States, over the study period of 2009-2017 and also to know the growing number of children in the US with developmental disabilities, Researchers from the “Centers for Disease Control and Prevention (CDC)” and the “Health Resources and Services Administration (HRSA)” discovered that 17% of children age 3 to 17 had a developmental disability, and crucially, that this percentage increased over the two comparison time periods, 2009 to 2011 and 2015 to 2017. Increases were also observed for specific developmental disabilities within the same age range.Parents indicated that around 1 in 6 (3%) children aged 3 to 17 had a developmental disability during the study period (2009–2017). The percentage of

children aged 3 to 17 who had a developmental disability increased from 16.2% in 2009–2011 to 17.8% in 2015–2017. Diagnoses specifically increased for intellectual disability (ID) (0.9% to 1.2%), attention-deficit hyperactivity disorder (ADHD) (8.5% to 9.5%), and autism spectrum disorder (ASD) (1.1% to 2.5%).[28]

The future of all countries lies in the hands of today's students. It is only appropriate to ascertain whether teachers are sufficiently equipped to make learning and performance effective and efficient for this special population of pupils given the large number of children identified with learning disabilities in schools across India. At the primary school level, teachers should be crucial in recognizing students who have learning problems. A teacher with the appropriate knowledge and skills can better serve learning-disabled students than a teacher with a general pedagogy background. To be able to create instructional models that are effective for these individuals, teachers need to have a solid understanding of the cognitive, linguistic, neuropsychological, behavioural, and social traits associated with learning disorders.[29]

Research on the training needs of teachers for students with learning disabilities was conducted a survey of teachers' perspectives on investigating the extent of training needs of teachers for students who have learning disabilities (LD) with a quantitative research approach, and the sample comprised of 432 teachers working in programmes created for students who struggle with learning disabilities in Riyadh public schools. The findings showed that the majority with a mean score of 2.78 for the teachers suggested modest training needs. The outcomes also demonstrated that, to a certain extent, gender influenced the level of training requirements for teachers working with students with LD, it was discovered that teachers with bachelor's degrees had more training needs than those with master's

degrees, while those with less than five years of experience had more training needs in comparison to other groups. The study suggested that administrators and school district officials give teachers financial and moral incentives to attend workshops and training sessions so they can advance their knowledge of learning difficulties in children.[30]

LACUNAE OF THE STUDY:

More children struggle with learning and attention problems; 1 in 5 of them. These children may succeed academically, socially, and emotionally with the right policies in place, as well as greater awareness among parents, educators, and the community. When schools and school teachers don't give children enough help, the social, emotional, and behavioural difficulties that frequently accompany learning and attention problems can have detrimental effects. like the chance of missing class, dropping out, and getting in trouble with the law is raised, as are social isolation and excessive disciplinary rates.

Major study findings through the extensive literature review suggested that, a strategic plan should be adopted by the Ministry of Education to improve the quality of training programmes for teachers of children with disabilities. In-service training and education for primary school teachers should be conducted on a regular basis and that ITP is an excellent technique for raising awareness among these school teachers in the identification and treatment of SLD in children and by providing school teachers with intense, ongoing training programmes, educational workshops, and certification to enable them to effectively help children with LDs gain independence skills also the research results suggested that, it is vital to educate parents and teachers

about common misconceptions about learning difficulties using a prepared teaching programme**.**

In order to improve school teachers' knowledge, attitude, and competence, the scholarly research gives suggestions for the development and implementation of various training modules and instructional programmes with some of the inferences in the studies which states that self-instructional modules are a successful instructional strategy for raising primary school teachers' awareness of learning difficulties, introduction of the self-instructional module, will help them in identifying students with these challenges for early intervention, their level of knowledge dramatically increased as well as the Learning Package enhances primary school teachers' knowledge of learning disabilities.

MOTIVATION FOR THE STUDY:

Any educational system must recognize the critical role that teachers perform. Children's physical, intellectual, and moral abilities are moulded and shaped by teachers, who are found to be artists. Mild learning difficulties can be seen in any typical school among students. Children who have significant disabilities frequently enroll in the special schools designed for them. However, children with minor learning difficulties are accepted into regular classrooms. The goal of universalizing elementary education and ensuring equal access to educational opportunities cannot be achieved if these disabilities go unrecognized, unaddressed, or overlooked and the needs of such children are not met in regular classrooms or special education within the school. It enables these children' academic performance to regress.

These days, the majority of school teachers are unfamiliar with learning disorders and the traits that exhibits in children. Along with providing guidance and

counselling, it is crucial that teachers have the specialized skills necessary to recognize the various types of learning difficulties, their root causes, the development of instructional strategies, media, and materials, and the adoption of developed remedial strategies. In order to successfully deal with students that have learning difficulties, the instructor must possess a number of unique capabilities. Since receiving an education is a vital human right, it is crucial for schoolchildren's growth to receive an inclusive education from a high-quality educational system. Teachers are in a unique position to support parents in the early detection of learning difficulties and to offer advice for families because schoolchildren spend more time with them.

Educational institutions place a high value on teacher preparation and education as the most crucial aspects of professional growth, making teacher enrichment programmes essential. Ultimately, the Competency-Based Teacher Education (CBTE) training module will have a favorable effect and will be the most efficient remedial method for enhancing knowledge, attitude, and skills about learning difficulties in children in terms of recognizing them as soon as possible.

More than 15 years of experience working in the field of psychiatric nursing, as a Primary investigator, I had carried out numerous outreach activities in the context of such school mental health programmes. The investigator himself observed that, despite the students' varying levels of aptitude for learning, they were all required to adhere to the syllabus. Students with weak academic performance and slow learning skills struggle in all or some of the subjects.

The society in which we live labels these children as failures by telling them like, "You are good for nothing," "You can do nothing in your life," "Your parents have not taught you properly," "You are acting smart to get out of doing your

homework," and "You are dumb, you cannot get decent marks in exams." Teachers also treated them poorly, which further lowered their self-esteem. However, in actuality, the education system has failed to identify and assist these students, not the children themselves. Since teachers serve as the intermediary between the educational system and the students, it is their level of knowledge and awareness that determines the direction these students' futures will take.

As a reason, the researcher had an intense desire to train school teachers so they would be aware of their knowledge and attitudes regarding children with disabilities, their characteristics, and how to recognize, assist, and manage such children in a regular classroom through the “Competency-Based Teacher Education (CBTE)” training module on empowering teachers on learning disabilities to become crucial in protecting and improving the psychological wellbeing of children with learning disabilities.

Therefore, the researcher believed that both public and private educational institutions are challenged by the issue of quality in teacher training programmes. Being the first to bring up this issue is crucial in getting the attention of people in charge of training programmes. It is essential to work consistently on improving instructors' abilities, including those who work with students who have disabilities, from a scientific and professional standpoint. The ongoing professional development of teachers will enable them to follow along with the innovation era, promote training as a foundation for entrepreneurship, and create training strategies that are in accordance with current global trends in education.

This current study carefully addressed the influential elements indicated above in order to develop, validate, improve, and implement a “Competency Based Teacher

Education (CBTE)" training module on learning disabilities in children among school teachers, furthermore this package of training module will clarify the impact of the modules in terms of changes in the Knowledge, Attitude, and Practice scores of school instructors about children with learning difficulties. The outcome of this study findings will show how "Competency Based Teacher Education (CBTE)" Training Modules affect knowledge, attitudes, and practices as well as how well children with learning disabilities are identified and handled in regular classroom settings under inclusive education.

Since learning disabilities have emerged as a new psychological and behavioural issue in rural areas, it is anticipated that the findings from this study will enable the school teachers in Kolar district to provide quality education to the children with learning disabilities based on the guidelines according to the "New National Educational Policy 2020".

Moreover, the researcher founded a very limited number of relevant studies on Competency-Based Education for Children with Learning Disabilities in India because these studies were found to be methodologically flawed which prompted the researcher to conduct a study in order to evaluate the "Effectiveness of a Competency-Based Teacher Education (CBTE) training module on teachers' knowledge, attitudes, and practices (KAP) addressing learning disabilities in children in a sample of schools in the Kolar district" and this study is one of them that would make it easier to close the knowledge gap in this field and assist policymakers in making adjustments to the inclusive educational system.

The background of the study, its genesis, and its necessity have all been covered in this chapter.

OBJECTIVES

CHAPTER-II

OBJECTIVES

This chapter covers the aim of the study, research questions, problem statement, and objectives of the research, hypotheses and the conceptual framework.

RESEARCH QUESTIONS:

1. Does Competency-Based Teacher Education (CBTE) training module have an effect on Knowledge, Attitude and Practices (KAP) regarding learning disabilities in children among school teachers?
2. How does teachers in different schools at Kolar district differ significantly in their awareness, attitude, and practices after using competency-based teacher education (CBTE) training module ?

AIM OF THE STUDY:

To develop, validate, refine and implement Competency Based Teacher Education (CBTE) training module on learning disabilities in children among school teachers in order to determine the impact of training module in terms of change in Knowledge, Attitude and Practice scores of school teachers towards learning disabilities in children.

STATEMENT OF THE PROBLEM:

"A study to determine the Effectiveness of Competency Based Teacher Education (CBTE) Training Module on Knowledge, Attitude and Practice (KAP) of School Teachers regarding Learning Disabilities in Children in selected schools at Kolar district".

OBJECTIVES:

The study's objectives were to:

1. Assess the level of knowledge, attitude and practices of school teachers regarding learning disabilities in children by using structured questionnaires.
2. Determine the effectiveness of Competency Based Teacher Education (CBTE) training module on the level of knowledge, attitude, and practices of school teachers regarding learning disabilities in children by comparing the pre-test and post-test scores.
3. Establish the correlation between knowledge, attitude and practices of school teachers on learning disabilities in children with Pre-test scores.
4. Find out the association between knowledge, attitude and practice scores on learning disabilities in children with the selected socio- demographic variables of school teachers.

HYPOTHESES:

The hypothesis is tested at a significance level of 0.05,

H_1: There is a significant difference between pre-test and post-test knowledge, attitude and practice scores of school teachers regarding learning disabilities in children before and after the implementation of Competency Based Teacher Education training module.

H_2: There is a significant relationship between knowledge, attitude and practice of school teachers towards learning disabilities in children.

H_3: There is a significant association between knowledge, attitude and practice on learning disabilities in children with the selected socio-demographic variables of the school teachers.

OPERATIONAL DEFINITIONS:

1. **Effectiveness:** In this study, it alludes to the expected or desired result of the Competency Based Teacher Education (CBTE) training module provided to school teachers on knowledge gain, attitude change, and practise score improvement regarding learning disabilities in children as determined by significance difference in comparing the scores obtained before and after the intervention as measured by the designed tool of structured knowledge, attitude, and practise questionnaires.
2. **Competency Based Teacher Education:** In this study, it refers to a methodically organised training module/program for school teachers that is prepared by the investigator and approved by the experts on the module. The module includes systems of instruction, assessment, and grading on various components of learning disabilities in children. It also uses lecture as well as discussion with the use of audio-visual aids like an LCD and its screen, a laptop in the mode of a Power point presentation with appropriate pictures for the duration of 60-90 minutes on the day one after their pre-test to improve teachers' knowledge, attitude, and practise and the study participants were motivated to clarify their doubts.
3. **Learning Disabilities in Children:** In this study, It is most often referred to prominent group of disorders, including dyslexia, dysgraphia, dyscalculia, and dyspraxia, which are characterised by severe challenges in learning and

using skills for listening, speaking, reading, writing, or mathematics and are frequently seen in primary school children.

4. **Knowledge:** In this study, it refers about the answers made by the teachers to the questions in a structured knowledge questionnaire on children's learning disabilities which is divided into three categories as Inadequate Knowledge (≤50%), Moderately Adequate Knowledge (51-75%) and adequate knowledge with more than (>75%).
5. **Attitude:** In this study, it refers to the exploration of ideas or perspectives on helping students with learning difficulties by the teachers with the desired change being visible from the scores, which are measured using a 5-point Likert attitude scale, described as Attitudes are rated as either Highly Favorable (81-100%), Favorable (61-80%), Moderately Favorable (41-60%), or Unfavorable (20-40%).
6. **Practice:** In this study, it describes how well teachers complete a task or skill to maintain competency in it which is assessed by using a rating scale on a practise questionnaire for managing children with learning difficulties categorised as Below Average Practice (Poor Practice) 0–25%, Satisfactory Practice (Average Practice), 26–50%, Good Practice, 51–75%, and Excellent Practice, 75–10%.
7. **Selected Schools:** In this study, It refers to a primary and secondary educational establishment that satisfies the department of education's registration standards and is situated in or close to the Kolar district and offers its services through government schools, private schools that are unaided, or aided schools.

ASSUMPTIONS:

1. Teachers in schools may have a basic understanding of how to identify and manage students who have learning difficulties as well as a basic attitude toward them.
2. A “Competency-Based Teacher Education (CBTE)” training module may have an impact on enhancing school teachers' understanding, attitude, and behaviours for students who struggle with learning difficulties.
3. A top-notch training programme for school teachers on learning disabilities in children might be helpful in the early detection of specific learning disabilities (SPL) and managing these children in further behavioural issues.
4. Teachers' reinforcement of learning may result in behavioural changes that facilitate the acquisition of knowledge and skills through experience.
5. Knowledge about children's learning disabilities may have an impact on teachers' attitudes and behaviour, which will enable them to comprehend children with learning impairments better.

DELIMITATIONS:

The present Study is delimited as follows:

1. Only the teachers employed in particular schools at Kolar.
2. School teachers present throughout the time of data collection from the selected schools.
3. Appraisal of knowledge, attitudes and practises about learning disabilities in children was based on the CBTE training module.
4. The school teacher who is between the ages of 21 and 52.
5. Under the Kolar district, only one block was chosen for the study.

CONCEPTUAL FRAMEWORK:

A research project's broad framework is commonly known as the conceptual framework. It functions as a kind of study road map that makes it possible easier to picture the research project in action and illustrates the relationships between the study variables. A conceptual framework may incorporate formal theories in one or more in whole or in part to reflect the anticipated relationships between the variables. The current study aims to establish "Competency-Based Teacher Education (CBTE)", training modules on learning disabilities in children, and "Evaluate the Effectiveness of Training Modules on Knowledge, Attitude, And Practises (KAP) of school teachers in particular schools in the Kolar region".

Using "**Daniel Stufflebeam's CIPP (Context, Input, Process, and Product)"** paradigm, a conceptual framework was developed. The CIPP model, which was created by Daniel L. Stufflebeam in 1960, is a special evaluation model that essentially offers a very methodical approach of looking at many various components of the programme and its process. It was revised in 2003.[(31)] Due to its inclusion of both functional and behavioural factors, the CIPP evaluation model is a well-liked tool for assessing the quality of programmes. CIPP offers a thorough, systematic, ongoing, and comprehensive framework for measuring a program's many different elements. "Context, Input, Process, and Product (CIPP)" model is an evaluation strategy that combines four stages. Through a "learning-by-doing" strategy, this approach aims to enhance and establish accountability in educational programming. Focusing on four aspects of a program-the overarching goals or mission (Context Evaluation), the plans and resources (Input Evaluation), the activities or components (Process Evaluation), and the results of objectives-allows for continual development (Product Evaluation).[(32)]

CONTEXT:

In CIPP, the term "context" refers a number of elements that are taken into consideration needs analysis, resources that are available, issues that need to be resolved, and the program's general environment. This stage of the cycle is the planning stage. The desired goals of a programme are the main emphasis of the context phase. This stage explains what must be done and any particular requirements that must be met. A programme is genuinely surrounded by its context because it specifies the conditions under which it will operate.

In this study, context refers to the aim of the project to determine the "Effectiveness of the Competency-Based Teacher Education (CBTE) Training Module on Teachers' Knowledge, Attitude, and Practices regarding learning disabilities in children in selected schools at Kolar district".

INPUT:

Inputs are the materials that must be incorporated into the programme in order to satisfy the needs that were identified during the Context phase. This stage of the cycle is known as structuring. The inputs cover the tactics to be used as well as the specific tools or resources needed to accomplish programming objectives.

Input in the current study refers to the study's plans, which include,

1. The creation of a suitable research tool or questionnaire (a structured knowledge questionnaire, an attitude rating scale with a 5-point likert scale, and a practise questionnaire with a rating scale) on learning disabilities in children.
2. Development of a "Competency-Based Teacher Education (CBTE)" training module on learning difficulties in children for educators in school.

3. Structured knowledge, attitude, and practise questionnaires on learning problems in children were validated by subject experts for the Competency-Based Teacher Education (CBTE) training module, which also established the tool's dependability.
4. Determining the schools in the Kolar district and choosing the school personnel in accordance with that sample frame.

PROCESS:

Process refers to the creation and execution of programmes. At this stage, evaluating how effectively each process serves the context and whether inputs work well together is a key concern. In the CIPP cycle, this is a phase of implementation. The stage of the process is where the inputs come together cohesively. Additionally, at this stage, the effectiveness of the program's processes is assessed for potential improvements.

Process in the current study refers to the following actions:

Assessments of sociodemographic traits (attribute variables) and school teachers' knowledge, attitudes, and practises regarding learning disabilities. (Dependent Variable). The "Competency-Based Teacher Education (CBTE)" Training Module on Learning Disabilities in Children was administered on the same day through lecture and discussion with the aid of a power point presentation (PPT) and Training Module as Pre-Test (Independent Variable) (Day-1). On Day 15, a post-test was administered using the same tool/questionnaire to evaluate the knowledge, attitude, and practises of school teachers on learning disabilities.

PRODUCT:

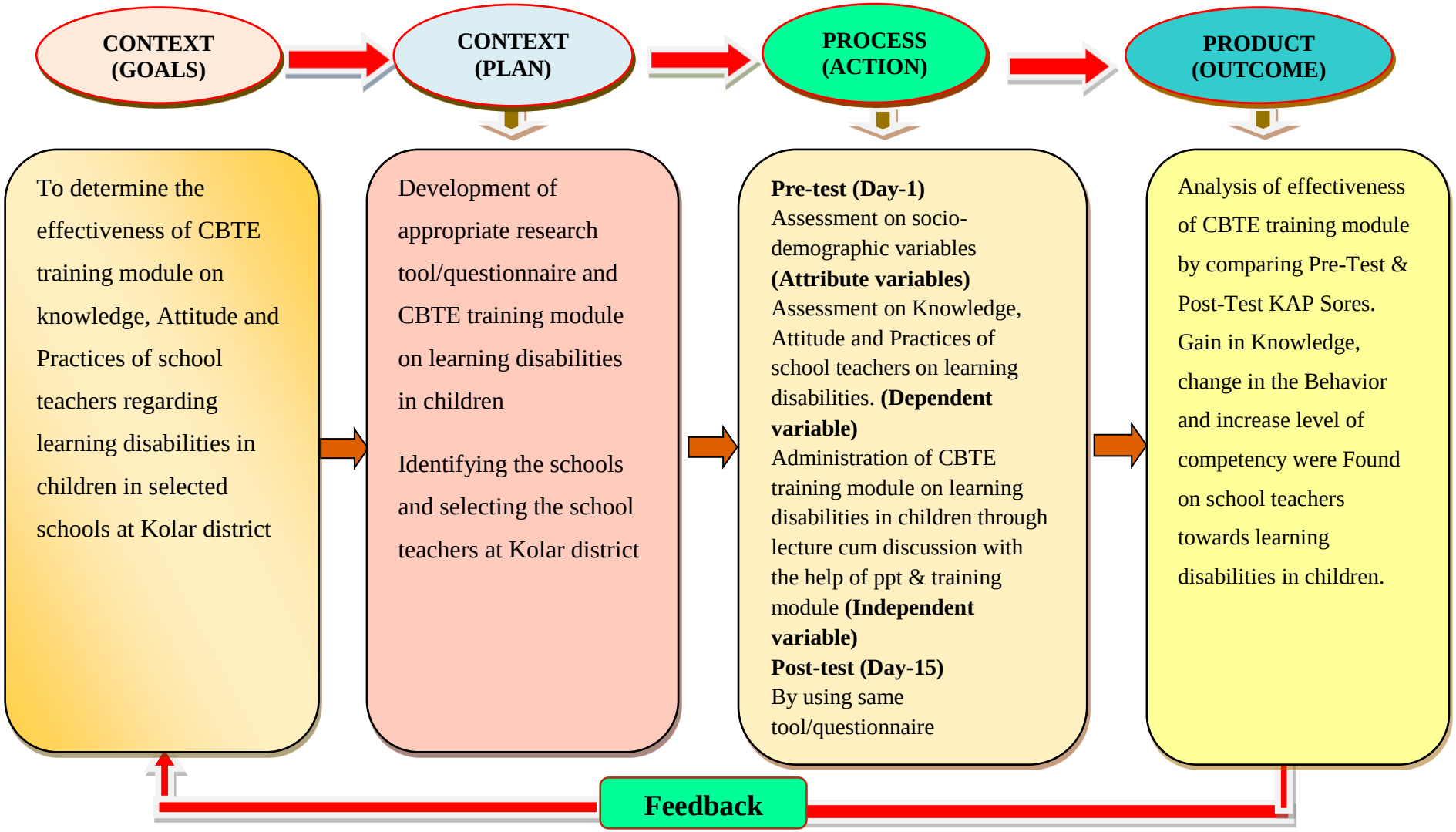
Products are the outputs and results connected to the effectiveness and objectives of a programme. This stage of the cycle is the review phase. This evaluation phase focuses on determining whether or not the planned goals have been achieved. Examining the program's sustainability in terms of context, inputs, and procedures is the main concern. How effectively the programme met its objectives and achievements. Additionally, it is crucial to think about if the programme needs to undergo any systemic changes.

In this study, the term "product" refers to the study's findings,

Comparing Pre-test and Post-test Scores from knowledge, attitude, and practise allows for an analysis of the efficacy of competency-based teacher education (CBTE). It was found that school teachers' expertise, behaviour, and degree of competency in the direction of children with learning disabilities had improved.

The feedback stage, which is not a part of the study's preview, relates to how to enhance and change one's present and subsequent behaviours in order to reinforce an intended result.

This chapter focused on the research questions, aim, problem statement, objectives, hypotheses, operational definitions, assumptions, delimitations, and conceptual framework.



CONCEPTUAL FRAMEWORK BASED ON DANIEL.L. STUFFLEBEAM-CIPP EVALUATION MODEL (2003)

REVIEW OF LITERATURE

CHAPTER-III

REVIEW OF LITERATURE

A review of the relevant literature is presented in this chapter in relation to the study's topic with a logical discussion of previous research studies. A survey of scholarly publications that provide an overview of a certain topic is also included. The following search terms were accustomed to find relevant literature: competency, knowledge, attitude, perceptions, learning disorders, school personnel, Training programmes, teaching modules, and specific learning impairments. assistive technology.

Following are the headings under which the literature review for this topic has been organized:

- Studies on the effects of competency-based training/planned teaching programme on children with learning difficulties among school teachers.
- Studies on the types, prevalence, characteristics, and identification of learning problems in children.
- Studies on the knowledge, attitudes, and practice of school teachers with regard to children with learning difficulties.

I: Studies on the Effectiveness of Competency-Based Training and Planned Teaching Programs on Learning Disabilities in Children:

This research study was conducted to determining the level of assessment of the quality of training programmes for teachers of students with disabilities in the Kingdom of Saudi Arabia from (272) instructors who were selected by the stratified random sampling method from three cities (Jeddah, Makkah, and Taif) during 2019 and 2020.The study's findings showed that, the general degree of evaluation of the

quality of programmes for training teachers of students with disabilities in light of current trends was moderate. The study sample's comments on the quality assessment of training programmes for students with disabilities in light of contemporary trends received a total degree of (3.29) with a standard deviation of (0.51), which indicates a medium degree. Due to academic qualification in favour of postgraduate studies and years of experience for those with more than 10 years of experience, there were also statistically significant differences in the assessment degree of the quality of training programmes for teachers of students with disabilities in light of recent trends. The findings suggested that a strategic plan should be adopted by the Ministry of Education to improve the quality of training programmes for teachers of children with disabilities.[(33)]

A pre-experimental study was carried out to evaluate the efficacy of a self-instructional module on their understanding of children with learning difficulties on primary school teachers with the sample size of 100 primary school teachers by non-probability purposive sampling with one group, pre-test, post-test research method. The findings showed that 52% of primary school teachers had pre-test knowledge scores that were below average, 27% had average scores, 16% had good scores, and only 5% had excellent scores. Whereas the mean post-test knowledge score was 26.6 and was significantly higher than the mean pre-test knowledge score of 12.4, the post-test knowledge score showed that 56% of the teachers had good knowledge, 30% had excellent knowledge, 14% had average knowledge, and none had poor knowledge. The post-test and pre-test scores' respective standard deviations are 9.4 and 13.3, respectively. There has been a significant increase in knowledge, as shown by the computed paired "t" value (18.67, df=99 at the level of P=0.05), which is higher than the table value (1.66). Additionally, there is a significant association

between the pre-test knowledge score and a few demographic factors, including educational background, years of experience, the inclusion of child psychology in the curriculum, and attendance at in-service training. The study's findings led to the conclusion that self-instructional modules are a successful instructional strategy for raising primary school teachers' awareness of learning difficulties. **(34)**

A study was conducted to examine the effectiveness of a self-instructional module for elementary school teachers in the Kanchipuram District of Tamil Nadu on learning disabilities (LD). This is a pre and post-test study design involving primary school teachers in diverse schools with 252 teachers representing 3 distinct schools were chosen for this study. The findings showed that 22% of the teachers had an average level of knowledge of learning disabilities while 76% of the subjects had a low average level. Of 18 males,88% had little to no understanding of learning problems. The subjects' overall mean knowledge score on the pre-test was 9.67 (SD 4.18), while their overall mean knowledge score on the post-test was 17. (SD 3.53). The mean total knowledge score for elementary school teachers working in government schools on the LD was 8.45 (SD3.54), but on the post-test it was 15.68 (SD3.35). The primary school instructors at matriculation schools received an overall mean score of 8.74 on the LD pre-test (SD3.38). The post-test mean score as a whole was 16.13. (SD2.54). The elementary school teachers of CBSE schools received a total mean score of 11.83 (SD4.66) on the understanding of learning disabilities test. Yet in the follow-up test, it was 19.18 (SD3.56). According to the results of the current study, introduction of the self-instructional module, helped them in identifying students with these challenges for early intervention, their level of knowledge dramatically increased.**(35)**

A quantitative pre-experimental study was carried out to assess the knowledge and attitudes of primary school teachers in schools of Delhi regarding the effectiveness of a self-instructional module on Identification and Care of Children with Selected Learning Disabilities. Purposive sampling was used in the study's one group pre-test post-test design of 63 primary school teachers working in primary schools. The increase in the mean knowledge and attitude score shows that there was a significant difference in the knowledge and attitude of primary school teachers following the administration of the self-instruction module on identification and care of children with Selected Learning Disabilities. The 't' value at the 0.05 level of significance shows that the self-instructional module on identifying and caring for children with specific learning disabilities was successful in strengthening teachers' knowledge and attitudes which came to the conclusion that the self-instructional module was successful in improving primary school teachers' attitudes about identification and care of children with Selected Learning Disabilities.[(36)]

A was carried out to evaluate the impact of an Instructional Training Package (ITP) on primary school teachers' level of knowledge and practice in terms of identifying and treating children with specific learning disabilities (SLD) in specific schools, Thrissur. Where a one-group pre-test, post-test, pre-experimental design was used. Non-probability purposive sampling was used to choose 30 samples, The results showed that the estimated paired 't' ($t29 = 24.72$, $P<0.01$), the total mean post-test knowledge score (27.53 ± 1.306) was significantly higher than the mean pre-test score (16.90 ± 2.339). The average mean post-test practice score (19.73 ± 0.740) was substantially higher than the average pre-test score (13.77 ± 2.967) according to computed paired 't' ($t29 = 10.73$, $P<0.01$).The pre-test practice score of the samples showed a highly significant association ($P<0.05$) with education ($\chi2 = 21.690$,

P<0.01), years of experience ($\chi 2 = 13.970$, P<0.01), and knowledge on how to help students who have learning challenges ($\chi 2 = 30$, P<0.01)).The study's findings suggest that in-service training and education for primary school teachers should be conducted on a regular basis and that ITP is an excellent technique for raising awareness among these educators of the identification and treatment of SLD in children.[37]

This study sought to ascertain the efficacy of a training programme based on Erikson's theory in fostering independence among Jordanian students with learning difficulties who were enrolled in resource rooms at public elementary schools in Mafraq City made up the study population. The resource room instructor recognized 60 male and female students of third, fourth, fifth, and sixth grade students from Mafraq City schools as having learning disabilities (LDs) for the research sample. the sample was divided evenly into two experimental and control groups. The study's findings showed that the experimental and control groups' mean scores on the post-test for independent skills varied statistically significantly, with the difference favouring the experimental group (P<0.05). Due to the interaction between gender and group variables on the post-test, the results likewise showed no statistically significant differences at (P<0.05)) in independence skills. On the follow-up test, there were statistically significant differences in the levels of independence between the experimental and control groups, and the differences were in favour of the experimental group. Given the findings of this study, it is suggested that by providing resource room teachers with intense, ongoing training programmes, educational workshops, and certification to enable them to effectively help kids with LDs gain independence skills. [38]

Research was carried out at the Omani and Arab levels to examine the effectiveness of online, in-service teacher training programmes with a non-equivalent control group design A total of 60 Omani teachers took part in the study using a convenience sampling methodology. The outcomes demonstrated that there were no statistically significant differences in each domain or across the total for SAS., with t = (0.471, 0.181, 0.038, 0.087), and P = (0.639, 0.857, 0.970, 0.931) accordingly. It also showed that there were significant differences in instructors' awareness, with t = (6.913, 5.775, 4.921, and 6.272, respectively; P = (0.01) in all dimensions and the total. This indicates that both groups are equivalent to the pre-test of the SAS. These findings suggested that the experimental group's professors had a considerable advantage in the SAS post-test. Chi-square indicates that the impact of the training module was high; X^2 =0.62, P= (0.01), demonstrating that this programme improved the knowledge awareness, competence awareness, and personal awareness of instructors in the GSLD category. **(39)**

Pre-experimental research was done on the efficacy of a structured training programme for primary school teachers regarding their knowledge of children with learning problems at a few selected schools in Chennai with a non-randomized, single group pre-test and post-test design. The 40 samples were chosen using the purposeful sample technique. The study's findings showed that 90% of primary school teachers scored poorly on the pre-test when it came to their awareness of learning disabilities, whereas 10% scored moderately well. In the post-test, however, 7.5% had a moderate level of knowledge, and 92.5% had an appropriate level of knowledge. The post-test mean awareness of learning difficulties score was 14.2, which showed a substantial improvement from the pre-test mean awareness score of 11.05. There was a string association between primary school teachers' knowledge of

learning disabilities. According to the study, there is a statistically significant association between the year of experience and married status and primary school teachers' awareness of learning difficulties. The study suggested that it is vital to educate parents and teachers about common misconceptions about learning difficulties using a prepared teaching programme. **(40)**

Pre-experimental study was conducted on effectiveness of planned teaching programme on knowledge regarding specific learning disabilities of school going children with one group pre-test and post-test research design where 60 primary school teachers participated in the study at St. Mary Champion High School in Indore, Madhya Pradesh, India. The results showed that on the pre-test, 46 (76.7%) school teachers performed at a moderately competent level, compared to 14 (23.3%) who received an insufficient rating. 02 (3.3%) school teachers scored fairly adequate on the post-test, while the remaining 58 (96.7%) instructors scored adequately on it. The mean score for knowledge prior to the planned teaching programme was 13.15, but the mean score following the post-test was 24.83. It was discovered that the knowledge score difference between the pre-test and post-test was statistically significant ('t' value = -21.524, df=59, p value = 0.001, Significant). Demographic factors and pre-test knowledge grade did not show any statistically significant correlation. Based on the observations, the study came to the conclusion that the intervention was extremely beneficial in raising the primary school teacher's knowledge score regarding learning difficulties.**(41)**

A teacher-training programme on SLDs and inclusive practices was conducted in In Sri Lanka, the foregoing concerns, as well as others including instructors' negative attitudes regarding SLDs, highlighted institutional challenges such rigid examination system and unfavourable socio-cultural ideologies regarding

SLDs. The results of the three teacher training programmes that are the subject of this paper's discussion show how important teachers' knowledge of inclusion is to putting inclusive practices into practice in educational settings. Regular teacher training programmes should be held to strengthen their understanding of SLDs and inclusiveness. The educational systems must not only prepare teachers, but also emphasize the value of inclusion and offer them the necessary support. Eliminating widespread misconceptions about inclusion and learning challenges may be accomplished by including the greater community in the implementation of inclusive practices at the school level.[(42)]

Efficacy of on School Teachers' Knowledge and Attitudes Regarding the Identifying and Managing of Children with Specific Learning Disabilities (SPLDs) by administering pre-tests prior to the intervention and post-tests following the intervention on days seven and sixty. One district was chosen from each Zone (East, West, North, and South) of Odisha. A sample of 269 aspiring instructors for public schools was chosen. The pre-test knowledge mean score was 2.77, with a standard deviation (SD) of 2.224; the post-test-I on the seventh day mean was 44.48, with an SD of 0.799; and the post-test-II on the sixty-first day mean was 44.90, with an SD of 0.313. The paired differences between the pre-test and post-test-I on the seventh day of knowledge demonstrated the knowledge gained and the value was 41.71; the paired differences between the post-test on the seventh day of knowledge and on the sixty-first day of knowledge demonstrated the knowledge gained and the value was 0.42 at 0.001, the "P" value was significant. The pre-test attitude mean was 85.08, the post-test I mean was 99.18, the post-test II mean was 101.22, and the standard deviation was 4.978 at 0.001, the "P" value was significant. This demonstrated that Guidelines (self-instructional module) is useful for aspiring school teachers to

advance their understanding and outlook on the detection and management of children with SPLDs throughout time.[43]

A Systematic Review on the Impact of Various Teaching Methods on Knowledge and Attitude Regarding learning Disabilities (LD) and Attention Deficit Hyperactivity Disorder (ADHD), children among Primary School Teachers The analysis in this systematic review was conducted using meta-analysis. This search turned up 92 papers. Of them, 27 were thought to be of a better standard. Parents were not included in studies that recruited a sample of primary school instructors. Based on the analysis, it was determined that LD and ADHD were co-morbid. Children in elementary school had higher rates of both ADHD and LD, and those rates raise with age. Primary school teachers were less knowledgeable about ADHD and LD and had a less positive attitude toward them. Teaching initiatives were successful in enhancing primary school teachers' attitudes and knowledge of ADHD and LD. Primary school teachers should be made more aware of ADHD and LD through educational initiatives.[44]

An action research study was carried out with the intention of enhancing instructors' ability to manage children with learning difficulties through mentorship and instruction in teaching accommodations and adjustments. 42 normal teachers and 21 special educators from Inclusive Elementary School were used as study subjects which used a proportional sampling methodology. In Yogyakarta Special Province, Indonesia, 15 elementary schools from four districts and municipalities participated in this study. The results of this study showed that 63 instructors' knowledge and comprehension of how to deal with students who have learning difficulties had improved after training, but in a sense, teachers still require mentoring. This was demonstrated by research on teachers' aptitude for working with

special needs children, which found that 12 teachers, or 19.5% of the total, were poor, 51 teachers, or 80.95% of the total, were good, 7 teachers, or 11.11%, were good, and 56 teachers, or 88.89% were very good. The study suggested that instructors in primary schools employ adapted instructional strategies, inclusive accommodations, and hands-on help for students who have learning problems.[45]

A quasi-experimental study was done to see how well primary school teachers in a selected schools could educate themselves on the subject of learning difficulties in young children at Coimbatore by the study's sample of 60 instructors using the purposive sample strategy, The results of the experimental group's pre-test knowledge revealed that the teachers' level of knowledge was insufficient, with a mean score of 16.6 (41.50%) out of 100. Knowledge score on the post-test was 33.3 (83.25%) in the experimental group was now sufficient. The control group's mean pre-test knowledge score was 17.2 (43.00%) while its mean post-test knowledge score was 19.1 (47.75%). Comparison between the experimental and control groups. Prior to the self-instruction module, there was no significant difference between the experimental and control groups. However, after the module, there was a significant difference between the two groups. After the self-instruction module was given to teachers, their awareness of learning difficulties increased by over 41.75%. shows the efficiency of self-instructional modules for learning difficulties compared to control groups. The student independent 't' test and chi square results indicate a stronger association between post-test knowledge score and some demographic factors in the experimental group, such as instructor age and experience, than in the control group. The study concluded that the teacher's expertise was greatly advanced by the self-educational module on learning impairments.[46]

The efficacy of a training programme built around instructional skills in developing these competencies for teachers in Jordan's special education resource rooms was investigated with a total of 50 teachers made up the study's sample. According to the (ANOVA) results, the experimental group performed significantly better than the control group on both the post-observation scale and the post-achievement test, between the two groups, with statistically significant variations. Results from a qualitative data analysis using interview techniques revealed that instructors in the experimental group considerably outperformed those in the control group in terms of enhancing their both personal and work-related competencies.[(47)]

A quasi-experimental research study was done to evaluate the impact of a structured training programme on teacher trainees' knowledge and perceptions of children with learning difficulties. Where 32 teacher trainees enrolled in the Diploma in Education (D.Ed.) programme participated in this study with a single group pre-test, post-test without a control group was used. The sampling approach employed was the census method. The students participate in an organized instructional programme for five sessions. Results showed that there was a substantial difference in pre- and post-test scores on various knowledge and opinion questionnaire dimensions ($P<0.001$), demonstrating the efficacy of structured teaching programmes. was successful in modifying the knowledge and viewpoint of teacher trainees.[(48)]

A study was conducted on support strategies teachers use to assist with learners with learning disabilities in public primary schools in trans-nzoia county, Kenya, by means of a stratified random sampling procedure, 351 teachers were chosen as the study's sample size. Analysis of the data showed that the majority of teachers (64.7%) consistently helped students with learning difficulties in their

classrooms. Teachers (64.4%) helped students with learning difficulties by arranging the classroom to meet their requirements, so encouraging successful inclusion in the classroom. Findings also revealed that only 58.6% of educators said they consistently used a variety of support tactics to instruct and assist students with LD in inclusive education. The study suggests that teachers should support these students in acquiring the assistive technology and other educational supplies they need to succeed in the classroom. **(49)**

A true experimental study was done to determine how structured teaching methods affected primary school teachers' understanding of particular learning difficulties by using true experimental pre-test - post-test control group research design. The 60 primary school teachers employed by Puducherry's government-run schools were chosen using a simple random selection technique as a sample. The results showed a highly significant difference following the execution of a structured education programme at ($P<0.001$) in knowledge regarding particular learning disorders between the experimental group and the control groups. The majority of primary school teachers have poor level of knowledge regarding specific learning disabilities. Primary school teachers' demographic traits, such as age, gender, educational level, marital status, and number of years of teaching experience, is not influenced on the level of knowledge regarding specific learning difficulties.**(50)**

Quasi-experimental research was conducted to evaluate the effect of a learning package on primary school teachers' knowledge of students with learning difficulties where 38 teachers who met the inclusion criteria were chosen for the study, which was carried out in a primary school in Bhainyawala, Dehradun, using a non-probability, convenience selection technique. Results demonstrated that the mean knowledge score after the post-test (13.7 ± 3.2) was greater than the mean

knowledge score before the pre-test (5.4±2.6). The mean attitude score after the learning package (31.9±4.7) was higher than the mean attitude score before the pre-test (26.6±5.4). After the test, the average knowledge of skill scores (23.1±4.2) was greater than the average knowledge of skill scores beforehand (17.2±6.6). The knowledge, attitude, and abilities of primary school teachers had greatly improved following the post-test. Except for the association between respondents' prior knowledge and their knowledge score, socio-demographic data and pre-test knowledge, attitude, and practise scores were not associated in the current study. In accordance with the study's findings, it has been demonstrated that the Learning Package enhances primary school teachers' knowledge of learning disabilities.[(51)]

True experimental Research was carried out on "Competency Based Teacher Education (CBTE)", a training module for improving knowledge competencies for resource room teachers in Jordan, the study sample included 50 teachers. The findings showed that the means of the two groups on the accomplishment test differed between the pre-test and post-test. An adjusted mean of (M=33.15) with a standard deviation of (SD=3.41) for the control group, and (M=42.24) with a standard deviation of (SD=2.32) for the experimental group. Further, the results of the (ANCOVA) analysis showed that the experimental group was favoured on the post-achievement test, with statistically significant differences between the means of the two groups. According to the post-achievement test results, the training module was statistically responsible for statistically different adjusted mean scores between the experimental and control groups on the post-achievement test, favouring the experimental group However, the achievement test results of the experimental group showed no statistically significant differences in any of the demographic factors, including gender, specialization, qualification, and experience. The study's final

finding was that the "Jordanian Ministry of Education" could train special education teachers using the training module.[21]

II: Research on the identification, prevalence, characteristics, and types of learning disabilities in children.

A systematic review and meta-analysis were conducted using a methodical search of the electronic databases of "MEDLINE, Embase, PsycINFO, and CINHAL" where the authors compiled SLD prevalence research that were written between 1990 and 2020, a period of 30 years. The pooled prevalence of SLDs was calculated from the reported prevalence of the relevant studies using the random-effects model. The overall pooled prevalence of SLD in India, according to the random-effects meta-analysis, was 8%. (95% CI=4-11). According to the review, 8% of children up to the age of 19 have SLD. There aren't many high-quality population-based epidemiological research on this subject that follow sound methodology so large-scale population-based studies that make use of the proper screening and diagnostic technologies are required in India.[25]

A descriptive survey was conducted with a quantitative, exploratory research approach to determine the prevalence of specific LDs among elementary learners. According to the analysis of the questionnaire completed by 100 instructors where 784 or 26% of the 2934 students were at risk of acquiring learning disabilities. According to the study, out of 784 primary school students who were deemed at risk, 54.9% were found to have dyslexia, 23.9% to have dysgraphia, and 21.1% to have dyscalculia. Based on the findings, 26% of primary school students are at risk for developing certain learning difficulties. Teachers were asked to seek additional

medical assistance if their students were found to be at risk of acquiring learning disabilities.[52]

This study was done to find the prevalence of SLD and its determinants among school-aged children from the fourth grade to the seventh grade in the Ernakulam district of Kerala, India where multistage stratified cluster sampling was used. The survey found that 16.49% of respondents had SLD (95% CI =14.59-18.37). Reading, written expression, and maths impairment were all prevalent to varying degrees (12.57%, 15.6%, and 9.93%, respectively). Among participants with SLD (n = 244), 75% had impairment in both reading and writing, 54.92% had impairment in both writing and mathematics, 44.67% had impairment in reading, writing, and mathematics, and 9.43% had impairment in writing only and 4.1% had only a math impairment. Male gender, low birth weight, the prevalence of developmental delay, a family history of poor academic performance, and the course syllabus were all independently linked with SLD, according to a binary logistic regression analysis. Moreover, the study discovered a greater frequency of SLD (16.49%) and identified some modifiable factors of SLD. It emphasizes the importance of early detection and corrective measures for children with SLD.[53]

Cross-sectional research was done to gauge the frequency of specific learning disabilities (SLD) in schools between the ages of 8 and 12 as well as the risk variables related to SLD. A total of 800 children from the third to sixth standard were included in this study, based on the information, the final 10% of underachieving children from each class were selected. According to the survey, 23 children had SLD overall, with a prevalence of 2.87%. Combination types were most prevalent (dyslexia and dyscalculia). The prevalence of reading impairment was 2.5%, that of writing disability was found to be around 1.37%, and that of arithmetic

disability was determined to be around 2.25%. The average age of the students with SLD was 9.8. SLD was diagnosed in class IV pupils most frequently (P=0.023). Prematurity history was discovered in 11 SLD students (48%), low birth weight in 13 SLD students (57%), and head trauma in 13 SLD students (57%) with SLD. Seven SLD students were diagnosed with attention-deficit hyperactivity disorder (ADHD) and this finding was highly significant at (P<0.001). Last but not least, the incidence of SLD was 2.87%, with combination type being the most prevalent type. Prematurity, low birth weight, and a history of head trauma were the antenatal risk factors linked to SLD. Attention-deficit hyperactivity disorder was the most prevalent co-occurring disorder with SLD.[(54)]

A study was conducted out to investigate the potential prevalence of Specific Learning Disorder (SLD). The 2,174 children who attended primary schools in Edirne City's second, third, and fourth grades made up the study's sample. These children's teachers and parents were given the Specific Learning Difficulties Symptom Scale, the Learning Disabilities Symptoms Checklist (teacher and parent forms), In accordance with the study, the likely prevalence of SLD was 13.6%, with 17% of males and 10.4% of girls being affected. 3.6% of students had reading disability, 6.9% had writing impairment, and 6.5% had arithmetic impairment. Consanguineous marriages, low income, and a history of neonatal jaundice were found to be risks for SLD, while being born through caesarean section, having a delayed walking development, and having a history of neonatal jaundice were found to be risks for mathematic impairment. Parental learning impairments were a risk factor for the development of SLD and its subtypes. In this investigation, it was discovered that 13.6% of cases had likely SLD findings. The prevalence of SLD, which includes the academic subjects of reading, writing, and mathematics among

children of school age from various languages and cultures, is listed at 5%-15% in the DSM-5. After learning about SLD findings, an educational strategy and early intervention therapy will be used to lessen any difficulties this disorder may cause during the preschool years.[55]

A cross-sectional study was conducted to identify learning disability in children with poor school performance. A total of 300 students with low academic performance were chosen by their class instructor for a study that was done at Kannur Medical College, Anjarakandy, over a one-year period from July 2013 to June 2014. The findings showed that 106 of the 300 students with poor academic performance had parental perceptions of learning issues. 39 (13%) students had learning disabilities after the assessment. Low birth weight, preterm delivery, language, social, and motor developmental delays have all been associated. Additionally, an association between attention deficit hyperactivity disorder and learning disabilities was discovered. The investigation came to the conclusion that children should be screened for learning disabilities in kindergarten so that children can be identified and corrective action can be taken.[56]

A study on assessment of prevalence rates and gender ratios for both isolated and comorbid learning problems with a representative sample of 1633 German-speaking students in third and fourth grades. Regarding their relationship with arithmetic issues, reading and spelling deficiencies were different: Spelling difficulties co-occurred with math difficulties more frequently than reading difficulties. Additionally, comorbidity rates for maths and reading reduced when stronger deficit criteria were used, but they remained high for maths and spelling regardless of the deficit criterion used. These results imply that in terms of gender ratios, more boys than girls displayed weaknesses in spelling, whereas more girls had

problems with mathematics. For individual reading problems and the combination of all three learning disabilities, there were no gender differences found. The study's findings indicated that diverse learning domains must be taken into account during evaluation because approximately half of children with a specific learning disability also struggle in other learning domains.[57]

A qualitative study on the behaviour modification of children with learning disabilities was done to understand the children with learning disabilities as well as the various methods for changing the behaviour. The data was gathered from journals, books, websites, etc. The findings stated that the behaviour of children with learning disabilities can be modified by cognitive training, clinical or medical approaches, psychoanalysis, and cognitive behaviour modification and metacognitive strategy instruction. The cognitive training strategy for learning challenged children can be applied by using visual displays, graphic organizers, and mnemonic devices multimodal approach, individualized instructional method. The utilization of CD-ROM technology and Computer Assisted Instruction (CAI) is the greatest method for teaching learning-disabled children practical work and arithmetic abilities. To sum up Parents and teachers need to be aware of the children's learning impairments. They should acquire the skills necessary to care for, cherish, and protect these types of children.[58]

II: Studies on Assessment of Knowledge, Attitude, and Practices Among School Teachers Regarding Learning Disabilities in Children:

A mixed-methods study was conducted to assess the understanding of dyslexia among primary school teachers working for the government. South Africa's Tshwane District, 30 purposefully chosen primary school teachers teaching grades

1–5 used a phenomenological design. The data revealed that just 17% of the participants had dyslexic students in their classes, 50% did not currently have such students in their classes, and 10% did not respond to the question. Additional study showed that only 07% of individuals were aware of the dyslexia symptoms, while 93% claimed they were unaware or unsure. primary school instructors have a fundamental understanding of dyslexia. It was noticed that many of them were employing few tactics in their classes to instruct dyslexic students. On the basis of the results, recommendations were made for improvement in terms of understanding how to instruct students with dyslexia in the classroom.[(59)]

Descriptive cross-sectional research was carried out on primary school teachers' knowledge of learning difficulties in children in a few schools in Jodhpur, Rajasthan, India. Using the complete enumeration sampling technique, a sample of 70 primary school teachers from Class 1st to Class 5th from four chosen schools in Jodhpur was taken. Based on study's findings, most primary school instructors (80%) had average understanding of learning difficulties, while just 2.86% had good knowledge. The average knowledge of learning disorders was 16.06 and 3.157 standard deviations. Additionally, there is no significant association between primary school teachers' knowledge and their socio-demographic characteristics, as a result, it is crucial to offer education concerning learning difficulties in children to both teachers and parents of children with learning disabilities. This can be done by implementing a mandatory curriculum.[(60)]

Assessment of Public-School Teachers' Knowledge and Awareness of Learning Disabilities in Children was done as part of an institutionally based cross sectional study in the Dharmapuri District of Tamil Nadu among 200 school teachers According to the study's findings, the majority of teachers (45%) had a moderate

level of knowledge of children with learning difficulties, while a much higher percentage of participants (33.5%) had adequate knowledge and the remaining participants (21.5%) had limited knowledge. The majority of participants (73.5%) were aware that children can have learning disabilities. A child exhibiting signs of a learning disability has been observed by the majority of the 200 school teachers (73%). The majority of them (18.5%) had followed it on social media, in the news, and on television, while only 6% had studied it as part of their curriculum. Statistically significant association was found between knowledge levels and the teachers' educational background ($P<0.001$) and experience ($P< 0.05$). In light of the findings, it is imperative to disseminate awareness and information among teachers regarding the learning difficulties that children experience. Therefore, this subject ought to be covered in teacher training programmes curricula.[(61)]

A study was conducted to determine how knowledgeable primary school instructors were about learning disorders in Telangana's government schools. Employing the Convenient Sampling Technique, 60 primary school teachers in the Hyderabad (24) and Rangareddy (36) districts of Telangana were recruited for an ex-post Facto study. According to the survey, 36% of respondents were between the ages of 36 and 40, and 53% of them were male teachers. The bulk of responders (90%) were permanent personnel, maximal 47% had experience of 10 to 15 years, and (52%) had a B. ED and 38% of teachers had minimal understanding, while 55% had just fairly competent knowledge. 10% of the participants had sufficient understanding of learning impairments. The study found that there is a need to increase primary school teachers' understanding of LD and to strengthen their fundamental abilities to identify learning disabilities as soon as possible through an educational programme.[(62)]

Retrospective audit studies have been conducted on school teachers in sub-urban South India's towards attitudes and practices regarding children with intellectual disabilities as well as their knowledge of inclusive education. A surveillance survey was completed by 96 willing school teachers. Based on the study's findings, attitudes toward children with intellectual disabilities were generally positive. The mean total attitude score had a normal distribution and was 77.1 (SD: 9.58). Between 40 and 50 percent were aware of intellectual disability and believed it was caused by biological factors. 92 percent of respondents agreed that a child with an intellectual handicap has to be educated and trained gradually. Results of classroom management were unreliable in actual practice These data imply a broad favourable attitude toward schooling for those with intellectual disabilities. This study, however, also emphasizes the need for more thorough training programmes for inclusive education.[(63)]

A descriptive electronic survey study was conducted on evaluating primary school teachers' familiarity with particular learning disabilities in the Kingdom of Saudi Arabia. Applying a convenience sampling method, 902 primary private and public-school teachers from 78 schools in various locations of Saudi Arabia were chosen as the sample. The results revealed that the majority of primary school teachers, 582 (64.52%), had just average and 320 (35.48%) had inadequate knowledge of specific learning disorders, according to the survey. None has adequate knowledge about learning disabilities. As a result, participants' level of knowledge is statistically significantly impacted by teachers' breadth of expertise. The findings of the regression analysis reveal that all six aspects of knowledge had a positive and statistically significant influence of $P<0.05$ on their degree of knowledge. Gender, marital status, education, school type, class participation in

teaching, working with counsellors, and identification of children with learning difficulties are determined to be statistically significant, according to the results, as their p-values were below the level of significance of 0.05. In relation to their degree of knowledge, other sociodemographic characteristics including age (p-value > 0.211) and years of teaching experience (p-value > 0.383) were not significant. The study found that teachers' understanding of learning difficulties is inadequate because no courses on the topic were offered throughout their academic preparation. Therefore, education policymakers should set up suitable teacher training or structured learning programmes on the concepts, assessment, diagnosis, and identification of learning disabilities for such teachers.[(64)]

Cross-sectional research was done in the Thiruvallur District on primary school teachers' perceptions and knowledge of learning disabilities in children. A questionnaire was given to 138 instructors in 6 schools. The findings showed that 130 teachers (94.20%) are familiar with the term learning difficulties. There were about 90 teachers (65.21%) who were aware of the many sorts of learning disabilities. The teacher's credentials and their knowledge and practice of learning disabilities are positively correlated. The relationship between a teacher's experience and their practice is significant. About 107 teachers (77.53%) believed that the child's ability to learn was improved by proper training programmes such small group communication, video reports, audio records, and computer-based activities. Ultimately, it is necessary to increase instructors' knowledge and fundamental ability to identify students with learning difficulties by teaching the themes in teacher-training programmes. Therefore, more workshops can be held throughout each academic year to keep up with research on these conditions.[(65)]

Assessment of primary school teachers' understanding of learning disabilities was done using cross-sectional research. Using a convenient sample approach, 709 government primary school teachers from 21 schools were chosen for the study, The results of the poll revealed that while the majority of instructors have some awareness of the origins, symptoms, and treatments of learning disabilities, their understanding of these issues is woefully inadequate for practical application in the classroom. According to the study, primary school teachers need to learn more about learning disabilities (LD) and develop the fundamental skills necessary to identify learning disabilities early on which is crucial for managing these children who struggle in the classroom.[(66)]

A study was conducted to evaluate primary school teachers' attitudes and understanding regarding the inclusive education of children with particular learning difficulties. School teachers of 180 from primary schools made up the sample. The findings indicated that while 20% of participants had low levels of knowledge and 17% of respondents had high levels of knowledge, 63% of participants had average levels of knowledge. and 51% of the participants have a positive attitude toward the inclusive education of children with particular learning difficulties, compared to 49.4% of the respondents who had a negative opinion. In terms of percentage, there is no discernible difference between the positive and negative attitudes. The study discovered a strong relationship between teachers attitudes toward inclusive education and their knowledge of the subject. It is advised that the department of teacher preparation include the idea of inclusive education in the curriculum. So that the aspiring teachers get the chance to work in inclusive classrooms and manage the children with particular learning difficulties in an inclusive environment.[(67)]

This study intends to illustrate how instructors in an inclusive elementary school in Yogyakarta Special Region, Indonesia, deal with children who have learning impairments. This study included 30 instructors who participated in focus groups. The findings indicated that teachers are still lacking the ability to recognize children with learning difficulties from those who are experiencing learning challenges. Learning disabilities with slow learners, minor mental retardation were all detected among students in inclusive primary schools. Moreover, it has not been fully understood by the teachers that there are children unique learning challenges among children with learning difficulties. Therefore, it is more probable that accommodations will be made by changing the curriculum, and teachers may change the conversion method based on their own opinions.**(68)**

Analytic comparative cross-sectional Research was conducted on the teachers' knowledge, attitudes, and reported methods for identifying and assisting students with learning difficulties. Governmental pre-schools and primary schools in the rural AL-Hayatem village and the urban El-Mehalla El- Koubra city undertook, a suitable sample of 476 teachers. Nearly half (40.7% and 46%, respectively) of the sample under study in urban and rural areas were between the ages of 34 and 43, with mean ages of (40.312$\pm$2 7.58) and (38.714$\pm$3 7.71), respectively. Males made up nearly half (49% in cities and 56.1% in rural areas) of the study sample and more than half (56.1%) in rural areas. Subjects from rural and urban areas differed significantly in terms of their knowledge and attitudes. Scores ($P<0.05$). There was a favourable link between the sample's reported practices and attitudes and total knowledge score regarding learning challenges. Due to the fact that there was a positive association between the study sample's age, years of experience, and overall score of reported practices, while there was a negative correlation with the sample's

overall score of knowledge and attitude regarding learning challenges. In order to help new and in-service teachers' orientation seminars about these issues should be held in schools.[69]

A longitudinal study was conducted in Western Australia with the goal of identifying the variables that influence primary school teachers' views on include students with all disabilities in mainstream classrooms. In this study,74 primary school teachers from 74 schools were surveyed which included 250 conventional primary schools on the Department of Education and Training's list. The results showed Age, gender, teaching self-efficacy, and training, together with four teacher characteristics, explained 42% of the variation in teachers' attitudes toward incorporating students with disabilities (F = 4.37, P<.001). The attitude of male teachers toward inclusion was more unfavorable (Beta = -.26, P =.04). Compared to the 35–55-year-old subgroup, teachers over the age of 55 had higher negative attitudes about inclusion (Beta = -.55, P =.002). When it came to including students with disabilities, teachers who had low levels of self-efficacy in their teaching abilities were more likely to have this attitude (Beta = -.38, P =.003). Positive attitudes toward inclusion were maintained by teachers who claimed to have training in instructing students with disabilities (Beta =.29, P =.032). According to findings, poor attitudes toward inclusion were linked to teachers' lack of confidence in their ability to teach students with special needs. The capability of teachers to alter their teaching methods appears to be significantly influenced by their level of knowledge.[70]

A cross-sectional study was conducted to measure teachers' perceptions of learning disorder in Chandigarh's urban, rural, and slum districts of India. A proportional sample approach, was used to pick teachers from 20 randomly chosen

schools out of 103 schools in the Union Territory. Purposive sampling was accustomed to identify 80 teachers of the third and fourth grades in these schools. Out of them 87.5% were women and 57.5% had more than five years of experience as teachers. Of these, 56.3% believed they were aware of learning disabilities. 43.8% of teachers supported educating such children in special schools, while 36.3% supported integrating them into regular classrooms. 67.5% of instructors believed they did encounter children with LD at the school. It's interesting to note that more than 35% of educators were open to receiving specialized training for LD intervention. They believe that creating specific facilities or enrolling these children in special schools would provide the necessary interventions.[(71)]

An observational study was done to assess the psychometric qualities of primary school teachers' understanding of particular learning disorders where 34 primary school teachers from two separate schools in Puducherry town participated in the study The findings indicated that the mean total score for this sample was 14.50, and the average item score for the 50 items was 9.90, and a four was added for good measure. The dependability of Cronbach's alpha was 0.89. The facility factor analysis score was 0.26, and the overall discrimination index was + 0.2. This novel screening questionnaire's validation in an Indian context proved successful. It is important to note that early diagnosis of SLD is optimum for treating it, and in that context, the questionnaire serves the objective of educating instructors on how to screen for or at least be able to distinguish SLD from other learning issues.[(72)]

Descriptive Research was conducted on teachers' perceptions of students who struggled with reading and writing in Mauritius's mainstream government elementary schools. A total of 100 teachers from randomly chosen schools in Zone 2, a region of Mauritius having both urban and rural schools. The results demonstrate

that almost all participants had encountered learners with reading and writing difficulties (RWD), although they had little training in RWD or specific learning disorders. Teacher's perspectives on the causes, identification, and intervention of RWD were thus insufficient. The vast majority of teachers said that inclusive education was bad for students with RWD and that special education schools provided the greatest learning environment for those students. The same number of respondents (81.8%) did, however, concur that thorough teacher retraining will make it easier to integrate students with RWD into regular classrooms. The majority of participants (64.3%) were confidence in their ability to recognize students with RWD, but more (67.7%) stated that they lacked the knowledge necessary to assist them. The fact that 77.7% of participants thought a learner with RWD or a particular learning impairment could be detected before the child turned eight indicates a positive outcome. The study's findings, taken together, highlight the necessity for mainstream primary school teachers to have ongoing training in RWD and inclusive education, as well as for these subjects to be covered in future teachers' curricula.[(73)]

A case-control study was conducted to determine the impact of primary school teachers' knowledge and attitudes regarding the symptoms and signs of learning difficulties on the referral of children from Ahvaz City, Iran, to speech therapy facilities. 165 elementary school teachers in Ahvaz were the subject of this case-control study's approach in the academic years 2016–2017. According to the findings, there were significant differences between the case and control groups' mean total scores for teachers' knowledge of students' learning difficulties ($P<0.05$). With regard to working experience and taking part in educational seminars, teachers' awareness scores revealed a clear and significant association ($P<0.05$). The awareness score of the teachers did not, however, significantly correlate with gender

or age (P>0.05). It is advised that teachers take part in workshops frequently to stay current on this subject.[74]

A cross-sectional study comprising a descriptive survey was carried out (LD) to determine how capable preschool teachers are at spotting children who may have any learning difficulties. The results showed that teachers' proficiency in recognizing children at risk is only moderately high. It was discovered that the majority of general preschool teachers lack or have just rudimentary knowledge on how to recognize children who are at risk for learning disabilities. The results also demonstrate a considerable disparity in abilities between teachers with various degrees of education. Finally, it was discovered that instructors' experience does not add to their understanding of identifying children at risk for learning disabilities.[75]

The aforementioned literature study makes recommendations for the creation and implementation of various training modules and instructional programmes for school instructors on learning difficulties in children in order to enhance their understanding, perspective, and performance. "The Competency Based Teacher Education (CBTE)" Training Module was developed and implemented with the assistance of the literature study. The study of the literature provides justification for the evaluation of the "Competency Based Teacher Education (CBTE) Training Module on Knowledge, Attitude and Practices (KAP) of School Teachers on Learning Disabilities in Children in Selected Schools at Kolar District".

The overview of the literature based on the sub-headings was the focus of this chapter. It has aided the researcher in comprehending the implications of the problem and in analyzing the gaps from earlier studies, which has also aided in structuring the current study.

METHODOLOGY

CHAPTER-IV

METHODOLOGY

A research methodology is always regarded as its blueprint. It is described as a group of procedures, approaches, and resources used in the research project and also describes a methodical approach to of carrying out specific activities. This chapter covers the research approach, design of the study, variables of study, setting, population, sample, sample size, and sampling procedure, process for developing and describing the tool, interpretation of the results, reliability and validity, pilot research, method for gathering data, method for developing and describing "competency-based teacher education (CBTE)", method for gathering data, and strategy to analyze data used in the study.

RESEARCH APPROACH:

The researcher used a **quantitative with evaluative approach** in this study because it helps to explain the impact of the independent variable on the dependent variables and since the study is intended to evaluate the "Effectiveness of Competency Based Teacher Education (CBTE) Training Module on Knowledge, Attitude and Practices (KAP) of School Teachers regarding Learning Disabilities in Children in selected schools at Kolar district" by comparing the differences between pre-test and post-test scores.

RESEARCH DESIGN:

The research design adopted in this study was **Pre-Experimental Design with One Group Pre-Test Post-Test Design.**

Schematic representation of the research design is as follows,

Pre-test	Intervention	Post-test
O1	X	O2

O1: Pre-test assessment of Socio-demographic characteristics and assessment of knowledge, Attitude and practice about learning disabilities in children by using structured questionnaires.

X: "Competency Based Teacher Education (CBTE)" Training Module on Learning Disabilities in Children which includes about Learning disabilities: definition, causes, types, and methods of identification the importance of supportive interventions, teaching learning strategies, and assistive technology, Guidelines for Teachers on How to Deal with Students with Learning Disabilities Legislation and the Current Learning Disability Provisions, through the use of a power point presentation and the distribution of the teaching module to all of the study subjects by WhatsApp, email, and hard copy.

O2: After 15 days, the research group took a post-test utilising the same structured questions to gauge their knowledge, attitudes, and practises about learning disabilities in children.

VARIABLES UNDER STUDY:

Independent Variable:

The **"Competency Based Teacher Education (CBTE)" Training Module** on Learning Disabilities in Children is also known as the Independent Variable in this study.

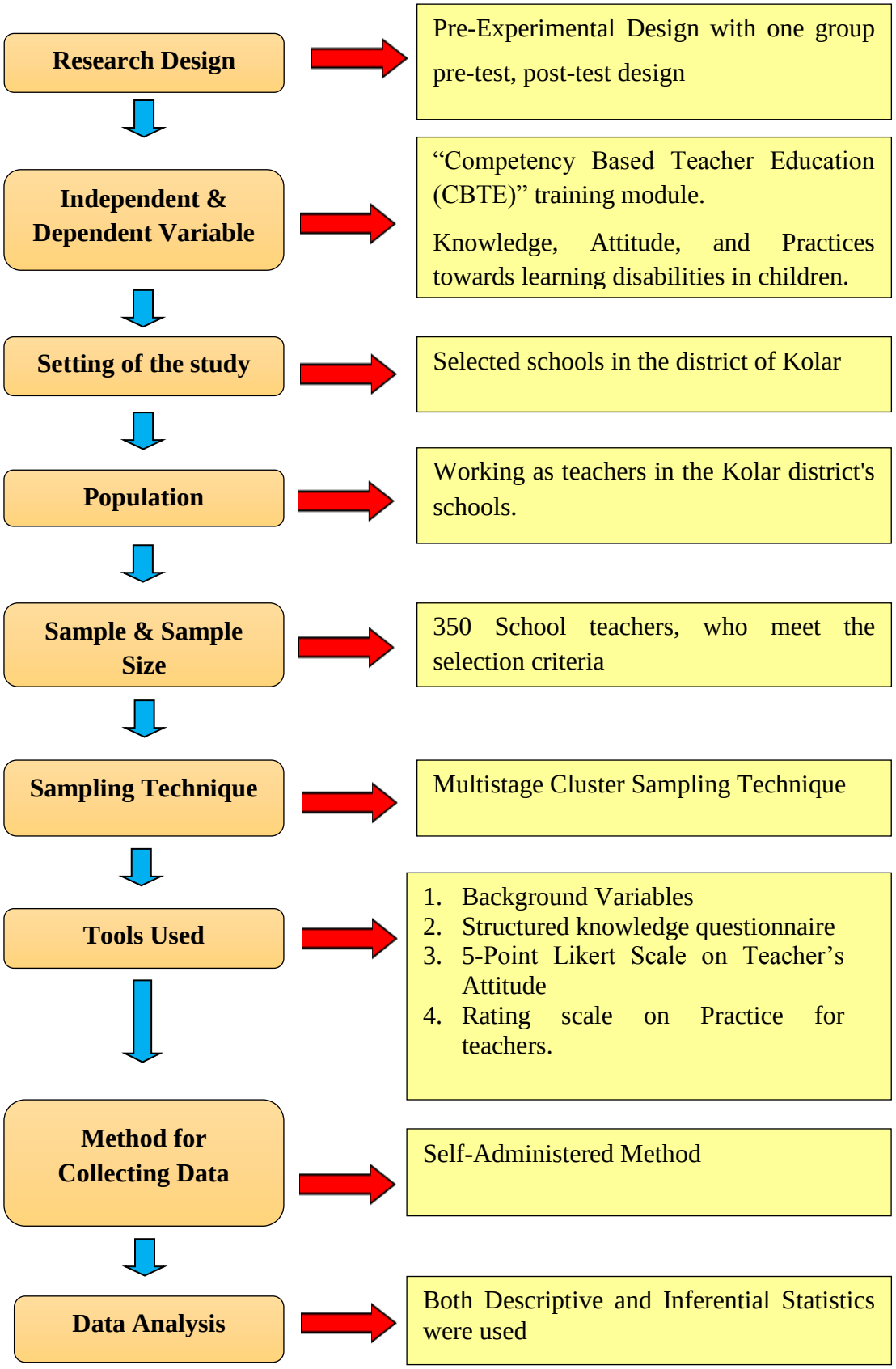


Figure:2-Schematic Representation of Research Study

Dependent Variable:

Knowledge, Attitude, and Practices Regarding Learning Disability are referred to as Dependent Variables in this study.

Attribute Variable:

In this study, "Attribute Variables" describes the typical **personal and professional traits of school teachers,** such as age, gender, educational status or qualifications, marital status, religion, place of residence, family type, nature of employment, monthly income level, school's location, teachers' years of experience, the kind of school they work at, and their position within the school and any training programme the teachers have participated in.

SETTING:

In this study, research was conducted in **selected schools at Kolar district** in the Karnataka state of India The Kolar district is further divided into 06 Talukas/Blocks namely Kolar, Mulbagal, Malur, Bangarpet, Kolar Gold Fields (KGF) and Srinivaspura.. further each block consists of various clusters totally around 145 clusters at Kolar district.

Under Kolar there are 31 clusters in it which 07 clusters were randomly selected which are Sugatur, Kamalamahalli, Vadgur, P.C.Halli, Belamaranahalli,,Rahamathanagar, and Begilhosahalli with sub-clusters or areas as urban and rural. All the government, aided and private schools are located in it where the total number of schools at Kolar block was around 581, under which the Government Schools with Department of Education is 403, Private Aided is 36, Private Unaided is 177 and Tribal/Social Welfare is 05, out of which 20 schools were

randomly selected for the data collection from the randomly allocated 07 clusters of Kolar. On an average each school was found with 20-25 teachers in private unaided schools.

The investigator utilized one class room to do assessment and provide educational training sessions for the selected teachers and also to clarify their doubts and needed motivation was given to the study subjects to utilize the module for identification of learning disabilities in children of the study group.

POPULATION:

Target Population:

In this study Target Population refers to **all school teachers who had pursued with basic degree, diploma, post-graduation and working in the schools** of Kolar district.

Accessible (Study) Population:

In this study Accessible Population refers **to all the school teachers who are working in the selected schools of Kolar.**

SAMPLE:

For the present study the samples are **School teachers who are working either in Government, Private schools or Aided schools of selected schools in Kolar** through sampling frame who fulfils the predefined inclusion criteria during the study period were regarded as the study subjects.

SAMPLE SIZE AND ITS DETERMINATION:

A total of **350 school teachers** were participated as study participants in the study referred to as the sample size. The sample size was determined by utilizing comparable previous study literature by (Chicholkar.J). Power analysis is used to determine the sample size for this study, which considers results from earlier research and a thorough examination of the literature. This is derived by employing the technique to assess the difference between two means as 14.2 and the SD or variance of 22.7 with the effect size of 0.2, with a power of the study as 95% and a predetermined significance level of 95% (CI) with a two- tailed test and 5% absolute error (d), the estimated sample size was around 320. If 10% of the sample's dropouts are taken into account, **the estimated sample size was around 350 school teachers.** The following formula is used to determine the sample size for a difference in two means:

$$\mathrm{n} = 2\,\frac{\sigma^2\left(Z_\alpha + Z_{1-\beta}\right)2}{(\mathrm{d})^2}$$

where Z_α= 95% Confidence Interval, $Z_{1-\beta}$=Power of the study as 95%,

σ^2=Average variance estimation, d =Effect Size

SAMPLING TECHNIQUE:

In this study under **Probability Sampling Method, Cluster/ Multi-Stage Sampling Technique** was adopted and found to be most robust technique in selecting the final desired samples.

In the first stage the Kolar district is dived into divided into 06 Talukas/Blocks namely Kolar, Mulbagal, Malur, Bangarpet, Kolar Gold Fields (KGF) and

Srinivaspura.. further each block consists of various clusters totally around 145 clusters at Kolar district. The second stage was under Kolar there are 31 clusters out of which 07 clusters were randomly selected which are Sugatur, Kamalamahalli, Vadgur, P.C.Halli, Belamaranahalli,,Rahamathanagar, and Begilhosahalli with sub-clusters or areas as urban and rural. All the government, aided and private schools are located in it where the total number of schools at Kolar block was around 581, under which the Government Schools with Department of Education is 403, Private Aided is 36, Private Unaided is 177 and Tribal/Social Welfare is 05, out of which 20 schools were randomly selected for the data collection from the randomly allocated 07 clusters of Kolar.in the third stage the school teachers will be selected from the above-mentioned institutions. The last stage will be that of selecting the study subjects who fulfils the inclusion criteria until the desired sample size is achieved.

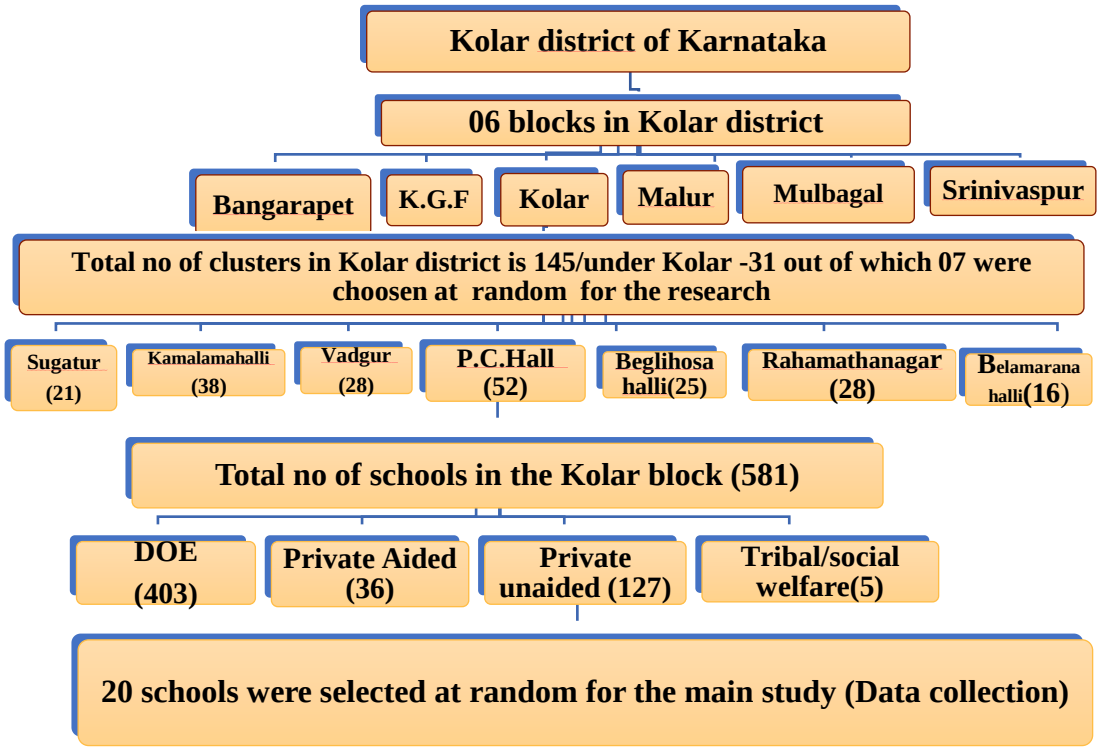


Figure:3-Flow chart of School/Study Participants Recruitment.

CRITERIA FOR SAMPLE SELECTION:

The study participants were chosen using the all-inclusive criteria listed below.

Inclusion Criteria:

1. Teachers who teach the students from 1st to7th standard.
2. Teachers who work either in Government, Aided or Private Schools.

Exclusion Criteria:

1. Teachers who have any previous experience in special schools
2. Teachers who had already worked as a counsellor.
3. Teachers who are reluctant to participate in the study

DEVELOPMENT AND DESCRIPTION OF THE TOOL:

The researcher needs to be very careful in reviewing the existing theory linked to the referring to the researcher's concept as a starting point in the tool building process. The following is a list of the procedures taken in constructing a multi-item survey or questionnaire to assess knowledge, attitudes, and practises about learning disabilities in children.

1. Using reviews of diverse literatures, search for theoretical foundations to develop items.
2. Designing each individual component and creating the blueprint.
3. The tool was developed and further development of evaluation criteria through the rating scale was done.

4. Established Content validity and construct validity of the tool through the subject experts.
5. Pretesting of the tool for reliability and validity was done.
6. Conducted an item analysis to discard the poor items based on the discriminative index.
7. Finalized the tool for the data collection process.

DETAILS OF THE TOOLS OR INSTRUMENT USED:

The sections included in it are as follows:

PART-I: Background variables of school teachers. (18 Items)

This consists of the school teachers like age, gender, marital status, religion, place of living, kind of school, school location, total number of years of experience, and residence location. group of students/handling the classes, and professional attributes of school teachers like what precise position you currently have aside from teaching, any seminars you've attended or training you've received in the field of learning difficulties, as well as any teaching experience with children who have a particular learning disability.

PART-II: Structured Questionnaires on Knowledge, Attitude and Practice.

Section-A: Structured Knowledge Questionnaire on Learning Disabilities in Children (50 MCQs).

There are 50 items total in this survey on learning disabilities, which is divided into six categories: “Information in general on learning disabilities, reasons for learning disabilities, learning disabilities' characteristics, various kinds of learning disabilities,

assessing or investigation of learning disabilities, and management of learning disabilities". Correct responses will receive a score of "1," while erroneous responses will receive a score of "0." 50 is the highest possible score. Each multiple-choice question has four possible answers.

Section-B: 5-Point Likert scale on attitude regarding teachers in taking care of children with learning disabilities at school. (50 Items).

This consists of questions about instructors' perspectives or opinions regarding learning difficulties, as well as their convictions, methods, and obstacles with regard to the kids within the following headings: General views on children with learning disabilities, views on supporting children with learning disabilities, and views regarding integrated instruction and schools for children with learning disabilities. Each response will be considered a valid one in this context; there are no incorrect replies. Strongly Agree (SA), Disagree (D), Neutral (N), Agree (A), and Strongly Disagree are the responses' levels of agreement (SD).

Section-C: Rating scale on practice towards management of children with learning disabilities in classroom at school under inclusive education. (40 Items).

This consists of inquiries on various assessment procedures or training sessions, corrective techniques, and support systems that teachers have employed with students who experience learning difficulties, like a teacher's personal qualities or practises, a teacher's preparation for planning and evaluating a class, a classroom's adaptation to a conducive environment, a teacher's partnership with pupils in a classroom or school, or a teacher's positive teacher-parent relationships with help

from the administration.. The rating scale's response is given as follows: 0-Never, 1-Seldom, 2-Sometimes, 3-Usually, 4-Always.

BLUEPRINT OF THE TOOL:

Area wise	**Knowledge (K)**	**Understand (U)**	**Application (A)**	**Skill (S)**
Structured Knowledge Questionnaire:				
General Information	02	04	-	-
Causes	02	02	01	-
Characteristics	02	03	03	-
Types	07	08	03	-
Testing/ Investigations	-	02	01	02
Management	02	02	02	02
Total	**15**	**21**	**10**	**04**
Attitude Questionnaire:				
General Attitude about LD	03	10	07	-
Attitude in helping children LD	02	06	05	02
Attitude about inclusive Education	05	05	05	-
Total	**10**	**21**	**17**	**02**
Practice Questionnaire:				
Personal Characteristics or practices of Teacher	02	03	04	01
Teachers Preparation,	01	01	02	04

Planning and Evaluation in Classroom Management				
Classroom Adaptation with conductive environment	02	02	04	04
Teacher collaboration with students in class room	01	02	01	01
Positive teachers-parent's liaisons with administrative support	01	01	02	01
Total	**07**	**09**	**13**	**11**

INTERPRETATION OF SCORE:

Section-A: Structured Knowledge Questionnaire on Learning Disability:

It has 50 different items. Correct responses will receive a grade of "1," while erroneous responses will receive a value of "0." 50 is the highest possible score. Each multiple-choice question has four possible answers. The interpretation of the depth of knowledge is:

Sl. No	Level of Knowledge	Score Range
1.	Inadequate Knowledge	≤50% (≤ 25)
2.	Moderately Adequate Knowledge	51-75% (26-38)
3.	Adequate Knowledge	>75% (39-50)

Section-B: 5-point Likert scale measuring the attitude of teachers toward children with learning disabilities:

As stated by the 5-Point Likert Scale, the highest score will be 250, and the minimum score will be 50. Scores vary from (1,2,3,4,5) Each response will be considered a valid one in this scenario; there are no incorrect replies. "**Strongly Agree (SA)", "Disagree (D)", "Neutral (N)", "Agree (A)", and "Strongly Disagree (SD)"** are the responses' levels of agreement. The result is translated as

Sl. No	**Level/Quality of Attitude**	**Score Range**
1.	Highly Favorable Attitude	81-100% (201-250)
2.	Favorable Attitude	61-80% (151-200)
3.	Moderately Favorable Attitude	41-60% (101-150)
4.	Unfavorable Attitude	20-40% (50-100)

Section-C: Practice Questionnaire with Rating Scale:

The maximum score is 160, and the lowest score is 0, which could be classified as **"Never," "Rarely," "Sometimes," "Usually," and "Always."** The score is interpreted on a rating scale from 0-Never, 1-Seldom, 2-Sometimes, 3-Usually, and 4-Always.

Sl. No	**Level of Practice**	**Score Range**
1.	Poor Practice (Below Average)	0-25% (0-40)
2.	Satisfactory Practice (Average)	26-50% (41-80)
3.	Good Practice	51-75% (81-120)
4.	Excellent Practice	75-100% (121-160)

DEVELOPMENT OF CBTE TRAINING MODULE:

A training module is a part of a course that focuses on a particular purpose and is created to instruct on a particular subject. Based on a review of the research, discussion, and advice from experts, a Competency Based Teacher Education (CBTE) Training Module for School Teachers on Learning Disabilities in Children was created. The content was also illustrated appropriately. Every module function as a chapter in a book, introducing the next section of content. When taken as a whole, each module has an acceptable level of knowledge and competency as well as all the necessary educational components. The following procedures were followed in developing the Competency Based Teacher Education (CBTE) Training Module:

1. Preparation of the contents according to the sequence of the topic as a first draft.
2. Content validity on the module by the experts.
3. Finalization of the module by incorporating the needed corrections from the experts.
4. Incorporating the contents in power point presentation for the delivery of information to the school teachers.

The module consists of the following seven chapters/units:

Unit 1: Understanding Learning Disabilities

Unit 2: Concept, Characteristics and Causes of Learning Disabilities

Unit 3: Types of Learning Disabilities and its Identification.

Unit 4: Teaching Learning Strategies for Children with Learning Disabilities.

Unit 5: Significance of Supportive Interventions and Assistive Technology.

Unit 6: Role and Guidelines for Teachers in Handling Children with Learning Disabilities.

Unit 7: Legislation and the Current Provisions for Learning Disability

ESTABLISHING CONTENT VALIDITY AND RELIABILITY OF THE TOOL:

Validity:

Around 19 experts were consulted for validation of the drafted data collection tools/instruments with Competency Based Teacher Education (CBTE) Training Module for School Teachers on Learning Disabilities in Children, along with the statement of the problem, objectives, operational definitions, blue print, and criteria rating scale.

Out of 19 experts in total, 12 of whom were nursing experts in the fields of paediatric and psychiatric nursing. The other experts were paediatricians, psychiatrists, educationalists, statisticians, social workers, and counsellor/psychologists. Experts recommended making changes to a few of the questionnaire's items. The tool and training module were revised and polished in accordance with the expert's recommendations and after consulting with the research supervisor.

Reliability:

In order to determine the clarity of the items and the time needed to complete the questionnaire, 15 school teachers were given the validated tools as part of a pre-test.

All of the items had obvious appropriate responses, and it had taken the subjects roughly an hour to complete the questionnaires. The tool's stability was examined using the test-retest method, and the Knowledge Questionnaire's Karl Pearson's coefficient (r) value was 0.97, the Likert Scale for Attitude was 0.99, and the Rating Scale for Practice was 0.91. which indicated that the range score for the reliability coefficient was very dependable; as a result, the tools were determined to be practicable and at an acceptable level.

Item analysis:

To determine the effectiveness of each test item by examining the subject's response to the item, item analysis was done for the structured knowledge questionnaires on learning disabilities along with the reliability test. The difficulty value index (D.V.) was estimated for all the questions and interpreted appropriately. Only a small number of questions were determined to be challenging, and those questions were changed. For those items to have the necessary level of difficulty and discrimination index, the language has to be streamlined.

ETHICAL CONSIDERATION:

All ethical guidelines were followed in the conduct of this investigation. Official ethical clearance was acquired from the **Central Ethics Committee: Dated 07-07-2017, No:SDUAHER/KLR/R&D/48/2017-18.** The Principals/Head Masters/Head Misters of the chosen schools provided formal approval. The study subjects provided written informed consent and received assurances on the confidentiality of their information.

PILOT STUDY:

The pilot study, which had a sample size requirement of 35 primary school teachers, was carried out in the month of December 2020 at Mother Theresa English High School in Kolar. The concerned authorities gave the investigator official written consent. By guaranteeing the participants' privacy, informed consent was achieved. Participants' answers to structured questionnaires on knowledge, attitude, and practise were used to compile the data. The school teachers received a Competency Based Teacher Education (CBTE) Training Module for School Teachers on Learning Disabilities in Children, including lectures and group discussions accompanying the power point presentation's material. The same questionnaires were used to evaluate school teachers' knowledge, attitudes, and practise 15 days later. Descriptive and inferential statistics were used to analyse the acquired data. The outcomes demonstrated that the tools were feasible and practical for achieving the goals.

METHOD OF DATA COLLECTION:

The information was gathered from selected schools of Kolar between December 2021 and March 2022 using the following sampling criteria:

Section-I:

1. The Central Ethics Committee granted formal ethical clearance, which is obtained: Number: SDUAHER/KLR/R&D/48/2017-18, dated 7/7/2017.
2. Official written consent from the relevant parties, including the principal, block or district educational officer, and headmaster/headmistress of each school, was acquired.

3. The researcher made an introduction to the study subjects. The study's objectives were given to the school teachers, along with their rights to participate or opt out.
4. Prior to the data collection, the school instructors who met the inclusion criteria were asked for their written informed consent to participate in the study. The entire investigation was conducted with ethics in mind.

Section-II:

Steps in Sampling Frame Used for Data Collection The lead investigator personally collected the data. the list of institutions from which the data was gathered.

Data Collection Schedule at the selected schools were as follows

Sl. No	Name of the School	Pre-test Date	Post-test Date	Total no. of Samples
1	Gupta International school	02/12/2021	17/12/2021	15
2	AECS Public School	04/12/2021	20/12/2021	10
3	Kor.in High School	12/02/2022	26/02/2022	15
4	St. Anne's English High School	17/01/2022	31/01/2022	15
5	Amara Jyothi High School	10/01/2022	25/01/2022	20
6	Ananda Murthy High School	27/01/2022	11/02/2022	05
7	Mahaila Samaja High School	29/01/2022	12/02/2022	15
8	Gnana Bodha Vidya Samsthe	16/02/2022	03/03/2022	14
9	New Jyothi English High School	05/02/2022	19/02/2022	13

10	Suguna International High School	08/01/2022	22/01/2022	20
11	Government Primary School	18/02/2022	04/03/2022	05
12	Indian Public School	07/02/2022	22/02/2022	30
13	Vidya Jyothi high School	07/03/2022	22/03/2022	26
14	Chinmaya Vidyalaya Group of schools	05/03/2022	19/03/2022	62
15	Baldwin School	17/03/2022	31/03/2022	21
16	C. Muniswamy Public School	08/03/2022	23/03/2022	20
17	Shankar Vidyalaya school	18/03/2022	31/03/2022	12
18	R.L. Jalappa Central School	09/03/2022	24/03/2022	30
	Total	-	-	**350**

Section-III:

1. The school teachers that meet the qualifying requirements were later chosen at random.
2. The pre-test was administered on the first day by gathering all the chosen school instructors in the classroom. To protect privacy, the baseline data on background variables were gathered using a questionnaire.
3. The pre-test questionnaire was given out following the collection of background information. In the knowledge questionnaire, subjects were invited to mark their responses according to their personal opinions; for those who needed clarification, an explanation was given. For each question, their response was obtained.
4. The teachers were split into two groups, and until all the teachers had completed the pre-test, one group received the knowledge questionnaire, the other group received the attitude questionnaire, and so on.

5. Then, with the aid of a laptop and a liquid crystal display (LCD), a teaching session on learning impairments was held utilising a power point presentation (PPT) through lecture-cum-discussion on learning disorders in children and its management at the classroom level by using the CBTE training module for roughly 90 minutes, followed by explanation of questions and additional inputs with discussion leading up to the session's conclusion.
6. Following the training, the participant voiced questions, and the researcher answered them. All of the teachers who attended the session received an email from the researcher with the CBTE training module and the contents of the Power Point presentation. They were asked to study it and stay current for future learning. All school teachers received a reminder to attend the post-test 15 days later.
7. On day 15, a post-test was administered to all of the research group's school instructors using the same questionnaire and according to the same guidelines as the pre-test. The teachers were split into two groups, with one group receiving the knowledge questionnaire, another receiving the attitude questionnaire, and a third receiving the practise questionnaire, and so on until all of the teachers had completed the post-test. Until the appropriate sample size was attained, this approach was followed.

PLAN FOR DATA ANALYSIS:

The gathered data were coded, processed, and analysed using SPSS software (IBM SPSS Statistics V 22.0) and the necessary statistical techniques.

1. Socio-demographic characteristics was analysed by frequency and percentage.

2. For evaluating the level of knowledge, level of attitude, and level of practise regarding learning disabilities in children, descriptive statistics such as frequency, percentage distribution, mean, range, variance, and standard deviation are used.
3. The efficiency of the CBTE training module was evaluated using inferential statistics such as the Paired 't' test.
4. Chi-square test examines the association between knowledge, attitude, and practise scores on learning impairments in children and the chosen socio-demographic variables.
5. In order to determine the relationship between the knowledge, attitude, and practise variables, Karl Pearson's coefficient of correlation was used.
6. For the numerous comparisons of variables and their differences, further statistical analysis such as ANOVA, Post-Hoc test, and Binary Logistic Regression analysis was performed.

This chapter covered the research methods used in the current study. It included the research methodology, the research design, the variables being studied, the research setting, the population being studied, the sample size, the sampling technique, the development of the data collection tools, a description of the tools, the determination of the validity and reliability, the pilot study, the method of data collection, and the strategy for data analysis.

DATA ANALYSIS

&

INTERPRETATION

CHAPTER-V

DATA ANALYSIS AND INTERPRETATION

Data analysis is the process of organizing and synthesizing the data in such a way that research question must be answered and hypothesis tested where the data is collected through structured questionnaires from 350 school teachers in various schools at Kolar in order to "Evaluate the effectiveness of Competency Based Teacher Education (CBTE) Training Module on Knowledge, Attitude and Practices (KAP) of School Teachers regarding Learning Disabilities in school Children". The data collected from 350 school teachers were coded in master sheet and analysed according to the plan for data analysis, which includes descriptive and inferential statistics based on the following objectives of the study.

RESEARCH QUESTION:

1. Does Competency-Based Teacher Education (CBTE) training module have an effect on Knowledge, Attitude and Practices (KAP) regarding learning disabilities in children among school teachers?
2. How does teachers in different schools at Kolar district differ significantly in their awareness, attitude, and practices after implementing competency-based teacher education (CBTE) training modules?

OBJECTIVES OF THE STUDY:

1. To assess the level of knowledge, attitude and practices of school teachers regarding learning disabilities in children by using structured questionnaires.

2. To determine the effectiveness of Competency Based Teacher Education (CBTE) training module on the level of knowledge, attitude, and practices of school teachers regarding learning disabilities in children by comparing the pre-test and post-test scores.
3. To establish the correlation between knowledge, attitude and practices of school teachers on learning disabilities in children with Pre-test scores.
4. To find out the association between knowledge, attitude and practice scores on learning disabilities in children with the selected socio- demographic variables of school teachers.

Based on the above objectives, the following research hypothesis were stated:

H_1: There is a significant difference between pre-test and post-test knowledge, attitude and practice scores of school teachers regarding learning disabilities in children before and after the implementation of Competency Based Teacher Education training module.

H_2: There is a significant relationship between knowledge, attitude and practice of school teachers towards learning disabilities in children.

H_3: There is a significant association between knowledge, attitude and practice on learning disabilities in children with the selected socio-demographic variables of the school teachers.

Based on the objectives and hypotheses of the study, the data collected were tabulated, organized and presented under the following sections:

SECTION A: Distribution of background Variables of School Teachers from Selected Schools at Kolar.

SECTION B: Distribution of Pre-test and Post-test Level of Knowledge, Attitude and Practices of School Teachers Regarding Learning Disabilities in School Children.

SECTION C: Overall Mean, Median, Mode, Range, Variance and Standard Deviation scores of Knowledges, Attitude and Practices on learning disabilities in children among the school teachers.

SECTION D: Effectiveness of CBTE Training Module on Level of Knowledge, Attitude, And Practices on Learning Disabilities in Children among school teachers by Comparing the Differences Between Pre-Test and Post-Test Scores.

SECTION E: Estimation of Relationship Between Knowledge, Attitude and Practices of School Teachers on Learning Disabilities in Children

SECTION F: Association of Post-Test Knowledge, Attitude and Practice Scores on Learning Disabilities in Children with the Selected Socio- Demographic Variables of School Teachers.

SECTION G: Description of ANOVA and Post-Hoc Test with the selected statistically Association on the Post-test Knowledge, Attitude and Practice scores with the Selected Socio- Demographic Variables of School Teachers.

SECTION H: Elucidation of Binary Logistic Regression analysis on selected socio-demographic variables significantly correlated with Post-test Knowledge, Attitude and Practice scores.

Section A: Distribution of background variables of School Teachers from Selected Schools at Kolar.

Table 1: Frequency and percentage distribution of socio-demographic and professional characteristics of school teachers

N=350

Sl. No.	Socio-demographic Variables	Frequency (f)	Percentage (%)
1.	**Age in years**		
	a) <30 years	69	19.7
	b) 31-40 years	**175**	**50.0**
	c) 41-50 years	90	25.7
	d) >50 years	16	04.6
2.	**Gender**		
	a) Male	74	21.1
	b) Female	**276**	**78.9**
3.	**Educational status**		
	a) Diploma	30	08.6
	b) Under graduate	**197**	**56.3**
	c) Post graduate	123	35.1
4.	**Marital status**		
	a) Married	**300**	**85.7**
	b) Unmarried	46	13.1
	c) Widowed	04	01.1
5.	**Religion**		
	a) Hindu	**281**	**80.3**
	b) Muslim	33	09.4
	c) Christian	36	10.3
6.	**Place of residence**		
	a) Rural	**136**	**38.9**
	b) Urban	183	52.3

	c) Semi-urban	31	08.9
7.	**Type of school** a) Government b) Private c) Grant in Aid	 05 **345** -	 01.4 **98.6** -
8.	**Type of family** a) Nuclear b) Joint c) Extended	 **263** 85 02	 **75.1** 24.3 0.6
9.	**Type of Employment** a) Contract basis b) Probation c) Temporary d) Permanent	 06 12 **231** 101	 01.7 03.4 **66.0** 28.9
10.	**Monthly income (in Rs)** a) ≤10,000 b) 10,001-20,000 c) 20,001-30,000 d) 30,001-40,000 e) >40,000	 96 **228** 17 06 06	 27.4 **65.1** 04.9 01.7 0.9
11.	**Involved with group of students / taking classes** a) Lower primary b) Upper primary c) Both d) Other than primary	 101 82 **142** 25	 28.9 23.4 **40.6** 07.1
12.	**Location of school** a) Urban	 159	 45.4

	b) Rural c) Semi-urban	**163** 28	**46.6** 08.0
13.	**Presently, what specific role do you possess other than Teaching?** a) Class teacher b) Subject teacher c) Both a and b d) Any others	 38 71 **231** 10	 10.9 20.3 **66.0** 02.9
14.	**Have you attended any training on management of Learning Disabilities in Children?** a) Yes b) No If yes specify the media /mode of training I. Conference II. Online III. Seminar IV. Workshop	 54 **296** 07 37 01 09	 15.4 **84.6** 02.0 10.6 0.3 02.6
15.	**Total years of experience as a teacher:** a) <5 yrs. b) 6-10 yrs. c) 11-15 yrs. d) 16-20yrs e) >20 yrs.	 98 **123** 87 25 17	 28.0 **35.1** 24.9 07.1 04.9

16.	**Do you have previous exposure on learning Disabilities as a part of the curriculum?** a) Yes b) No	 117 **233**	 33.4 **66.6**
17.	**During your service, have you identified any child with learning Disabilities?** a) Yes b) No c) If yes specify ➢ Problem in Reading ➢ Problem in writing ➢ Problem in doing Math's/Calculation ➢ Identified in more than one area	 **245** 105 45 23 22 155	 **70.0** 30.0 12.9 06.6 06.2 44.3
18.	**Any experience in teaching the children with learning disabilities.** a) Yes b) No	 156 **194**	 44.6 **55.4**

Table 1 describes the distribution of socio-demographic characteristics among teachers in terms of frequency and percentage. The majority of the study participants were school teachers, of whom 175 (40%) were between the ages of 31 and 40, and 90 (25.7%) were aged between 41 and 50. 37.52 was the average age.

In terms of gender, 276 (78.9%) of the participants were female, while 74 (21.1%) were male. More than half of the teachers 197(56.3%) had undergraduate degrees and 30 (08.6%) were diploma holders.

Regarding their marital status, the majority of the 300 (85.7%) were married. In terms of religion, 281 of them (85.7%) were Hindus, 33 (09.4%) are Muslims, and 36 (10.3%) seems to be Christians.

With regard to, place of residence most of them were from urban area, 183 (52.3%) and 163 (38.9%) of the participants were from rural areas. Regarding the type of school, 345 respondents (98.6%) were from private schools, and only 05 teachers (1.4%) were from government schools.

Relating to family type, 85 (24.3%) belonged to a joint family, while 263 (75.1%) belonged to nuclear family. In terms of job status, 101 (28.9%) of the school teachers were permanent employees. In terms of average monthly income per individual, the majority of school teachers 228 (65.1%) earning between Rs 10,000 to Rs 20,000 per month, while 96 (27.4%) were paid less than Rs 10,000.

In terms of school teachers being engaged with the group of students or handling classes, 142 respondents (50%) said they were handling both lower primary and upper primary classes.

Regarding the specific positions that school teachers hold in addition to teaching, majority respondents 231 (65%) said that they were class instructors as well as subject teachers, and only 10 (2.9%), said they held other administrative positions in addition to teaching.

Almost 296 respondents (84.6%) stated that they had not participated in any training programmes on managing learning disabilities in children, and only 37 respondents (10.6%) said they had participated in some online sessions, though not specifically on how to identify learning disabilities in children.

Regarding prior exposure to learning difficulties as a part of the curriculum, 223 (66.6%) of the teachers stated that they had no prior exposure to the subject. In terms of the overall number of years of experience as teachers, 123 (35.1%) have between 06 and 10 years of experience and 98 (28.0%) had lesser than 5 years.

When inquired if they had noticed or identified any students with learning disabilities during their experiences in the classroom, a majority of teachers 245 (75%) said yes. Of those, 155 (44.3%) identified multiple learning disabilities, such as dyslexia, dysgraphia, dyscalculia, etc. However, when asked if they had experience in managing children with learning disabilities, the majority 194 (55.4%) said no experience in managing the children with learning disabilities.

Section B: Distribution of Pre-test and Post-test Level of Knowledge, Attitude and Practices of School Teachers Regarding Learning Disabilities in School Children

Table 2: Frequency and Percentage distribution of Pre-test Level of Knowledge on Learning Disabilities in Children among school teachers.

N=350

Sl. No	Level of Knowledge	Score Range	Frequency (f)	Percentage (%)
1.	Inadequate Knowledge	(0-50%) 0-25	89	25.4
2.	Moderate Adequate Knowledge	(51-75%) 26-38	**254**	**72.6**
3.	Adequate Knowledge	(75%100%) 39-50	07	02.0

Table 2 discusses about the frequency and percentage distribution of pre-test level of knowledge regarding learning disabilities in children among the school teachers, which states that 89 (25.4%) of the school teachers had inadequate knowledge on learning disabilities in children, majority of them 254 (72.6%) had moderately adequate knowledge, and only 07 (02%) had adequate knowledge about learning disabilities in children.

Table 3: Frequency and Percentage distribution of Pre-test Level of Attitude on Learning Disabilities in Children among school teachers.

N=350

Sl. No	Level of Attitude	Score Range	Frequency (f)	Percentage (%)
1.	Unfavourabe Attitude	20-40% (50-100)	-	-
2.	Moderately Favourable Attitude	41-60% (101-150)	70	20.0
3.	Favourable Attitude	61-80% (151-200)	**272**	**77.7**
4.	Highly Favourable Attitude	81-100% (201-250)	08	02.3

Table 3: reveals the frequency and percentage distribution of school teachers' pre-test attitudes toward children with learning disabilities, showing that 70 (20.0%) of them had a moderately positive attitude where majority of them, 272 (77.7%), had a favourable attitude, only 08 (2.3%) had a highly favourable attitude, and none of them had an unfavourable attitude towards children with learning disabilities.

Table 4: Frequency and Percentage distribution of Pre-test Level of Practice on Learning Disabilities in Children among school teachers

N=350

Sl. No	Level of Practice	Score Range	Frequency (f)	Percentage (%)
1.	Poor Practice	0-25% (0-40)	07	02.0
2.	Satisfactory Practice	26-50% (41-80)	96	27.4
3.	Good Practice	51-75% (81-120)	**217**	**62.0**
4.	Excellent Practice	76-100% (121-160)	30	08.6

Table 4 describes the frequency and percentage distribution of Pre-test level of practice regarding learning disabilities in children among the school teachers. Predominantly 217 (62.0%) of the school teachers had good level of practice, 96 (27.4%) had satisfactory level of practice (average), and 30 (08.6%) of them had excellent practice in managing the children with learning disabilities at classroom level, while only 07 (02.0%) had poor level of practice.

Table 5: Frequency and Percentage distribution of Post-test Level of Knowledge on Learning Disabilities in Children among school teachers.

N=350

Sl. No	**Level of Knowledge**	**Score Range**	**Frequency (f)**	**Percentage (%)**
1.	Inadequate Knowledge	(0-50%) 0-25	-	-
2.	Moderate Adequate Knowledge	(51-75%) 26-38	148	42.3
3.	Adequate Knowledge	(75%-100%) 39-50	**202**	**57.7**

Table 5 explains the frequency and percentage distribution of post-test knowledge levels among school teachers regarding learning disabilities in children. It shows that none of the study subjects had inadequate knowledge in the Post-test, while 202 (57.7%) of the school teachers had adequate knowledge and 148 (42.3%) of them had moderate adequate knowledge on learning disabilities in children.

Table 6: Frequency and Percentage distribution of Post -test Level of Attitude on Learning Disabilities in Children among school teachers.

N=350

Sl. No	**Level of Attitude**	**Score Range**	**Frequency (f)**	**Percentage (%)**
1.	Unfavourable Attitude	20-40% (50-100)	-	-
2.	Moderately Favourable Attitude	41-60% (101-150)	-	-
3.	Favourable Attitude	61-80% (151-200)	128	36.6
4.	Highly Favourable Attitude	81-100% (201-250)	**222**	**63.4**

Table 6: depicts the frequency and percentage distribution of school teachers' Post-test attitudes toward children with learning disabilities, showing that the majority of school teachers, 222 (63.4%), had highly favourable attitudes and 128 (36.6%) of them had favourable attitudes, but none of the school teachers had neither unfavourable nor moderately favourable attitudes.

Table 7: Frequency and Percentage distribution of Post -test Level of Practice on Learning Disabilities in Children among school teachers.

N=350

Sl. No	**Level of Practice**	**Score Range**	**Frequency (f)**	**Percentage (%)**
1.	Poor Practice	0-25% (0-40)	-	-
2.	Satisfactory Practice	26-50% (41-80)	-	-
3.	Good Practice	51-75% (81-120)	183	52.3
4.	Excellent Practice	76-100% (121-160)	**167**	**47.7**

Table 7 presents information on the frequency and percentage distribution of Post-test level of practice regarding learning disabilities in children among school teachers, stating that a greater number of the school teachers 167 (47.7%) of them had excellent level of practice, 183 (52.3%) of them had good level of practice, and none of the school teachers had poor level of practice (below average) as well as satisfactory level of practice in managing the children with learning disabilities.

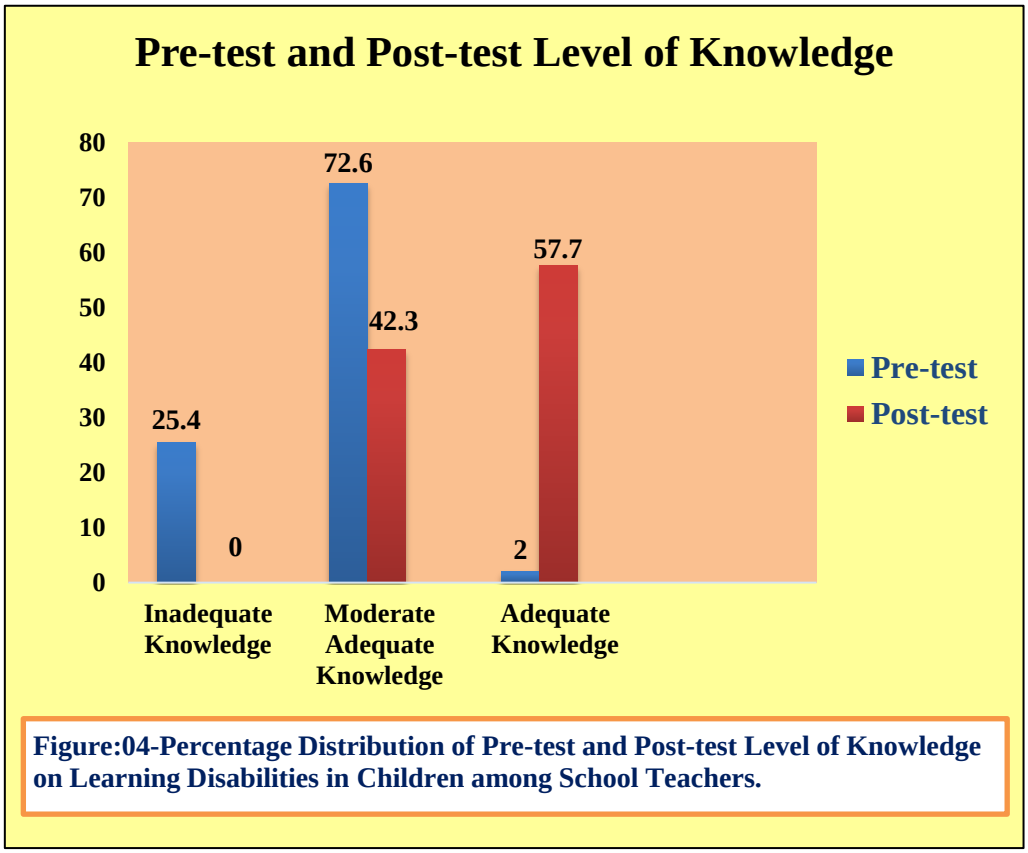


Figure:04-Percentage Distribution of Pre-test and Post-test Level of Knowledge on Learning Disabilities in Children among School Teachers.

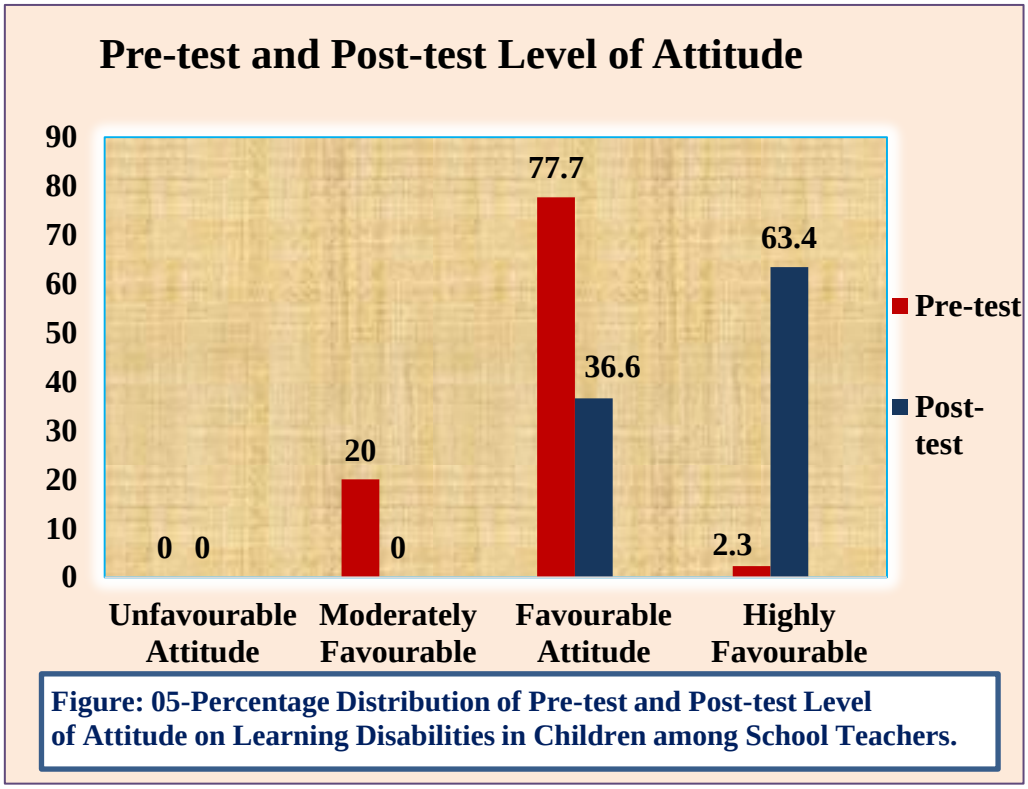


Figure: 05-Percentage Distribution of Pre-test and Post-test Level of Attitude on Learning Disabilities in Children among School Teachers.

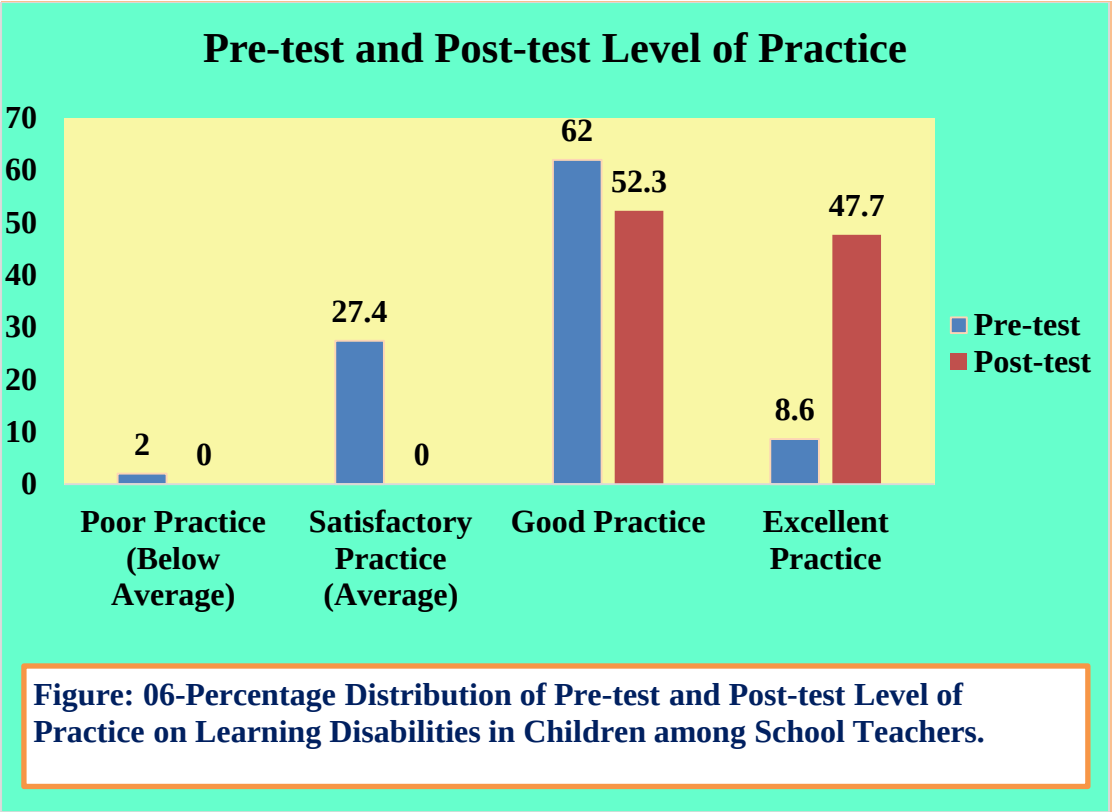


Figure: 06-Percentage Distribution of Pre-test and Post-test Level of Practice on Learning Disabilities in Children among School Teachers.

Section C: Overall Mean, Range, Variance and Standard Deviation scores of Knowledges, Attitude and Practices on learning disabilities in children among the school teachers.

Table 8: Distribution of Pre-test Mean, Range, Variance and Standard Deviation scores of Knowledges, Attitude and Practices on learning disabilities in children among the school teachers. N=350

Study variable	Items	Min score	Max score	Mean	SD	Variance	SE Mean
Knowledge Scores	50	12	42	29.42	5.53	30.59	8.29
Attitude scores	50	102	210	169.84	21.55	464.75	1.15
Practice scores	40	25	136	98.31	21.79	665.33	1.37

Table 8 shows the mean, standard deviation, range, and variance of the pre-test scores for knowledge, attitude, and practice regarding learning disabilities in children among school teachers. The minimum score for knowledge was 12 and the maximum score was 42. The mean knowledge score and SD in the pre-test are 29.42 and 5.53, respectively, with a variance of 30.59. The minimum score for attitude was 102 and the maximum score was 210 where the mean score and SD are 169.84 and 21.55, respectively, with a variance 464.75, similarly the minimum score for practice was 25 and the maximum score was 136. The mean practice score and SD in the pre-test are 98.31 and 21.79, respectively, with a variance of 665.33.

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Table 9: Distribution of Post-test Mean, Range, Variance and Standard Deviation scores of Knowledges, Attitude and Practices on learning disabilities in children among the school teachers.

N=350

Study variable	**Items**	**Min score**	**Max score**	**Mean**	**SD**	**Variance**	**SE Mean**
Knowledge Scores	50	26	44	38.35	3.45	11.94	0.18
Attitude scores	50	172	235	208.69	16.40	269.05	0.87
Practice scores	40	85	149	118.88	11.85	140.56	0.70

Table 9 reveals the mean, SD, variance, and post-test scores of knowledge, attitude, and practice regarding learning disabilities in children among school teachers are projected. The minimum score was 26 and the maximum score was 44; the mean knowledge score and SD in the Pre-test are 38.35 and 3.45, respectively, with the variance being 11.94. Similarly, for attitude, the minimum score was 172 and the maximum score was 235; the mean score and SD have 208.69 and 16.40, respectively, with the variance 269.05 as well as for practice the minimum score was 85 and the maximum score was 149; the mean score and SD have 118.88 and 11.85, with the variance 140.56.

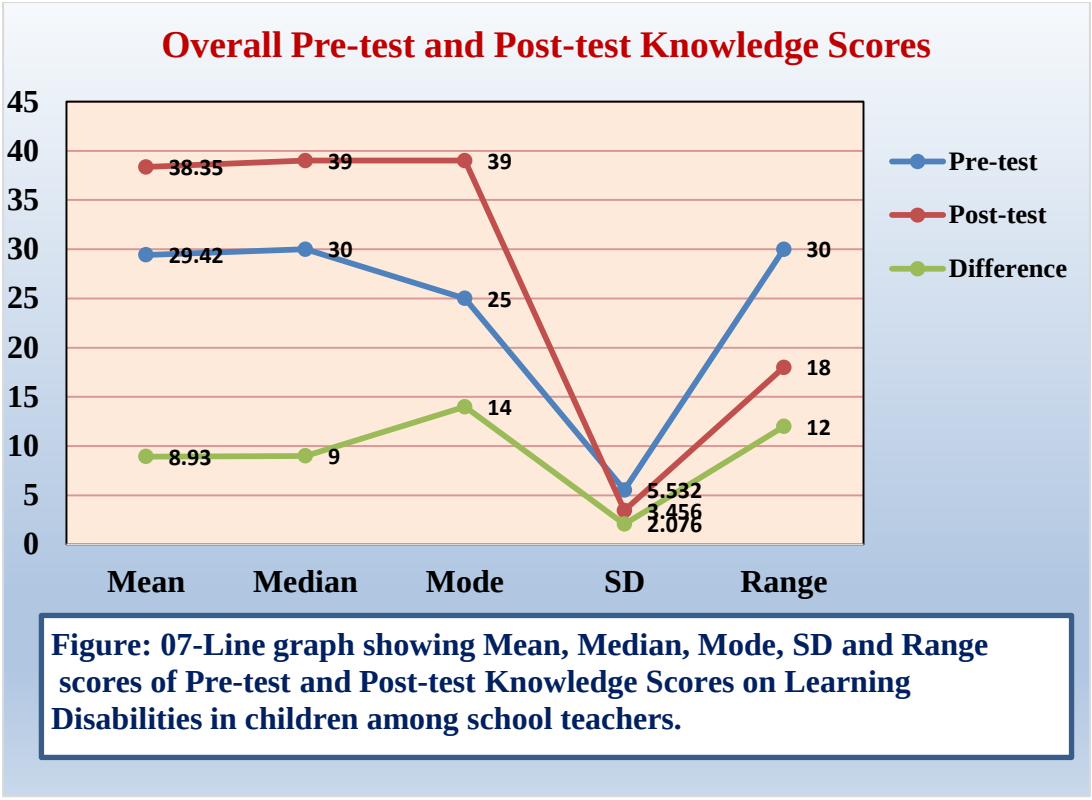

Figure: 07-Line graph showing Mean, Median, Mode, SD and Range scores of Pre-test and Post-test Knowledge Scores on Learning Disabilities in children among school teachers.

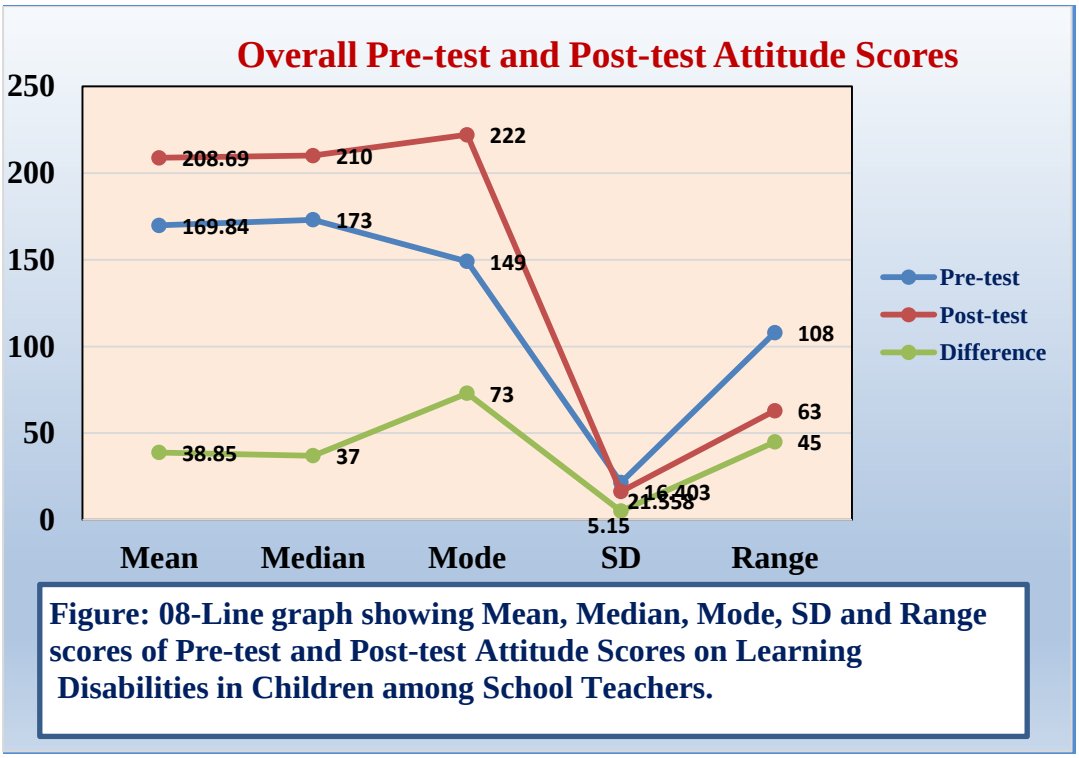

Figure: 08-Line graph showing Mean, Median, Mode, SD and Range scores of Pre-test and Post-test Attitude Scores on Learning Disabilities in Children among School Teachers.

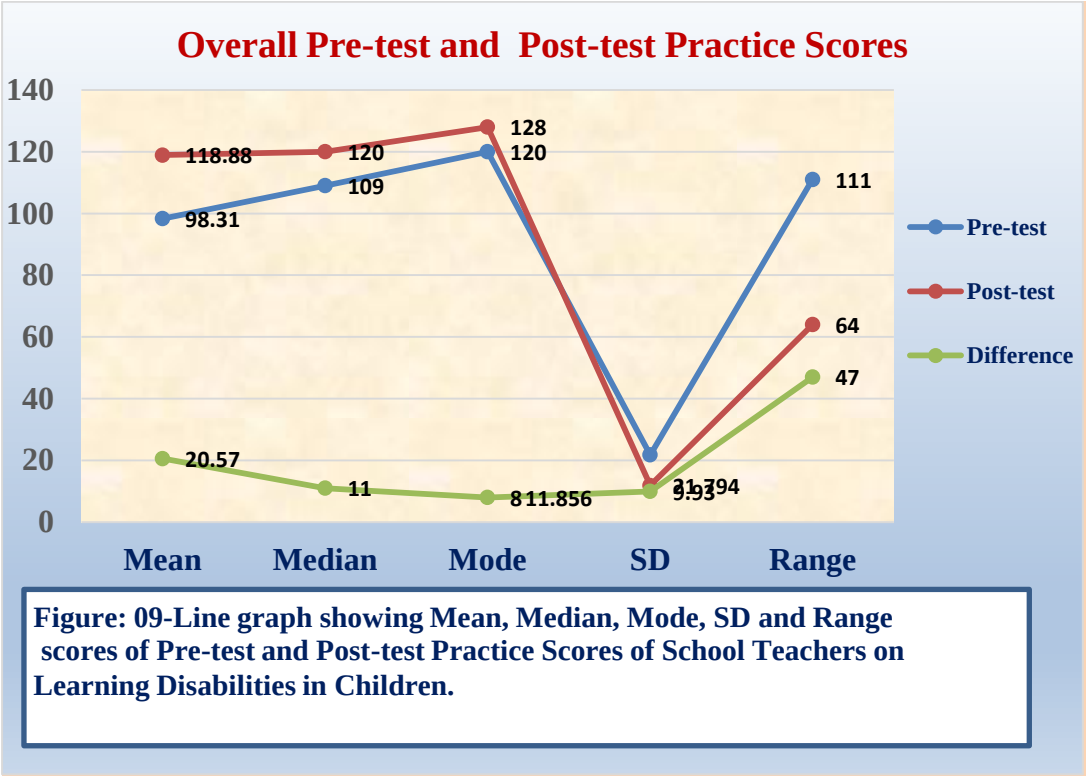

Figure: 09-Line graph showing Mean, Median, Mode, SD and Range scores of Pre-test and Post-test Practice Scores of School Teachers on Learning Disabilities in Children.

Table 10: Distribution of area-wise Pre-test Mean, Range, Variance and Standard Deviation scores of Knowledge on learning disabilities in children among the school teachers.

N=350

Area wise (Knowledge)	Items	Min score	Max score	Mean	SD	Variance	SE Mean
General information on LD	06	0	06	3.49	1.21	1.46	0.065
Causes of LD	05	0	05	3.02	1.26	1.61	0.068
Characteristics of LD	08	01	08	4.36	1.30	1.70	0.070
Types of LD	18	0	17	10.61	2.74	7.51	0.147
Investigations of LD	05	0	05	3.15	1.02	1.04	0.055
Management with LD	08	01	08	4.79	1.62	2.65	0.087
Overall	**50**	**12**	**42**	**29.42**	**5.53**	**30.59**	**0.296**

Table 10: conveys the narrative of the overall distribution of area-wise Pre-test Mean, Range, Variance and Standard Deviation scores of Knowledge on learning disabilities in children among the school teachers. Regarding general information on learning disabilities ranged from 0 to 6, with the mean knowledge score and standard deviation being 3.49 and 1.21, respectively, and the variance is around 1.46. The minimum and maximum scores for causes of learning difficulties were 0 and 05, respectively, with mean scores of 3.02 and 1.26 and variance of 1.61.

The minimum and maximum scores for the characteristic of learning difficulties were 01 and 08, respectively where the mean score was 4.36, the SD was 1.30, and the variance was 1.70. The minimum and maximum scores for learning disability types were 0 and 17, respectively, with a mean score and standard deviation of 10.61 and 2.74 and a variance of 7.51. The minimum and maximum scores for the investigations into learning difficulties were 0 and 5, respectively. The mean score was 3.15, the SD was 1.02, and the variance was 1.04. The minimum and maximum scores for management with learning difficulties were 01 and 08, respectively, with mean scores of 4.79 and 1.62 and a variance of 2.65.

Table 11: Distribution of area-wise Pre-test Mean, Range, Variance and Standard Deviation scores of Attitudes on learning disabilities in children among the school teachers.

N=350

Area wise (Attitude)	**Items**	**Min score**	**Max score**	**Mean**	**SD**	**Variance**	**SE Mean**
General attitude on LD	20	34	84	63.42	7.43	55.20	0.39
In helping children with LD	15	25	69	54.63	8.63	74.47	0.46
About inclusive education in LD	15	27	72	51.90	8.88	78.84	0.47
Overall	**50**	**102**	**210**	**169.84**	**21.55**	**464.75**	**1.14**

Table 11 shows the overall distribution of area-wise pre-test scores of means, SD, range, and variance of attitude regarding learning disabilities in children among school teachers, where the teacher's general attitude about learning disabilities minimum score was 34 and maximum score was 84, with the mean knowledge score and SD in the pre-test are 63.42 and 7.43 respectively, with the range and variance being 50 and 55.20

The minimum score was 27 and the maximum score was 72 on the attitude for helping children with learning disabilities, with the mean score and SD being 54.90 and 8.88, respectively, with the variance 74.47. On the attitude about inclusive education for children with learning disabilities, the minimum score was 27 and the maximum score was 72, with the mean score and SD being 51.90 and 8.88, respectively, with the variance of 78.84.

Table 12: Distribution of area-wise Pre-test Mean, Range, Variance and Standard Deviation scores of Practices on learning disabilities in children among the school teachers.

N=350

Area wise (Practice)	Items	Min score	Max score	Mean	SD	Variance	SE Mean
Personal characteristics in practice	10	05	39	25.36	7.7	60.15	0.41
Teachers' preparation in classroom management	08	04	31	19.49	6.11	37.40	0.32
Classroom adaptation	12	06	46	28.02	8.19	67.18	0.43
Teacher's collaboration in classroom	05	02	20	12.90	3.85	14.83	0.20
Teachers' parent's liaisons	05	01	20	12.53	4.83	19.20	0.23
Overall	**40**	**25**	**136**	**98.31**	**25.77**	**665.33**	**1.37**

Table 12 shows the overall distribution of area wise Pre-test scores of mean, SD, range, and variance of practice regarding learning disabilities in children among school teachers. With the personal characteristics in practices of teachers' minimum score was 05 and maximum score was 39, with the mean practice scores and SD are 25.36 and 7.75, respectively, with the range and variance being 34 and 60.15.

Following that, the minimum and maximum scores for teachers' planning in class room management were 04 and 31, respectively, with mean scores and standard deviations of 19.49 and 6.11 and a range value of 27 and variation of 37.40.

The minimum and highest scores for the practice on classroom adaptation in a supportive atmosphere were 06 and 46, respectively, with a mean score of 28.02 and SD of 8.19, a range value of 40, and a variation of 67.18. The minimum and maximum scores for teacher collaboration with students in the classroom were 02 and 20, respectively, with mean scores and standard deviations of 12.90 and 3.85 and a range of 18 and variation of 14.83. The minimum and maximum scores for the liaisons between teachers, parents and administrative support were 01 and 20, respectively, with a mean score of 12.53 and a standard deviation of 4.83, and a range value of 19 with variance of 19.20.

Table 13: Distribution of area-wise Post-test Mean, Range, Variance and Standard Deviation scores of Knowledges on learning disabilities in children among the school teachers.

N=350

Area wise (Knowledge)	Items	Min score	Max score	Mean	SD	Variance	SE Mean
General information on LD	06	03	06	5.13	0.51	0.26	0.02
Causes of LD	05	02	05	4.04	0.66	0.44	0.03
Characteristics of LD	08	02	08	5.52	0.98	0.96	0.05
Types of LD	18	04	17	13.62	1.17	3.08	0.09
Investigations of LD	05	01	05	3.97	0.64	0.42	0.03
Management with LD	08	01	08	6.04	1.04	1.08	0.55
Overall	**50**	**26**	**44**	**38.35**	**3.45**	**11.94**	**0.18**

Table 13 explains the overall distribution of post-test knowledge scores by area wise among school teachers, showing that knowledge about learning disabilities in general ranged from a minimum of 03 to a maximum of 06, with the mean knowledge score and SD being 5.13 and 0.51, respectively, and the range and variance being 03 and 0.26. The next category was causes of learning problems, where the minimum and maximum scores were 02 and 05, respectively, with a mean score and standard deviation of 4.04 and 0.66 and a range of 03 with variance of 0.44. The minimum and maximum scores for the characteristic of learning difficulties were 02 and 08, respectively, with a mean score of 5.52 and a standard deviation of 0.98, and a range value of 06 with a variance of 0.96. The minimum and maximum scores

for learning disability types were 04 and 17, respectively, with mean scores of 13.62 and 1.75 and range values of 13 with variance 3.08 as well.

The minimum and maximum scores for the investigations into learning difficulties were 01 and 05, respectively. The mean score was 3.97, the SD was 0.64, the range value was 04, as the variance was 0.42. The following section dealt with management of children with learning difficulties, where the minimum score was 01 and the maximum was 08; the mean score and standard deviation were 6.04 and 1.04, respectively, with a range value of 07 and a variance of 1.08.

Table-14: Distribution of aspects wise Post-test Mean, Range, Variance and Standard Deviation scores of Attitudes on learning disabilities in children among the school teachers.

N=350

Area wise (Attitude)	**Items**	**Min score**	**Max score**	**Mean**	**SD**	**Variance**	**SE Mean**
General attitude on LD	20	60	93	79.17	7.97	63.58	0.42
In helping children with LD	15	45	73	65.29	4.72	22.34	0.25
About inclusive education in LD	15	42	72	64.13	5.78	33.49	0.30
Overall	**50**	**172**	**235**	**208.69**	**16.40**	**269.05**	**0.87**

Table 14 describes the overall distribution of area-wise post-test scores of mean, standard deviation, range, and variance of attitudes toward learning disabilities in children among school teachers, where the general attitude toward learning disabilities in children's minimum score was 60 and maximum score was 93; the mean attitude score and standard deviation in the post-test were 79.17 and 7.97, respectively with the range and variance were 33 and 63.58

The minimum and maximum scores for attitude towards assisting children with learning difficulties were 45 and 73, respectively, with mean scores of 65.29 and standard deviation of 4.72, with the range value of 28 and variance 22.34, respectively. In terms of attitudes toward inclusive education for children with learning disabilities, the minimum and maximum scores were 42 and 72, respectively. The mean score was 64.13, the SD was 5.78, and the range and variance were 30 and 33.49, respectively.

Table 15: Distribution of area wise Post-test Mean, Range, Variance and Standard Deviation scores of practices on learning disabilities in children among the school teachers.

N=350

Area wise (Practice)	**Items**	**Min score**	**Max score**	**Mean**	**SD**	**Variance**	**SE Mean**
Personal characteristics in practice	10	18	40	29.64	4.11	16.94	0.22
Teachers' preparation in classroom management	08	15	35	24.68	3.78	14.30	0.20
Classroom adaptation	12	20	45	23.30	4.45	19.86	0.23
Teacher's collaboration in classroom	05	11	20	15.65	1.80	3.24	0.09
Teachers - parent's liaisons	05	09	20	15.55	2.01	4.07	0.10
Overall	**40**	**85**	**149**	**118.88**	**11.85**	**140.56**	**0.70**

Table 15 indicates that the overall distribution of area-wise post-test scores of mean, SD, range, and variance of practice regarding learning disabilities in children among school teachers, with the minimum and maximum scores for personal characteristics of teachers in practices being 18 and 40, in which the mean score and SD in the pre-test are 29.64 and 4.11 respectively, with the range and variance being 22 and 16.94.

Next, teachers' planning and evaluation for class room management were graded, with a minimum score of 15 and a maximum score of 35. The mean score and

standard deviation were 24,68 and 3.78, respectively, with a range of 20 and a variance of 14.30. The minimum and maximum scores for the practice on classroom adaptation in a supportive atmosphere were 20 and 45 respectively with the mean score was 23.30, the SD was 4.45, the range value was 25, and the variance was 19.86.

Minimum and maximum scores for teacher collaboration with students in the classroom were 11 and 20, respectively, with mean scores of 15.65 and 1.80 and range values of 09 and 3.27. The minimum and maximum scores for the positive liaisons between teachers and parents with administrative support were 09 and 20, respectively. The mean score was 15.55, the SD was 2.01, the range value was 11, and the variation was 04.07.

Section D: Effectiveness of CBTE Training Module on Level of Knowledge, Attitude, And Practices on Learning Disabilities in Children among school teachers

Table 16: Comparison of Pre- and Post-Test Score Differences on School Teachers' Knowledge, Attitude, and Practices Regarding Children with Learning Disabilities for determining the Effectiveness of the CBTE Training Module.

N=350

Study variables	Pre-test	Post-test	Enhancement	Paired 't' test & P value (Sig)
	Mean± SD	Mean ± SD	Mean ± SD	
Knowledge	29.42 ± 5.53	38.35 ± 3.45	8.93 ± 3.39	49.18* (0.001)
Attitude	169.84 ± 21.55	208.69 ± 16.40	38.85 ± 14.03	51.79* (0.001)
Practice	98.31± 26.79	118.88 ± 11.85	20.57 ± 17.84	21.57* (0.001)

df=349: *SS-Statistically significant at P<0.05, Paired 't' test was used for the above analysis

Table 16: Highlights the CBTE training module effectiveness by comparing the differences between pre-test and post-test scores on knowledge, attitude, and practices of school teachers regarding learning disabilities in school children. There was a gradual improvement between the pre-test and post-test mean scores of knowledge with 8.93± 3.39, attitude mean enhancement with 38.85± 14.03,

and practice mean enhancement scores with 20.57± 17.84, and the paired 't' test values with comparison of mean scores shows 49.18 for knowledge, 51.79 for attitude and 21.57 for practice respectively, where it is statistically significant at P<0.05 with degree of freedom at 349.

Therefore, it can be inferred that the CBTE training module is very helpful in enhancing school teachers' knowledge, attitude, and professional practice regarding children with learning difficulties. Because of this, hypothesis $\mathbf{H_1}$ is accepted which states that there is a significant difference between pre-test and post-test knowledge, attitude, and practice scores of school teachers regarding learning disabilities in children before and after the implementation of Competency Based Teacher Education training module, is true.

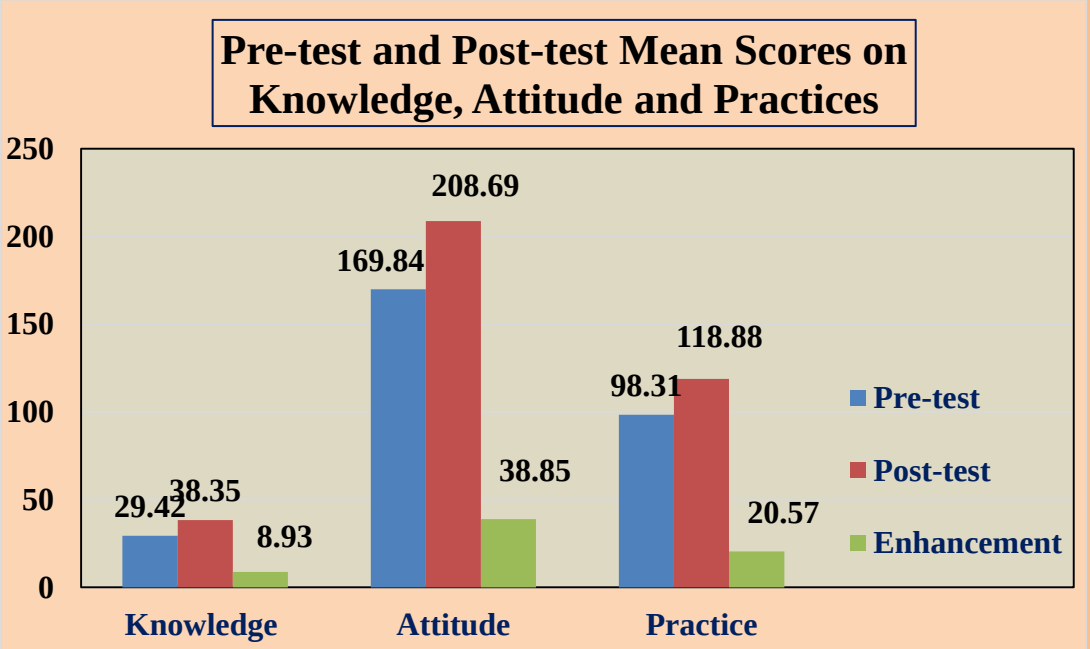

Figure:10-Comparing the differences between pre-test and post-test scores on knowledge, attitude and practices of school teachers regarding learning disabilities in school children

SECTION E: Estimation of Relationship Between Knowledge, Attitude and Practices of School Teachers on Learning Disabilities in Children.

Table 17: Distribution of Correlation between Pre-Test Knowledge, Attitude, and Practices of School Teachers on Learning Disabilities in children.

N=350

Study variable	Correlation coefficient (r) value	P value (sig)	Inference
Knowledge with Attitude **(K vs A)**	0.20*	0.001	**(SS) at P<0.05** Positive Correlation (Negligible/Possible)
Attitude with Practice **(A vs P)**	0.55*	0.001	**(SS) at P<0.05** Positive Correlation (Moderate)
Knowledge with Practice **(K vs P)**	0.30*	0.001	**(SS) at P<0.05** Positive Correlation (Low)

***Correlation is statistically significant at the P<0.05 level. (2-tailed), Karl Pearson's correlation coefficient test was used**

Table 17: illustrate the correlation between pre-test knowledge, attitude, and practices scores of school teachers on learning disabilities in school children where Karl Pearson's coefficient of correlation is used, which showed that knowledge and attitude variables have a statistically significant potential or negligible positive correlation with (r=0.20, P<0.05).

There is statistically significant moderate positive correlation between attitude and practice variables with (r=0.55, P<0.05), as well as statistically significant low positive correlation between knowledge and practice variables with (r=0.30, P<0.05),

which confirms that as knowledge increases, attitudes also do so, or vice versa; similarly, as attitudes increase, practices also do so, and also with the knowledge and practice variables too towards learning disabilities in children among the school teachers.

Thus, the **H_2** hypothesis, according to which there is a statistically significant relationship between teachers' knowledge, attitudes, and practices about learning difficulties in children is accepted.

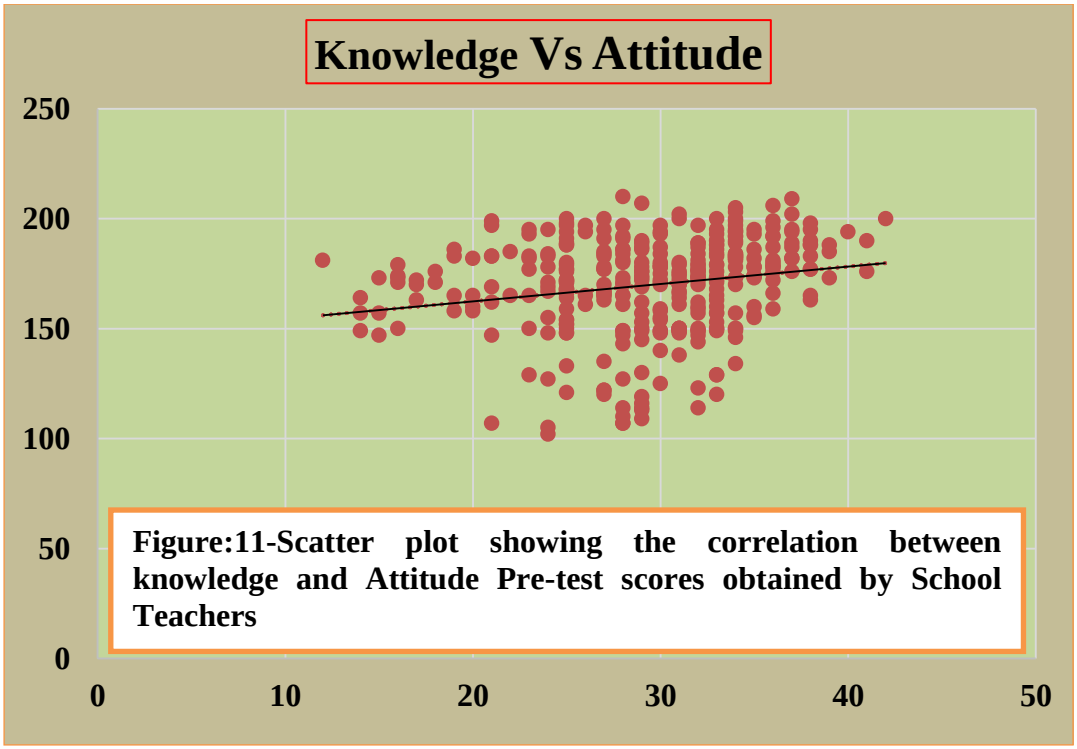

Figure:11-Scatter plot showing the correlation between knowledge and Attitude Pre-test scores obtained by School Teachers

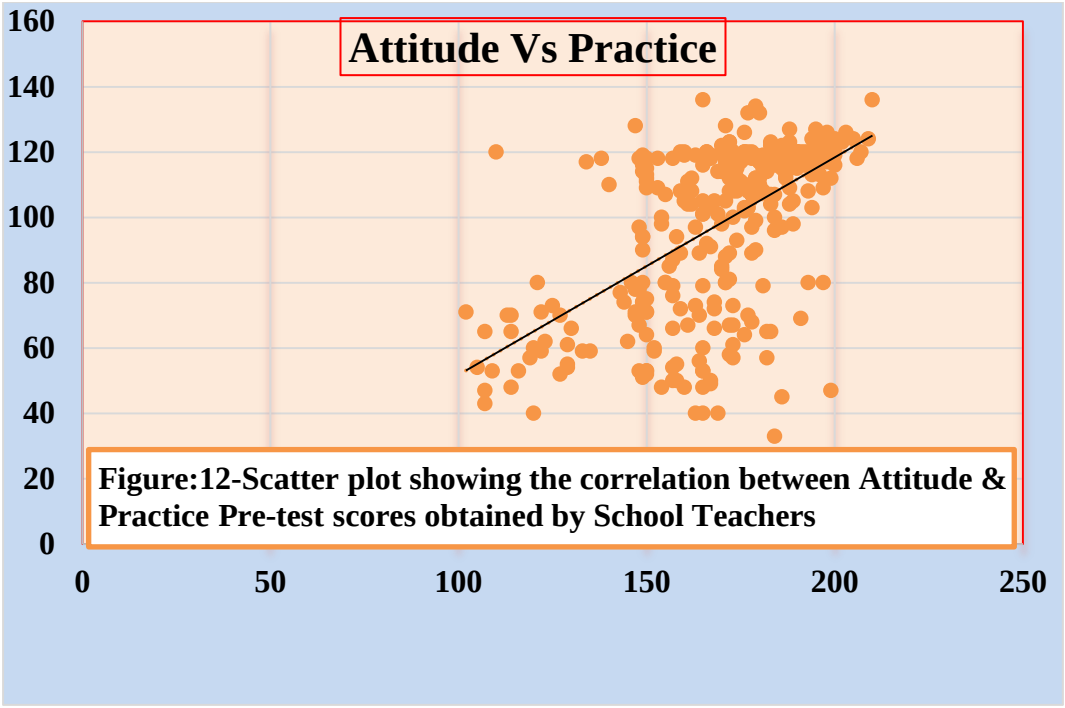

Figure:12-Scatter plot showing the correlation between Attitude & Practice Pre-test scores obtained by School Teachers

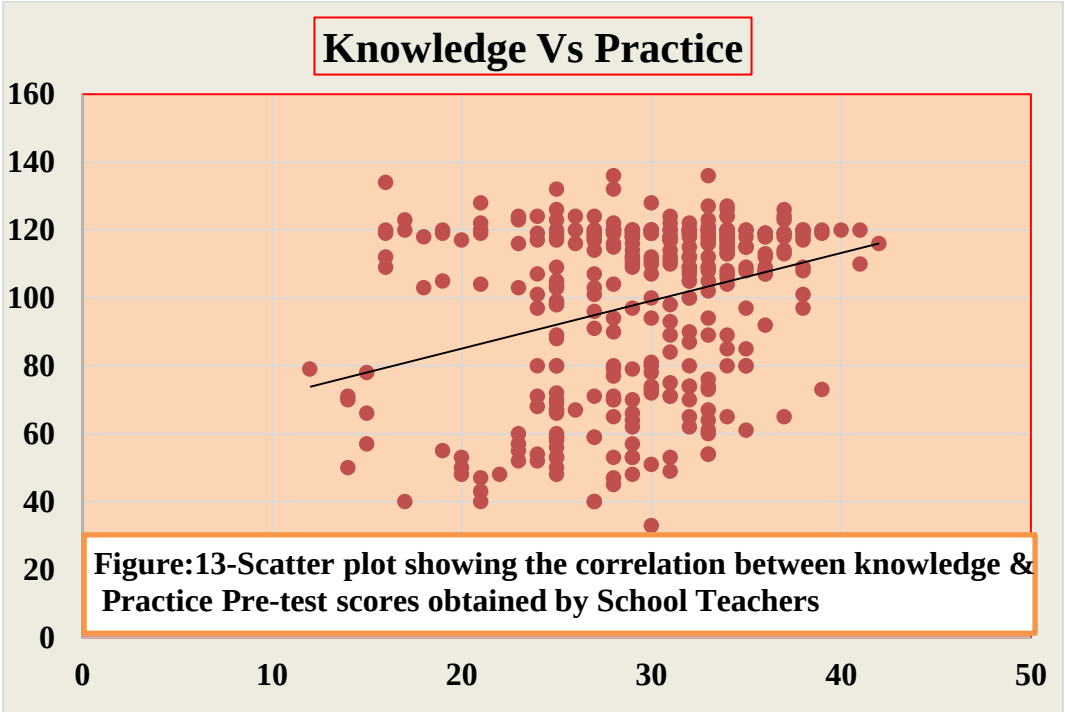

Figure:13-Scatter plot showing the correlation between knowledge & Practice Pre-test scores obtained by School Teachers

Table 18: Distribution of paired sample relationship between Pre-test and Post-test Knowledge, Attitude and Practice Scores on Learning Disabilities in Children of School Teachers.

N=350

Study variable	Correlation coefficient (r) value	P value (sig)	Inference
Pre-test Knowledge with Post-test knowledge **(PTK vs POTK)**	0.81*	0.001	**(SS) at P<0.05** High Positive Correlation
Pre-test Attitude with Post-test Attitude **(PTA vs POTA)**	0.75*	0.001	**(SS) at P<0.05** High Positive Correlation
Pre-test Practice with Post-test Practice **(PTP vs POTP)**	0.79*	0.001	**(SS) at P<0.05** High Positive Correlation

***Correlation is statistically significant at the P<0.05 level. (2-tailed), Karl Pearson's correlation coefficient test was used**

Table 18 depicts the relationship between the pre-test and post-test knowledge, attitude, and practice scores on learning disabilities in students who have teachers as parents using Karl Pearson's coefficient of correlation, which showed a statistically significant high level positive correlation between the pre-test and post-test knowledge scores (r=0.81, P<0.05), then there is a statistically significant high positive relationship between pre-test and post-test Attitude scores (r=0.75, P<0.05), as well as a statistically significant high positive correlation between pre-test and post-test Practice scores (r=0.79, P<0.05). which demonstrates that, when the pre-test

knowledge score gets higher, the post-test knowledge score also goes up, or vice versa; similarly, when the pre-test attitude score increases, the post-test attitude score also begins to rise, or vice versa; similarly, whenever the pre-test practice score keeps rising, the post-test practice score also begins to rise, or vice versa; towards learning disabilities in children among the school teachers.

As a result, the hypothesis $\mathbf{H_2}$ is accepted, which states that there is a significant relationship between school teachers' knowledge, attitude, and practice towards children with learning disabilities

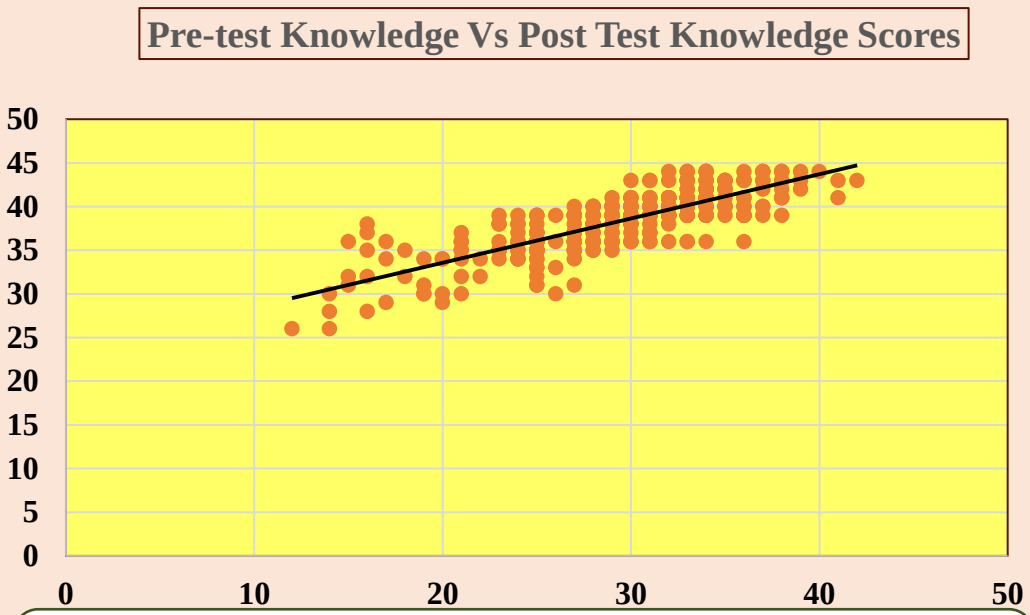

Figure:14-Scatter plot showing the correlation between Pre-test knowledge and Post-test Knowledge Scores obtained byTeachers.

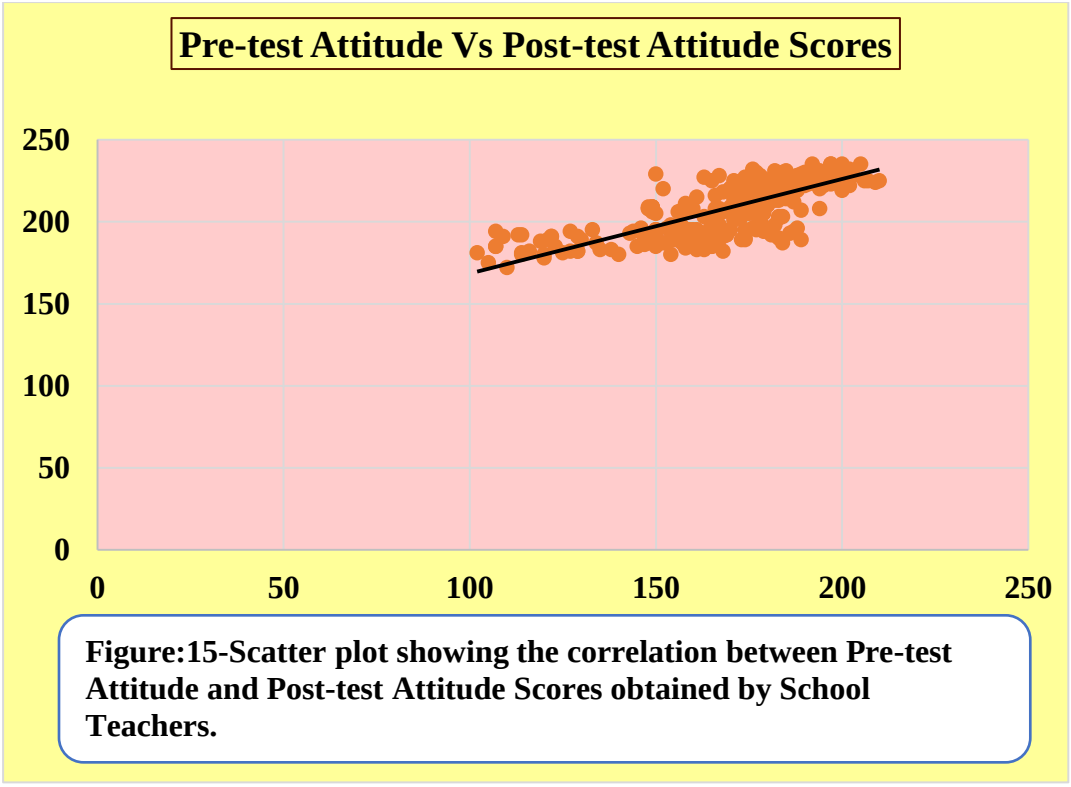

Figure:15-Scatter plot showing the correlation between Pre-test Attitude and Post-test Attitude Scores obtained by School Teachers.

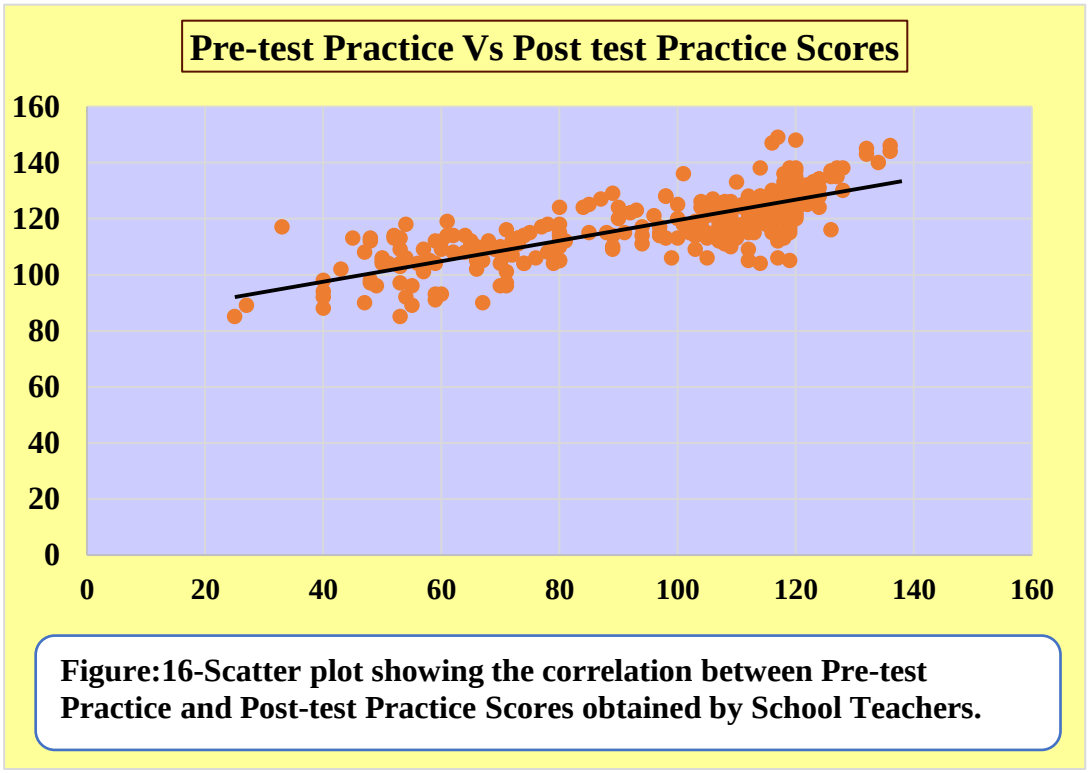

Figure:16-Scatter plot showing the correlation between Pre-test Practice and Post-test Practice Scores obtained by School Teachers.

Section F: Distribution of Association between Post-Test Knowledge, Attitude and Practice Scores on Learning Disabilities in Children and the Selected Socio-Demographic Variables of School Teachers

Table-19: Association between Post-Test Knowledge Scores on Learning Disabilities in Children and the Selected Socio- Demographic Variables of School Teachers.

N=350

Socio-demographic characteristics	Level of knowledge		Chi-square value	df	P value (sig)	Inference
	MAK	AK				
Age in years a) 20-40 b) 41-60	103 45	141 61	0.009	1	0.925	NS
Gender a) Male b) Female	31 117	43 159	0.006	1	0.938	NS
Educational qualification a) Diploma b) Under graduate c) Post graduate	11 84 53	191 13 70	0.431	2	0.806	NS
Marital status a) Married b) Unmarried	130 18	174 28	0.216	1	0.542	NS
Religion a) Hindu b) Muslim c) Christian	117 15 16	164 18 20	0.253	2	0.881	NS

Place of residence a) Rural b) Urban c) Semi-urban	64 76 08	72 107 23	4.762	2	0.092	NS
Type of school a) Government b) Private	04 144	01 201	-	-	0.086	NS
Type of family a) Nuclear b) Joint	115 33	150 52	0.551	1	0.458	NS
Type of Employment a) Temporary b) Permanent	105 43	144 58	0.005	1	0.845	NS
Monthly income (in Rs) a) <20,000 b) 20,001-40,000 c) >40,000	50 85 13	46 143 13	6.750	2	0.034	**SS at** **P<0.05**
Involved with group of students a) Lower primary b) Upper primary c) Both d) Other than primary class	40 30 66 12	61 52 76 13	2.747	3	0.432	NS

Location of school a) Urban b) Rural c) Semi-urban	69 73 07	91 80 21	3.861	2	0.145	NS
Specific role other than teaching a) Class teacher b) Subject teacher c) Both a and b	24 22 102	14 49 139	10.498	2	0.005	**SS at P<0.05**
Attended any training on Learning Disabilities. a) Yes b) No	21 127	33 169	0.302	1	0.583	NS
Total years of experience as a teacher: a) <10 yrs. b)11-20 yrs. c) >20 yrs.	95 45 08	126 67 09	0.407	2	0.816	NS
Previous exposure on learning Disabilities in curriculum a) Yes b) No	41 107	76 126	3.778	1	0.052	NS
Identified any child with LD a) Yes b) No	93 55	152 50	6.264	1	0.012	**SS at P<0.05**

Experience in children with learning disabilities a) Yes b) No	69 79	87 115	0.436	1	0.509	NS

SS-Statistically significant, NS-Not significant, df-degree of freedom.

Table-19 indicates the association between the post-test knowledge scores on learning disabilities in children and the selected socio- demographic characteristics of school teachers, which shows that the computed chi-square value for the specific role of the school teacher other than teaching with knowledge scores was 10.498 with df (2) is statistically significant at P<0.05, and for identification of any child with learning disabilities with knowledge scores it is 6.264 with df. (1) is statistically significant at P<0.05, and 6.750 with df (2) for the monthly income with knowledge scores, which is also statistically significant at P < 0.05.

However, none of the other socio-demographic variables, such as age, gender, marital status, religion, place of residence, type of family, type of employment, how teachers handled classes, total years of experience, any training programmes, etc., were not statistically associated with the post-test level of knowledge scores because the computed chi-square value was less than the P value (sig) 2-tailed.

As a result, the hypothesis $\mathbf{H_3}$, which claimed that there is a substantial association between teachers' knowledge, attitudes, and practices regarding learning disabilities in children with particular socio-demographic characteristics, is rejected, and the null hypothesis is accepted.

Table-20: Association between Post-Test Attitude Scores on Learning Disabilities in Children and the Selected Socio- Demographic Variables of School Teachers.

N=350

Socio-demographic Variables	Level of Attitude		Chi-square value	df	P value (sig)	Inference
	FA	HFA				
Age in years a) 20-40 years b) 41-60 years	94 34	151 71	1.136	1	0.287	**NS**
Gender a) Male b) Female	35 93	39 183	4.654	1	0.031	**SS at P<0.05**
Educational qualification a) Diploma b) Under graduate c) Post graduate	07 77 44	23 120 79	2.837	2	0.242	NS
Marital status a) Married b) Unmarried	107 21	197 25	1.883	1	0.170	NS
Religion a) Hindu b) Muslim c) Christian	103 09 16	178 24 20	2.193	2	0.334	NS

Place of residence a) Rural b) Urban c) Semi-urban	58 66 04	78 117 27	9.671	2	0.008	**SS at P<0.05**
Type of school a) Government b) Private	01 27	03 219	-	-	0.873	NS
Type of family a) Nuclear b) Joint	12 31	113 54	11.255	1	0.001	**SS at P<0.05**
Type of Employment a) Temporary b) Permanent	101 27	148 74	5.924	1	0.015	**SS at P<0.05**
Monthly income (in Rs) a) <20,000 b) 20,001-40,000 c) >40,000	33 85 10	63 143 16	0.289	2	0.865	NS
Involved with group of students / taking classes a) Lower primary b) Upper primary	32 28	69 54				

c) Both d) Other than primary class	65 03	77 22	12.940	3	0.005	**SS at P<0.05**
Location of school a) Urban b) Rural c) Semi-urban	53 68 07	106 95 21	4.196	2	0.123	NS
Specific Role which You Possess a) Class teacher b) Subject teacher c) Both a & b	14 19 95	24 52 146	3.790	2	0.150	NS
Attended any training on Learning Disabilities in Children a) Yes b) No	14 114	40 182	3.119	1	0.077	NS
Total years of experience as a teacher: a) <10 yrs. b) 11-20 yrs. c) >20 yrs.	87 36 05	134 76 12	2.067	2	0.356	NS
Previous exposure on learning Disabilities in curriculum						

a) Yes b) No	34 94	83 139	4.275	1	0.039	**SS at P<0.05**
Identified any child with learning Disabilities a) Yes b) No	76 52	169 53	10.848	1	0.001	**SS at P<0.05**
Experience in teaching children with learning disabilities a) Yes b) No	40 88	116 106	14.496	1	0.000	**SS at P<0.05**

SS-Statistically significant, NS-Not significant, df-degree of freedom

Table-20 describes the association between the post-test level of attitude scores on learning disabilities in children and the selected socio- demographic variables of school teachers where the computed chi-square value for gender with attitude scores was 4.654 with df (1) is statistically significant at P<0.05, for place of residence with attitude scores it is 9.671 with df (2) is statistically significant at P<0.05, It is 11.255 with df (1) for the family type with attitude scores, which is also statistically significant at P<0.05.

The calculated chi-square value for type of job with attitude scores is 5.924 with df (1), which is statistically significant at P<0.05. The derived chi-square value with df (3) for taking a class or a group of students involved by the teacher with attitude scores is 12.940, which is also statistically significant at P< 0.05.Last but not

least, the computed chi-square value for experience in teaching the children with learning disorders with attitude scores is 14.496 with df (1), which is statistically significant at P<0.05 for identified any child with learning disabilities with the attitude Scores it is 10.848 with df (1) which is statistically significant at P<0.05

However, when comparing the post-test level of attitude scores to the other socio-demographic variables, including age, marital status, religion, type of school, family, monthly income, classes handled by the teachers, location of the school, role of a teacher other than teaching, total years of experience, any training programme attended, etc., the computed chi-square value was less than the P value (sig) 2-tailed, so there was no statistically significant difference.

As a result, the hypothesis stated there is statistically significant association between knowledge, attitude, and practice about learning difficulties in children and the selected socio-demographic attributes of the school teacher **H_3** is rejected and the null hypothesis is accepted. **H_3** declared that there is no statistically significant association between knowledge, attitude, and practice about learning difficulties in children and the selected socio-demographic attributes of the school instructors.

Table-21: Association between Post-Test Practice Scores on Learning Disabilities in Children and the Selected Socio- Demographic Variables of School Teachers.

N=350

Socio-demographic Variables	Level of Practice		Chi-square value	df	P value (sig)	Inference
	GP	EP				
Age in years a) 20-40 years b) 41-60 years	130 53	115 52	0.197	1	0.657	NS
Gender a) Male b) Female	50 133	24 143	8.784	1	0.003	**SS at P<0.05**
Educational qualification a) Diploma b) Under graduate c) Post graduate	14 104 65	16 93 58	0.415	2	0.812	NS
Marital status a) Married b) Unmarried	158 25	141 21	0.090	1	0.764	NS
Religion a) Hindu b) Muslim c) Christian	149 15 19	132 18 17	0.682	2	0.711	NS
Place of residence a) Rural b) Urban c) Semi-urban	79 94 10	57 89 21	6.882	2	0.032	**SS at P<0.05**
Type of school a) Government b) Private	05 178	0 167	-	-	0.062	NS

Type of family a) Nuclear b) Joint	152 31	113 54	11.255	1	0.001	**SS at P<0.05**
Type of Employment a) Temporary b) Permanent	147 36	102 65	15.761	1	0.001	**SS at P<0.05**
Monthly income (in Rs) a) <20,000 b) 20,001-40,000 c) >40,000	57 110 16	39 118 10	4.318	2	0.115	NS
Involved with group of students. a) Lower primary b) Upper primary c) Both d) Other than primary class	44 41 87 11	57 41 55 14	8.531	3	0.036	**SS at P<0.05**
Location of school a) Urban b) Rural c) Semi-urban	71 100 12	88 63 16	10.077	2	0.006	**SS at P<0.05**
Specific Role other than teaching a) Class teacher b) Subject teacher c) Both a & b	18 27 138	20 44 103	8.545	2	0.014	**SS at P<0.05**

Attended any training on LD in Children a) Yes b) No	19 164	35 132	7.484	1	0.006	**SS at P<0.05**
Total years of experience as a teacher: a) ≤10 yrs. b) 11-20 yrs. c) >20 yrs.	123 54 06	98 58 11	3.718	2	0.156	NS
Previous exposure on LD in curriculum a) Yes b) No	49 134	68 99	7.627	1	0.006	**SS at P<0.05**
Identified any child with LD a) Yes b) No	106 77	139 28	26.636	1	0.001	**SS at P<0.05**
Experience in teaching the children with LD a) Yes b) No	62 121	94 73	17.746	1	0.000	**SS at P<0.05**

SS-Statistically significant, NS-Not significant, df-degree of freedom

Table-21 describes the association between the post-test level of practice scores on learning disabilities in children and the selected socio- demographic variables of school teachers, the computed chi-square value for gender with practice scores was 8.784 with df (1) is statistically significant at P<0.05, for place of residence with practice scores it is 6.882 with df (2) is statistically significant at

P<0.05.It is 11.255 with df (1) for the family type with practice scores, which is statistically significant at P<0.05.

The generated chi-square value for the employment type with practice scores is 15.761 with df (1), and at P<0.05, it is statistically significant. The calculated chi-square value for taking classes or a group of students the teacher is connected, with practice scores is 8.531 with df (3), which is statistically significant at P<0.05,For any training programme the instructors attended on learning difficulties, the practice scores were 7.484 with df (1), which is statistically significant at P<0.05 for the job position of the school teacher other than teaching with the practice score it is 8.545 with df (2) is statistically significant at P<0.05, for that role.Finally, the computed chi-square value for Experience in teaching the children with learning disabilities with practice scores is 17.746 with df (1), which is statistically significant at P<0.05 and for Identified any child with learning Disabilities with the practice scores, it is 7.627 with df (1), which is also found to be statistically significant at P<0.05.

But when comparing the post-test level of practise scores with the other sociodemographic characteristics, like age, education, marital status, religion, type of school, monthly income, and total years of experience—the computed chi-square value was less than the P value (sig) 2-tailed, indicating that there was no statistically significant association between these variables and the level of practice scores.

The hypothesis **H_3,** which claims that there is a significant association between knowledge, attitude, and practice related to learning disabilities in children and the selected socio-demographic characteristics of the school teachers, is therefore rejected, and the null hypothesis is accepted.

SECTION G: Description of ANOVA and Post-Hoc Test with the selected statistically Association on the Post-test Knowledge, Attitude and Practice scores with the Socio- Demographic Variables of School Teachers.

Table-22: Representation of ANOVA on the Post-Test knowledge Scores on Learning Disabilities in Children with Monthly Income of School Teachers.

N=350

Knowledge score	Monthly Income	Group (Source)	Sum of squares	df	Mean Square	F-Value (Sig) Inference
Post-test knowledge score	<20000	Between groups	1.64	02	0.82	**3.142*** (0.034) **SS at P<0.05**
	20000-40000	Within groups	83.77	347	0.24	
	>40000	Total	85.41	349		

*** SS: F-Value is statistically significant at P<0.05.**

In order to examine the differences between the three groups, a one-way ANOVA was performed on the post-test knowledge scores on learning disabilities in children with monthly income of school teachers. As shown in **Table 22,** the F value is 3.142, with the significant P value is 0.034, which is less than the confidence level (P<0.05), and it can thus be inferred that the teachers from the three groups differed in terms of their Post-test knowledge scores on understanding of learning disabilities in children.

Table-23: Representation of ANOVA on the Post-Test knowledge Scores on Learning Disabilities in Children with Role of a teacher other than teaching.

N=350

Knowledge scores	**Role of a teacher**	**Group (Source)**	**Sum of squares**	**df**	**Mean Square**	**F-Value (Sig) Inference**
Post-test knowledge score	Class teacher	Between groups	2.56	02	1.28	**5.365*** 0.005 **SS at P<0.05**
	Subject teacher	Within groups	82.85	347	0.23	
	Both	Total	85.41	349		

**** SS: F-Value is statistically significant at P<0.05.**

The post-test knowledge scores of learning disabilities in children with role of a teacher other than teaching were analysed in one way approach using ANOVA to check at the differences between the three groups. As shown in **Table 23,** there is a difference in the means of these three groups when the knowledge variable is taken into account, and this difference has a F value of 5.365 and a significant P value of 0.005, which is less than the confidence level (P<0.05). Thus, it could be assumed that the role of a teacher in the three groups and their understanding about learning disabilities in children at the time of the Post-test has got variation.

Table 24: Description on post-test knowledge scores with the different groups of monthly income status of school teachers by using Scheffe Post Hoc test.

DV: Post-test knowledge scores, **IV:** SDV (Multiple Comparisons) **Scheffe groups:** Monthly Income status of school teachers with three different categories.

N=350

Monthly Income I(Groups)	**Monthly Income J(Groups)**	**Mean Difference (I-J)**	**SE**	**(Sig) P-value/ Inference**	**95% Confidence Interval**	
					Lower Bound	**Upper Bound**
<20,000	20,000-40,000	-0.14*	0.05	0.048 **SS at P<0.05**	-0.29	-0.01
20000-40000	>40,000	-0.12	0.10	0.458 NS	-0.12	0.37
>40,000	<20,000	0.02	0.10	0.982 NS	-0.24	0.28

*** SS: The mean difference is statistically significant at P<0.05; NS-Not significant.**

Scheffe Post Hoc test was used to compare the groups two at a time in order to pinpoint exactly where the differences between the groups may be identified. The findings of the Scheffe Post Hoc test are shown in **Table 24,** and it shows that the groups with monthly incomes of less Rs 20,000 and between Rs 20,000 – Rs 40,000 were statistically significant at P<0.05 with a P-value of 0.048 at the 95% confidence interval. Nonetheless, the monthly income range of Rs 20,000 to Rs 40,000 and the group of Rs > 40,000 were not statistically significant at P<0.05, with a P-value of 0.458 at the 95% confidence interval. The group with monthly incomes of Rs.

>40,000 and Rs. 20,000 was also found to be not statistically significant at P > 0.05, with a P-value of 0.982 at 95% CI. Accordingly, the Post Hoc test results revealed that, in terms of their Post-test knowledge score variable, there was a statistically significant difference found between the respondents who's monthly income Rs 20,000 group and the monthly income of Rs 20,000 to Rs 40,000 group.

Table 25: Description on post-test knowledge scores with the different groups of Role of a teacher other than teaching by using Scheffe Post Hoc test.

DV: Post-test knowledge scores, **IV:** SDV (Multiple Comparisons) **Scheffe groups:** Role of a teacher other than teaching with three different categories

N=350

Role of a Teacher I(Groups)	**Role of a Teacher J(Groups)**	**Mean Difference (I-J)**	**SE**	**(Sig) P-value/ Inference**	**95% Confidence Interval**	
					Lower Bound	**Upper Bound**
Class teacher	Subject Teacher	0.32*	0.98	0.005 **SS at P<0.05**	-0.56	-0.08
Subject Teacher	Both	0.11	0.06	0.230 NS	-0.48	0.27
Both	Class teacher	0.20	0.85	0.052 NS	-0.00	0.41

*** SS: The mean difference is statistically significant at P<0.05; NS-Not significant.**

The Scheffe Post Hoc test was used to compare the groups two at the same time in order to determine exactly where the differences between the groups of Role of a teacher other than teaching could be identified. The results of the Scheffe Post Hoc test are presented in **Table 25,** where it is mentioned that the class teacher group and the subject teacher group proved statistically significant at $P<0.05$ with a P-value of 0.005 at 95% CI, respectively. However, the subject teacher group with the group of both jobs was not statistically significant at $P>0.05$, with a P-value of 0.230 at the 95% confidence interval, Additionally, it was discovered that the class teacher group with the group of respondents holding both positions was not statistically significant at $P>0.05$, with a P-value of 0.052 at 95% CI.As a result, the Post Hoc test findings confirmed that, in terms of the Post-test knowledge score variable, there was a statistically significant difference between the subjects who are included in the class teacher group with the subject teacher group.

Table 26: Representation of ANOVA on the Post-Test Attitude Scores on Learning Disabilities in Children with Place of Residence of School Teachers.

N=350

Attitude scores	**Place of residence**	**Group (Source)**	**Sum of Squares**	**df**	**Mean Square**	**F-Value (sig) Inference**
Post-test Attitude scores	Rural	Between groups	2.24	02	1..12	**4.930*** (0.008) **SS at P<0.05**
	Urban	Within groups	78.98	347	0.22	
	Semi urban	Total	81.18	349	-	

*** SS: F-Value is statistically significant at P<0.05.**

The Post-Test Attitude Scores of Learning Disabilities in Children with Place of Residence of School Teachers among the respondents were tested using one way ANOVA to examine the differences between the three groups. As shown in **Table 26,** the F value for the difference between the means of these three different groups of places of residence with the Attitude variable is 4.930, and the significant P value is 0.008, which is less than the confidence level of (P<0.05). As a result, the three groups differed in terms of their Post-test Attitude scores on learning disabilities in children.

Table 27: Representation of ANOVA on the Post-Test Attitude Scores on Learning Disabilities in Children with Handling Classes/ Groups Involved by School Teachers.

N=350

Attitude scores	**Handling classes**	**Group (Source)**	**Sum of Squares**	**df**	**Mean Square**	**F value (sig) Inference**
Post-test Attitude scores	Lower primary	Between groups	3.00	03	1.00	**4.428*** (0.005) **SS at P<0.05**
	Upper primary	Within groups	78.18	346	0.22	
	Both & Other than primary classes	Total	81.18	349	-	

*** SS: F-Value is statistically significant at P<0.05;**

In order to explore the differences between the four groups, a one-way ANOVA was performed to see if there is any association between the Post-Test Attitude Scores of Learning Disabilities in Children with Handling Classes/Groups Involved by School Teachers among the respondents. As shown in **table 27,** the difference in means between these four different groups on handling the classes with regard to the Attitude variable is where the F value is 4.428 and the significant P value is 0.005, which is below the confidence level (P< 0.05). Thus, it can be concluded that the four groups varied in terms of their Post-test Attitude scores towards children with learning difficulties

Table-28: Representation of ANOVA on the Post-Test Attitude Scores on Learning Disabilities in Children with Role of a teacher other than teaching.

N=350

Attitude scores	**Role of a teacher**	**Group (Source)**	**Sum of Squares**	**df**	**Mean Square**	**F-Value (Sig) Inference**
Post-test Attitude scores	Class teacher	Between groups	0.87	02	0.44	1.899 (0.151) NS
	Subject teacher	Within groups	80.30	347	0.23	
	Both	Total	81.18	349		

NS: F-Value is not statistically significant at P>0.05; NS-Not significant.

A one-way ANOVA was conducted to examine the differences between the three groups and see whether there is any association between the respondents' Post-Test Attitude Scores of Learning Disabilities in Children and Role of a Teacher Other Than Teaching. According to **Table 28,** there is a difference in the means of these three groups on the role of a teacher other than teaching when the Attitude variable is taken into account, and this difference has a F value of 1.889 and a significant P value of 0.151, which is higher than the confidence level of (P > 0.05). It is therefore possible to draw the conclusion that there was a mean difference between these three groups, but it was unrelated to the Post-test Attitude scores on children with learning disabilities.

Table-29: Description on Post-test Attitude scores with the different groups of places of residence of school teachers by using Scheffe Post Hoc test.

DV: Post-test Attitude scores, **IV:** SDV (Multiple Comparisons) **Scheffe groups**: place of residence of school teachers with three different categories

N=350

Place of Residence I(Groups)	**Place of Residence J(Groups)**	**Mean Difference (I-J)**	**SE**	**(Sig) P-value Inference**	**95% Confidence Interval**	
					Lower Bound	**Upper Bound**
Rural	Urban	-0.065	0.05	0.477 NS	-0.19	0.06
Urban	Semi-urban	-0.231*	0.09	0.045* **SS at P<0.05**	-0.45	-0.00
Semi-urban	Rural	0.297*	0.09	0.008* **SS at P<0.05**	0.06	0.53

*** SS: The mean difference is statistically significant at P<0.05; NS-Not significant.**

The Scheffe Post Hoc test was used to compare the groups two by two in order to identify exactly where the differences between each group of school teachers' areas of residence lie with the attitude scores. The findings of the Scheffe Post Hoc test are shown in Table 29, and they show that neither the rural nor the urban groups were statistically significant at P>0.05 with a P-value of 0.447 at 95% CI. but it was discovered that the semi-urban group with the urban group was statistically significant at P 0.05, with a P-value of 0.045 in the 95% confidence interval. Additionally, a statistically significant difference between the semi-urban and rural groups was identified at P 0.05, with a P-value of 0.008 in the 95% confidence interval. In light of

this, the Post Hoc test results revealed a statistically significant difference between the urban and semi-urban groups, as well as between the semi-urban and rural groups in terms of their Post-test Attitude score variable.

Table-30: Description on Post-test Attitude scores with the different groups of Role of a teacher other than teaching of school teachers by using Scheffe Post Hoc test.

DV: Post-test Attitude scores, **IV**: SDV (Multiple Comparisons) **Scheffe groups:** Role of a teacher other than teaching of school teachers with three different categories.

N=350

Role of a Teacher I(Groups)	**Role of a Teacher J(Groups)**	**Mean Difference (I-J)**	**SE**	**(Sig) P-value Inference**	**95% Confidence Interval**	
					Lower Bound	**Upper Bound**
Class teacher	Subject Teacher	-0.101	0.09	0.581 NS	-0.33	0.13
Subject Teacher	Both	0.126	0.06	0.151 NS	0.03	0.28
Both	Class teacher	0.021	0.08	0.954 NS	-0.23	0.18

The mean difference is not statistically significant at P>0.05; NS-Not significant.

The Scheffe Post Hoc test was utilised to compare the groups in order to pinpoint exactly where the differences between the groups of Role of a teacher other than teaching of school teachers with attitude scores**.** The findings of the Scheffe Post Hoc test are shown in **Table 30,** and they show that the subject teacher and class

teacher groups were not statistically significant at P>0.05 with a P-value of 0.581 at 95% CI. Additionally, it was reported that the subject teacher group with both role groups was also not statistically significant at P>0.05, with a P-value of 0.151 at 95% CI. Further, it was determined that neither the role of class teacher nor subject teacher group with the class teacher group was not statistically significant at P>0.05; the P-value at the 95% confidence interval is 0.954. As a result, Post Hoc test indicated that there was no statistically significant difference between the class teacher and the subject teacher. Additionally, both groups with class teacher groups were also found to be non-significant in terms of their Post-test Attitude score variable.

Table-31: Description on post-test Attitude scores with the different groups of Handling Classes/ Groups Involved by School Teachers by using Scheffe Post Hoc test

DV: Post-test Attitude scores, **IV:** SDV (Multiple comparisons. **Scheffe groups:** Handling Classes/ Groups Involved by School Teachers with three different categories **N=350**

Handling Classes I(Groups)	**Handling Classes J(Groups)**	**Mean Difference (I-J)**	**SE**	**(Sig) P-value Inference**	**95% Confidence Interval**	
					Lower Bound	**Upper Bound**
Lower Primary	Upper Primary	0.024	0.07	0.989 NS	-0.17	0.22
Upper Primary	Both	0.116	0.06	0.376 NS	-0.06	0.30
Both	Other than Primary	-0.337*	0.10	0.014* **SS at P<0.05**	-0.62	-0.04
Other than Primary	Lower Primary	0.196	0.10	0.331 NS	-0.10	0.49

*** SS: The mean difference is statistically significant at P<0.05; NS-Not significant.**

A Scheffe Post Hoc test was performed to compare the groups' attitude scores in order to pinpoint exactly where the differences between the handling classes or categories involved by school teacher's groups were identified. The results of the Scheffe Post Hoc test are shown in **Table 31**, and it was determined that neither the

Lower Primary Group nor the Upper Primary Group were statistically significant at P>0.05 with a P-value of 0.989 at 95% CI**.** Also, it was observed that the upper primary group with both groups was not statistically significant at P>0.05, with a P-value of 0.376 at the 95% confidence interval**.** However, both groups with the secondary group were determined to be statistically significant at P< 0.05, with a P-value of 0.014 at the 95% confidence interval. Other than the primary group and the Lower primary group, which were also determined to be non-significant at P>0.05 and P=0.331 at 95% CI. As an outcome, the Post Hoc test findings revealed a statistically significant difference between the groups other than the primary group, and both groups were found to be statistically significant in terms of the variable relating to their Post-test Attitude score.

Table-32: Representation of ANOVA on the Post-Test Practice Scores on Learning Disabilities in Children with Place of Residence of School Teachers.

N=350

Practice score	**Place of Residence**	**Group (Source)**	**Sum of Squares**	**df**	**Mean Square**	**F-Value (sig) Inference**
Post-test practice score	Rural	Between groups	1.71	02	0.85	**3.480*** (0.032) **SS at P<0.05**
	Urban	Within groups	85.60	347	0.24	
	Semi urban	Total	87.31	349	-	

*** SS: F-Value is statistically significant at P<0.05.**

To examine the differences between the three groups, one way ANOVA was used to investigate, if there is any similarity between the respondents' Post-Test Practice Scores for Learning Disabilities in Children and the place where the respondents reside. **As per Table 32,** the results show a difference in the means of these three groups on place of residence with the Practice variable, and this difference seems to have a F value of 3.480 and a significant P value of 0.032, which is lower than the confidence level (P< 0.05). Thus, it may be concluded that the three groups' means for the Practice scores on the Post-test for children with learning difficulties were different with the place of residence.

Table-33: Representation of ANOVA on the Post-Test Practice Scores on Learning Disabilities in Children with Handling Classes/ Groups Involved by School Teachers. N=350

Practice score	Handling Classes	Group (Source)	Sum of Squares	df	Mean Square	F-Value (sig) Inference
Post-test practice scores	Lower primary	Between groups	2.12	03	0.70	2.881* (0.036) **SS at P<0.05**
	Upper primary	Within groups	85.18	346	0.24	
	Both	Total	87.31	349	-	

*** SS: F-Value is statistically significant at P<0.05.**

In order to examine the differences between the four groups, one way ANOVA was used to determine whether there was any association between the Post-Test Practice Scores of Learning Disabilities in Children with the Handling Classes/Groups Involved by School Teachers among the respondents. **According to Table 33,** the four groups' means differed in terms of their practice scores on learning disabilities in children during the Post-test, as shown by the F value of 2.881 and the significant P value of 0.036, which is lower than the confidence level (P< 0.05). As a result, it can be concluded that the four groups' means differed in terms of their practice scores with the group of students involved by the school teachers.

Table-34: Representation of ANOVA on the Post-Test practice Scores on Learning Disabilities in Children with Role of a teacher other than teaching.

N=350

Practice score	**Role of a teacher**	**Group (Source)**	**Sum of Squares**	**df**	**Mean Square**	**F-Value (Sig) Inference**
Post-test practice score	Class teacher	Between groups	2.13	02	1.06	4.342* (0.014) **SS at P<0.05**
	Subject teacher	Within groups	89.18	347	0.24	
	Both	Total	87.31	349	-	

*** SS: F-Value is statistically significant at P<0.05.**

The Post-Test Practice Scores of Learning Disabilities in Children with Role of a Teacher Other than Teaching among the respondents were examined using one way ANOVA to examine the differences between the three groups. **As depicted in Table 34,** there was a mean difference between these three groups in terms of their Attitude scores on learning disabilities in children in the Post-test. The F value for the difference between the means of these three groups with the Practice variable is 4. 342.The significant P value is 0.014, which is significantly smaller than the confidence level at (P<0.05), where it can infer that these three groups' attitude scores on children with learning difficulties in the post-test varied significantly on the average with the role of a teacher other than teaching.

Table-35: Description on post-test Practice scores with the different groups of places of residence of school teachers by using Scheffe Post Hoc test.

DV: Post-test practice scores, **IV**: SDV (Multiple Comparisons) **Scheffe groups**: Place of residence of school teachers with three different categories

N=350

Place of Residence I(Groups)	**Place of Residence J(Groups)**	**Mean Difference (I-J)**	**SE**	**(Sig) P-value Inference**	**95% Confidence Interval**	
					Lower Bound	**Upper Bound**
Rural	Urban	-0.067	0.05	0.490 NS	-0.20	0.07
Urban	Semi-urban	-0.191	0.09	0.142 NS	-0.42	0.04
Semi-urban	Rural	0.258*	0.09	0.034***SS at P<0.05**	-0.01	-0.50

*** SS: The mean difference is statistically significant at P<0.05; NS-Not significant.**

Scheffe Post Hoc test was used to compare the groups with the post-test practise scores in order to figure out exactly where the differences between the Places of Residence of School Teachers reside. The result of the Scheffe Post Hoc test is presented in **Table 35**, and they indicate that neither of the rural nor the urban groups were statistically significant at P>0.05 with a P-value of 0.490 at 95% CI. However, it was established that both the urban and semi-urban groups were not statistically significant at P>0.05, with a P-value of 0.142 at the 95% confidence interval.

But, a statistically significant difference between the semi-urban and rural groups was established at P<0.05, with a P-value of 0.034 at the 95% confidence interval. In context of this, the Post Hoc test results revealed a statistically significant difference between the semi-urban group and the rural group in terms of their Post-test Practice score variable.

Table-36: Description on Post-test Practice scores with the different groups of Role of a teacher other than teaching of school teachers by using Scheffe Post Hoc test.

DV: Post-test practice scores, **IV:** SDV (Multiple Comparisons) **Scheffe groups:** Role of a teacher other than teaching of school teachers with three different categories.

N=350

Role of a Teacher I(Groups)	**Role of a Teacher J(Groups)**	**Mean Difference (I-J)**	**SE**	**(Sig) P-value Inference**	**95% Confidence Interval**	
					Lower Bound	**Upper Bound**
Class teacher	Subject Teacher	-0.093	0.09	0.645 NS	-0.33	0.15
Subject Teacher	Both	0.192*	0.06	0.017* **SS at P<0.05**	-0.02	0.35
Both	Class teacher	-0.098	0.58	0.520NS	-0.31	0.91

*** SS: The mean difference is statistically significant at P<0.05; NS-Not significant.**

The Scheffe Post Hoc test was used to compare the groups with practise scores in order to determine specifically where the differences between the groups of Role of a teacher other than teaching of school teachers. The findings of the Scheffe Post Hoc test are summarized in **Table 36,** where it is stated that neither the class teacher group nor the subject teacher group was statistically not significant at P>0.05 with a P-value of 0.645 at 95% CI**.** However, it was determined that the group of subject teachers and the teachers who served in both roles was statistically significant at P<0.05, with a P-value of 0.017 at the 95% confidence interval**.** Furthermore, it was determined both the role of class teacher and the subject teacher group with the class teacher group was not statistically significant at P>0.05, with a P-value of 0.586 at the 95% confidence interval. In account of the above-mentioned findings, the Post Hoc test results revealed that there is a statistically significant difference between the subject teacher group and both the roles handled groups in terms of their Post-test Practice score variable.

Table 37 Description on post-test Practice scores with the different groups of Handling Classes/ Groups Involved by School Teachers by using Scheffe Post Hoc test.

DV: Post-test practice scores, **IV:** SDV (Multiple Comparisons) **Scheffe groups:** Handling Classes/ Groups Involved by School Teachers with three different categories.

N=350

Handling Classes I(Groups)	Handling Classes J(Groups)	Mean Difference (I-J)	SE	(Sig) P-value Inference	95% Confidence interval	
					Lower Bound	Upper Bound
Lower Primary	Upper Primary	0.064	0.07	0.859 NS	-0.14	0.27
Upper Primary	Both	0.112	0.06	0.445 NS	-0.08	0.30
Both	Other than Primary	-0.172	0.10	0.463 NS	-0.47	0.12
Other than Primary	Lower Primary	-0.004	0.11	1.080 NS	-0.31	0.30

*** SS: The mean difference is statistically significant at P<0.05; NS-Not significant.**

The Scheffe Post Hoc test was performed to compare the groups with practise results and determine exactly where the differences between the Handling Classes Involved by School Teachers. Scheffe Post Hoc test results are shown in **Table 37,** and it was determined that neither the Lower Primary group nor the Upper Primary group were statistically significant at P>0.05 with a P-value of 0.859 at 95% CI. Moreover, it was reported that the upper primary group with both groups was not statistically significant at

P>0.05, with a P-value of 0.445 at the 95% confidence interval. Meanwhile, both the groups and the other than Primary Group groups were determined to be not statistically significant at P> 0.05, with a P-value of 0.463 at the 95% Confidence Interval, and other than the primary group, which was shown to be non-significant at P>0.05 and a P-value of 1.080 at the 95% confidence interval, The results of the Post Hoc analysis confirmed that there was no statistically significant difference in any of the groups of handling the classes with Post-test Practice score parameters.

SECTION H: Elucidation of Binary Logistic Regression analysis on selected socio-demographic variables significantly Associated with Post-test Knowledge, Attitude and Practice scores

Table 38: Binary Logistic Regression analysis of significantly associated socio-demographic factors of school teachers with Post-test Knowledge scores on learning disabilities in children. N=350

Variables	B	SE	df	Sig (P value)	Exp (βvalue) OR	95% Confidence Interval	
						Lower Bound	Upper Bound
Class teacher	0.926	0.36	01	0.120	0.396 NS	0.193	0.816
Subject teacher	0.489	0.29	01	0.096	1.630 NS	0.918	2.896
<20,000	0.210	0.45	01	0.644	1.234 NS	0.505	3.014
20,000-40,000	0.741	0.42	01	0.082	2.099 NS	0.911	4.837
Identified of Learning Disabilities(yes)	0.573	0.24	01	0.019*	1.773* **SS at P<0.05**	1.099	2.839

*** SS: Statistically significant at P<0.05 and OR>1, its Positive correlated/Associated; NS-Not significant.**

In order to find out which socio-demographic variables of school teachers are significantly associated with Post-test Knowledge scores on learning disabilities in children, **Table 38** describes the analysis of Binary Logistic Regression which revealed that the identification of learning disabilities, where the respondents had indicated yes, with P-Value 0.019 and Odds ratio value were 1.773 times greater with

the other factors since it was positively correlated with the knowledge scores are more likely to have sufficient increase in knowledge of learning disabilities in children than the other significantly Associated socio-demographic factors of school teachers where OR>1 and statistically significant at (P<0.05)

Table-39: Binary Logistic Regression analysis on significantly Associated socio-demographic factors of school teachers with Post-test Attitude scores on learning disabilities in children.

N=350

Variables	B	SE	df	Sig (P value)	Exp (βvalue) OR	95% Confidence Interval	
						Lower Bound	Upper Bound
Rural	-1.714	0.58	01	0.003*	0.180 SS	0.057	0.565
Urban	-1.479	0.57	01	0.010*	0.228 SS	0.074	0.703
Temporary basis	-0.591	0.27	01	0.032*	0.554 SS	0.323	0.949
Lower Primary	-1.190	0.66	01	0.075	0.304 NS	0.082	1.127
Upper Primary	-1.518	0.67	01	0.025*	0.219 SS	0.058	0.828
Both	-1.766	0.65	01	0.007*	0.171 SS	0.048	0.615
Experience in Teaching LD (yes)	0.849	0.24	01	0.001*	**2.338* SS**	1.452	3.764

*** SS: Statistically significant at P<0.05 and OR>1, its positive correlated/Associated; OR<1, its Negative correlated/Associated; NS-Not significant.**

In order to understand the substantially Associated socio-demographic factors of school instructors with Post-test Attitude scores on learning difficulties in children, **Table 39** on Binary Logistic Regression analysis revealed that the experience in teaching children with learning disabilities where the respondents had said "yes" was more positively correlated with the Attitude scores and more likely to have of 2.338 times increase towards attitude scores than the other significantly Associated socio-demographic variables of school teachers variables, where OR>1 which is statistically significant at (P<0.05)

Table-40: Binary Logistic Regression analysis on significantly Associated socio-demographic variables of school teachers with Post-test Practice scores on learning disabilities in children.

N=350

Variables	B	SE	df	Sig (P value)	Exp (βvalue) OR	95% Confidence Interval	
						Lower Bound	Upper Bound
Male	-0.849	0.31	01	0.006*	0.428 SS	0.233	0.786
Rural	-1.305	0.46	01	0.005*	0.271 SS	0.110	0.670
Urban	-0.937	0.44	01	0.035*	0.382 SS	0.164	0.937
Nuclear	-0.900	0.28	01	0.002*	0.407 SS	0.233	0.710
Temporary	-0.797	0.27	01	0.004*	0.451 SS	0.263	0.772
Class teacher	0.125	0.39	01	0.053*	1.133* SS	0.520	2.473
Subject teacher	0.809	0.31	01	0.009*	2.246* SS	1.223	4.125
Identified with LD (yes)	0.734	0.30	01	0.014*	2.084* SS	1.157	3.753
Experience in Teaching LD (yes)	0.568	0.26	01	0.030*	1.765* SS	1.057	2.946

*** SS: Statistically significant at P<0.05 and OR>1, its positive correlated/Associated; OR<1, its Negative correlated/Associated; NS-Not significant.**

In order to discover the significantly Associated socio-demographic characteristics of instructors with post-test practice results on children with learning difficulties, Binary Logistic Regression analysis was performed. According to **Table-40,** the results highlighted that, the role of the class teacher is 1.133 times

greater than the other aspects with the practice scores since it had a P-value of 0.053 which is statistically significant (P<0.05) where OR>1 it implies that the level of practice and the role as class teacher were positively associated each other. Additionally, the subject teacher role was also positively correlated with each of the significantly associated characteristics of teachers with the level of practice, with a P-Value of 0.009 and an odds ratio of 2.246 times increase in their practice level comparatively with other associated factors and statistically significant at (P<0.01) where OR > 1.

Similarly, the respondents' responses regarding the identification of learning difficulties those who had answered “yes” had a P-Value of 0.014 and an odds ratio value of 2.084 times adequate increase in level of practice with other associated characteristics, which is statistically significant (P<0.05), where OR > 1, and were positively correlated with the level of practice.

In addition to all these factors, another attribute on experience in managing the children with learning disabilities of which whom had reported “yes “is 1.765 times more likely to have sufficient/increase in level of practice than the other significantly associated socio-demographic characteristics of instructors in schools with the P-Value 0.030 which is statistically significant (P<0.05), where OR>1, its Positive Associated with the Practice scores of school teachers.

This chapter was dealt with the data analysis and interpretation of the data collected from the school teachers. Tables, diagrams and graphs are plotted to depict. The results of the analysis showed that the Competency Based Teacher Education (CBTE) training module was effective in improving the knowledge, attitude and practices of school teachers on learning disabilities in children.

DISCUSSION

CHAPTER-VI

DISCUSSION

This chapter provides a thorough explanation of the present study main findings, which were attained by adhering to the planned statistical analysis. The study goal was to evaluate the impact of competency-based teacher education (CBTE) training modules on school teachers' knowledge, attitudes, and practices (KAP) about learning disabilities in children at selected schools in the Kolar district." In accordance with the study goal, data was gathered and analysed. The results of studies conducted by other researchers that were similar to this study have been used to discuss the study findings.

THE STUDY'S OBJECTIVES:

1. To measure the level of Knowledge, Attitude & Practice of School teachers regarding learning disabilities in children by using structured questionnaires.
2. To determine the impact of Competency Based Teacher Education (CBTE) training module on the level of knowledge, attitude and practices of school teachers regarding learning disabilities in children by comparing the pre-test and post-test scores.
3. To establish the correlation between knowledge, attitude and practices of school teachers on learning disabilities in children with Pre-test scores.
4. To find out the association between knowledge, attitude and practice scores on learning disabilities in children with the selected socio-demographic variables of school teachers.

RESEARCH HYPOTHESES:

H_1: There is a significant difference between pre-test knowledge, attitude and practice scores of school teachers regarding learning disabilities in children before and after the implementation of Competency Based Teacher Education training module.

H_2: There is a significant relationship between knowledge, attitude and practice of school teachers towards learning disabilities in children.

H_3: There is a significant association between knowledge, attitude and practice on learning disabilities in children with the selected socio-demographic variables of the school teachers.

MAJOR FINDINGS AND DISCUSSION:

Section I: Distribution of Socio-Demographic and Professional Characteristics School Teachers from Selected Schools in Kolar.

Demographic characteristics are described as follows:

The study sample comprises 350 teachers from selected schools in Kolar. Of the total study participants, 175 (40%) of the teachers were in the age of 31 and 40, with a mean age of 37.52. In terms of gender, there was maximum of 276 (78.9%) females and 74 (21.1%) males.

Among the school teachers, 300 of them (85.7%) were married. In terms of religion, 281 (85.7%) were Hindus, 33 (09.4%) were Muslims, and 36 (10.3%) were Christians.

Regarding their place of residence, 183 (52.3%) of them were from urban areas. Regarding the type of school, 345 respondents (98.6%) were from private schools, while just 05 teachers (1.4%) were employed in government school.

Depending on the type of family, 85 (24.3%) belonged to a joint family, while 263 (75.1%) were from a nuclear family.

Description of the professional attributes:

More over half of the teachers, 197(56.3%) of them, were undergraduates in terms of educational background and type of work, 231(66.0%) teachers were appointed on a temporary basis and 101 (28.9%) of the employees were permanent basis. In regard of the average monthly income per individual, the majority of school teachers made between Rs 10,000 and 20,000 per month, with 96 (27.4%) making less than Rs 10,000 per month.

In regard to school teachers getting involved with the group of students or handling classes, 142(50%) study participants stated that they were in charge including both lower primary and upper primary classes. Regarding the specific roles that school teachers perform in addition to teaching, many teachers that is 231 (66.0%) identified themselves as class teachers and subject teachers.

Regarding the management of learning disabilities in children, nearly 296 teachers (84.6%) stated that they had not attended any training programmes, and only 37 respondents (10.6%) said they had attended some online sessions, though not specifically on identifying learning disabilities in children.

Regarding prior exposure to learning disabilities as a part of the curriculum, 223 (66.6%) of the teachers stated that they had no prior exposure to the subject. In terms of the overall number of years of experience as teachers, 123 (35.1%) have

between 06 and 10 years of experience, 98 (28.0%) have less than 5 years, and 17 (4.9%) of the teachers have more than 20 years of teaching experience.

Regarding identified any students with learning disabilities while performing their duties, majority 245 (75%) of the teachers responded in the affirmative, and of those, 155 (44.3%) had noticed multiple types of learning disabilities, such as dyslexia, dysgraphia, dyscalculia, etc. However, 194 (55.4%) of them said they had no experience in managing the children with learning disabilities.

The results of the subsequent studies corroborate the aforementioned conclusions.

A study was conducted on knowledge regarding learning disabilities in children among primary school teachers exhibited the majority of primary school teachers (98.57%) were female, with just 1.43% being male. Nearly half of them (41.42%) were between the ages of 31 and 40. The majority of teachers' degrees (74.29%) were in education. more than half of educators in primary schools, (55.72%) of those who had taught had done so for more than 8 years, followed by 27.14% for 4 to 7 years and 17.14% for zero to three years. The majority of primary school teachers attended English-medium schools, while the remaining 10% attended Hindi-medium schools. Only 5.71% of the 70 primary school teachers had previously attended in-service training on learning impairments. 4.29 percent of primary school teachers were affected by learning impairments.[(60)]

Similarly, another study conducted on the knowledge and attitudes of Thai primary school teachers concerning inclusive education of children with learning

difficulties. Results pertaining to participant profiles reveal that there are more female instructors than male teachers, and the majority of them are between the ages of 31 and 50. The majority of respondents have at least six years of relevant teaching experience and a bachelor's degree. Nearly all teachers specialize in general education, and just a small number are in other fields or special education. The majority of the respondents had not received special education training, and two thirds of the respondents have never taught kids with disabilities in a classroom.[76]

In accordance to the findings one more study also resembled on the present study findings which is on the effect of educational module on understanding of primary school teachers regarding early indicators of childhood psychiatric problems which revealed that the subjects mean ages were 36.37 years (SD: 9.4) and 11.43 years (SD: 7.4), respectively. The majority of the subjects (97%) were women. The majority of the individuals (85%) were married, and the majority (80%) practised Hinduism. 77% of the respondents, or three-fourths, were raised in nuclear families. 54 percent of the participants reported having a monthly family income between Rs. 10,000 and 20,000. More over half (57%) of the subjects had a bachelor's degree in education as their highest level of education. The majority of the subjects (68%) were taught in elementary schools. In the previous year, 50% of the individuals (51%) had encountered children with psychological issues. In their teacher training, the majority of the subjects (74%) had taken courses on childhood psychiatric illnesses. More than half of the subjects (57%) never participated in an in-service training course on paediatric psychological problems. More than half (67%) of the participants said they lacked confidence in their ability to recognize a kid with a childhood psychological

disease, and all agreed that there should be regular in-service training sessions on paediatric psychiatric disorders.[77]

Section 2: The first objective was to evaluate the degree of knowledge, attitude, and behaviours of school teachers in relation to learning difficulties in children with the use of structured questionnaires.

Level of Knowledge, Attitude, and Practice Pre-Test Score Distribution,

According to the pre-test knowledge level in this study, just 7 (02%) of the school instructors had adequate knowledge, while the majority of them, 254 (72.6%), had only somewhat adequate knowledge. Regarding attitude, only 08 (2.3%) of the school teachers had a highly favourable attitude, while none of them had an unfavourable attitude before the exam, while the bulk of them, 272 (77.7%), had a favourable attitude. In terms of practice, only 7 (2.0%) of the school teachers had poor level of practice (below average) in the pre-test, compared to 217 (62.0%) who had good level of practice, 96 (27.4%) who had satisfactory level of practice (average), and 30 (08.6%) who had excellent level of practice in managing the students with learning disabilities in the classroom.

Distribution of Post-Test Results for Knowledge, Attitude, and Practice Level:

The majority of the study subjects, 202 (57.7%), had acceptable knowledge in the post-test, while 148 (42.3%) of them had moderate adequate knowledge. None of the study participants had inadequate knowledge in the post-test about learning difficulties in children. In terms of attitude, the majority of them had either a highly favourable attitude or a favourable attitude, with 222 (63.4%) and 128 (36.6%) respectively, while none of them had either a moderately favourable attitude or an

unfavourable attitude under the post-test. Regarding the practice scores, it is said that a greater number of 167 school instructors (47.7%) and 183 (52.3%) had good levels of practice, respectively, but none of the study subjects had poor levels of practice (below average) and satisfactory levels of practice (average) in the post-test.

Several related research have supported the conclusions presented above:

A study entitled on the effect of Instructional Training Package on level of knowledge and practice among primary school teachers regarding identification and management of selected learning disabilities in children where the results show that among primary school teachers, the overall level of knowledge in identifying and treating specific learning disabilities in children was calculated as follows: 3 (10%) had insufficient, 26 (86.7%) had moderately adequate, and only 1 (3.3%) had adequate level of knowledge in the pre-test. In contrast, all 30 participants (100%) in the post-test exhibited sufficient knowledge of the identification and treatment of specific learning disorders in children. The pre-test results showed that, overall, among primary school teachers, 4 (13.3%) had insufficient level of practice, 11 (36.7%) had moderately appropriate level of practice, and 15 (50%) had adequate level of practice in identifying and managing selected learning problems in children. However, in the post-test, all 30 participants (100%) demonstrated a sufficient level of competence in the detection and treatment of specific learning disorders in children. This change was made possible through the administration of the instructional training programme, which included a presentation on the identification and management of specific learning disabilities, a group discussion, and the distribution of an information booklet developed for primary school teachers on the

identification and management of specific learning disabilities (dyslexia and dyscalculia).[37]

The results of another study also correspondence to the above findings which is on the study tilted effectiveness of planned teaching programme among primary school teachers on awareness of cognitive difficulties in children, validated the current findings states that a majority of primary school teachers (90%) had insufficient knowledge about learning difficulties, while 10% had a moderate level of knowledge. However, in the post-test, 7.5% had a moderate level of knowledge and 92.5% had an appropriate level of knowledge, which is consistent in some respects.[40]

Additional data from another study also concurrent with the findings on the effectiveness of guidelines for training school teachers in the diagnosis and management of students with specific learning difficulties indicates that the minimum score for trainee school teachers was 1 (0.37%) and the maximum correct score was 89 (33.09%). When comparing the overall mean percentage that trainee school teachers scored on different items, it was discovered that they had insufficient knowledge (50%) at the pre-test level. When comparing the total frequency and percentage of favourable (50%-75%) attitude scale scores acquired by trainee school teachers on various items, it was discovered that these scores were relatively high. This development was made possible by the recommendations that helped new school instructors gain better knowledge and attitudes. Given the crucial role primary level instructors play in a child's education, it is crucial that the course or teachers

training programme provide the teachers with knowledge and a positive attitude toward students with SLDs.[43]

Section 3: The comparison of the pre-test and post-test results was used to ascertain the effectiveness of the Competency Based Teacher Education (CBTE) training module on the knowledge, attitude, and behaviours of school teachers about learning disabilities in children.

Impact of Competency Based Teacher Education CBTE Training Module by Evaluating Pre-Test and Post-Test Score Differences:

According to the findings of the current study, the pre-test mean scores on the level of knowledge, attitude, and practices of school teachers regarding children with learning disabilities were 29.42, 169.84, and 98.31, respectively, and the post-test scores were 38.35, 208.69, and 118.88 for each variable where the mean scores for knowledge increased by 8.961, attitude increased by 16.403, and practice increased by 20.574 between the pre-test and post-test. and the paired 't' test results with mean comparisons reveal 49.182 for knowledge, 51.798 for attitude, and 21.573 for practice, with statistical significance at $P<0.05$ and degree of freedom at 349, respectively. Therefore, it can be inferred that the CBTE training module is very helpful in enhancing school teachers' knowledge, attitude, and professional practice regarding children with learning difficulties.

A similar study supported the conclusions mentioned above:

In research to assess the impact of an instructional training package (ITP) on primary school teachers' level of knowledge and practice in the diagnosis and

management of certain learning disorders in children, The results of the study show that, according to the calculated paired 't' (t29 = 24.72, P<0.01), the overall mean post-test knowledge score (27.53±1.306) was significantly higher than the mean pre-test score (16.90±2.339). According to the calculated paired 't' (t29 = 10.73, P<0.01), the overall mean post-test practice score (19.73±0.740) was significantly higher than the mean pre-test score (13.77±2.967) which is because the Instructional Training Package (ITP) is a useful instrument for raising primary school teachers' level of knowledge and practice regarding the identification and management of SLD in children.[37]

The results of another study, also correlates with the present study findings which is determined in the study conducted on a study to evaluate the effectiveness of self-instructional module regarding learning disabilities of primary school children among primary school teachers in selected schools, support the findings of the current study where the results show that the experimental group's pre-test mean score and standard deviation were 16.6 and 3.03, respectively, and the post-test mean score and standard deviation were 33.3 and 2.01. The P value was 22.61 and P=0.001; in these primary schools, the teachers' understanding of learning difficulties increased from 16.62 to 33.3. The comparison of pre-test and post-test knowledge scores revealed that the primary school teachers' knowledge had only slightly improved in the control group, with the pre-test mean score and standard deviation being 17.23±2.06 and the post-test mean score and standard deviation being 19.13±2.11 (t=1.93, P=0.06). In terms of knowledge scores, there is no discernible difference between the experimental and control groups in the pre-test. However, after completing the self-education module, a significant difference between the

experimental and control groups was found. The difference between the pre-test and post-test knowledge scores was 41.50% to 83.25%. After receiving the self-instructional module, the teachers learn 41.75 percent more about learning impairments. This study's net benefit, which is a 41.75 percent increase in knowledge, shows how effective the self-instructional module is.[46]

Therefore, the hypothesis $\mathbf{H_1}$ that there is a substantial change in the knowledge, attitude, and practice scores of school teachers about learning disabilities in children before and after the implementation of Competency Based Teacher Education training module is accepted.

Section 4: The third objective was to determine the relationship between instructors' pre-test scores and their knowledge, attitudes, and practices regarding learning difficulties in students.

The distribution of correlation between pre-test knowledge, attitude, and practices as well as on the relationship between the matched samples is as follows:

The current research provides evidence of the pre-test knowledge, attitude, and practice scores' association, which indicated a statistically significant potential or negligible positive correlation between knowledge and attitude variables ($r=0.20$, $P<0.05$). Between practice variables and attitude, there is a statistically significant moderate positive connection ($r=0.55$, $P<0.05$), while between knowledge and practice variables, there is a statistically significant low positive correlation ($r=0.30$, $P<0.05$).

The study also discussed the link between the knowledge, attitude, and practice scores from the pre- and post-tests using paired samples, and the results showed that there is a strong positive correlation between the knowledge scores from the pre- and post-tests ($r=0.811$, $P<0.05$). Next, there is a strong positive correlation ($r=0.759$, $P<0.05$) between pre-test and post-test Attitude scores. There is a highly statistically significant positive connection between pre-test and post-test practice scores ($r=0.797$, $P<0.001$). It implies that as the pre-test score rises, the post-test knowledge, attitude, and practice score increase as well, or vice-versa.

The results were supported by comparable earlier studies:

The survey of primary school teachers' knowledge and attitudes regarding children with learning disabilities in particular schools was carried out which demonstrates that a strong correlation was observed between teachers' attitudes toward students with learning disabilities and their awareness of these conditions. With a table value of 0.254 and a correlation coefficient of +0.60 ($P<0.001$), it was discovered.[(78)]

Another study also resembles the similar findings which is carried out on primary school teachers' knowledge and attitude towards inclusive education of children with specific learning disabilities is available. According to the study's findings, 51% of participants had a favourable attitude toward the inclusive education of kids with particular learning difficulties, and 63% of participants have an average level of understanding. The study discovered a strong relationship between instructors' attitudes toward inclusive education and their knowledge of the subject.[(67)]

According to research on the knowledge and attitudes of school instructors toward children with learning disabilities, there is a favourable association between teachers' attitudes toward these kids and their knowledge of learning disabilities. A higher level of knowledge was linked to a more optimistic attitude, as indicated by the correlation coefficient, which was found to be +0.833 with a significance level of 6.3. The study's conclusion was to create a self-instructional module on learning disabilities based on teachers' attitudes and knowledge. It enables encouraging teachers to actively participate in their own education and keep up with new information. improving their capacity to recognize and handle these kids, or they can be correctly referred.[(79)]

The current research on the relationship between teachers' attitudes, practices, and knowledge of students with learning difficulties is consistent in several ways. As a result, the hypothesis $\mathbf{H_2}$ claimed that there is a substantial relationship between school instructors' knowledge, attitude, and practice regarding children with learning difficulties. is approved.

Section 5: The fourth objective was to determine the association between students' knowledge, attitudes, and practice scores on learning disorders and the chosen sociodemographic factors of school teachers.

An analysis of the association between post-test knowledge, attitude, and practice scores and a subset of school teachers' sociodemographic characteristics:

The results of the study on the Relationship Between Post-Test Knowledge Scores and Selected Socio- Demographic Factors of School Teachers shows that the statistical significance level at $P<0.05$ for the specific job of the school teacher other than teaching, for identifying any children with learning impairments, and for the monthly income with knowledge scores.

Similar to this, there is an association between school teachers' selected sociodemographic characteristics and their post-test attitude scores which states that the gender, for the location, the kind of family, the type of employment, for the classes or student group involved by the teacher, for the identification of any child with a learning disability, and finally with Experience in teaching the children with a learning disability with attitude scores was found statistically significant at $P< 0.05$.

In relation to practice, the Association between the Post-Test Level of Practice Scores and the Selected Socio- Demographic Variables of School Teachers shows gender, place of residence, type of family, type of employment, classes or groups of students involved by the teacher, the specific role of the school teacher other than teaching, any training programme participated by the teachers on learning disabilities, for identification of any child with learning disabilities and finally, with Experience in teaching children with learning difficulties with practice, the scores were shown to be statistically significant at $P < 0.05$.

Similar findings from earlier studies supported the present findings:

A study carried out to assess the impact of an instructional training package (ITP) on primary school teachers level of knowledge and practice in the diagnosis

and management of certain learning disorders in children is congruent with the findings, where the study findings suggest that there was a highly substantial correlation between the pre-test practice scores of primary school teachers and their knowledge of how to identify and treat specific learning disorders in children with particular sociodemographic characteristics and academic characteristics such education ($\chi 2 = 21.690$, $P<0.01$), years of experience ($\chi 2 = 13.970$, $P<0.030$), and highly significant experience in dealing with children with learning disabilities ($\chi 2 = 30$, $P<0.01$).[37]

Another study on teacher's attitudes and awareness of learning difficulties is being conducted confirmed the present results which demonstrates the association between attitude and sociodemographic factors. This study revealed no association between attitude and factors including age, gender, and educational attainment. There was no association between the teacher's attitudes and their knowledge of learning disabilities ($P=0.423$).

One more study conducted on the knowledge and attitudes of primary school instructors toward students with learning difficulties in certain schools also compared the similar results which shows that there was no statistically significant correlation between the knowledge scores of school teachers and their demographic factors, such as age, sex, marital status, educational attainment, and years of experience ($P<0.05$). Using the Chi Square Test, the association between demographic factors and attitude scores was shown to be statistically significant for age ($P\leq0.012$) and married status ($P\leq0.000$) of school teachers; Although there was no association between the attitude

scores of school teachers and their gender, educational background, or years of experience (P≤0.05).[80]

Another study examined the impact of planned teaching programmes on students' knowledge of certain learning disabilities also resembled the findings which reveals that pre-test knowledge grade is independent of the variable attended any conferences or workshops on learning disabilities of the school teachers, as there was no statistically significant correlation detected between demographic characteristics and pre-test knowledge.[41]

With regard to the earlier studies that have been published, these findings are in conflict and weaken them. As a result, the hypothesis **H_3,** which claimed that there is a substantial relationship between teachers' knowledge, attitudes, and practices regarding learning difficulties in children and particular sociodemographic characteristics, is disproved, and the null hypothesis is accepted.

This chapter discussed how the findings of the current study compared to those of earlier studies.

SUMMARY

CHAPTER -VII

SUMMARY

This chapter discusses the key findings of the researcher's analysis of the study, which will provide an overview of the status of the study's central hypothesis. All children have the capacity and desire to study. They pick things up at various rates and in diverse ways. They can shine when it is best for them if we can meet their requirements and offer a secure and supportive atmosphere. Teachers and members of loving families who work with children who have learning difficulties face significant challenges since these children need ongoing assistance in order to adjust to new learning environments. The achievement of students with learning difficulties depends on how well the school staff responds to their needs. The purpose of the study was to assess the effectiveness of a competency-based teacher education (CBTE) training module on school teachers' knowledge, attitudes, and practices (KAP) with relation to children with learning disabilities.

The following objectives were set in order to accomplish the aforementioned aim:

1. To examine school teachers' level of knowledge, attitudes, and practices about learning disabilities in children using standardized questionnaires.
2. To compare the pre-test and post-test results in order to assess the impact of the Competency Based Teacher Education (CBTE) training module on the knowledge, attitude, and behaviours of school teachers about learning disabilities in children.

3. To determine the relationship between pre-test scores and teachers knowledge, attitudes, and practices about learning difficulties in children.
4. To ascertain the association between knowledge, attitude, and practice scores on children with learning disabilities and the chosen socio-demographic factors of school teachers

The researcher's hypotheses are as follows in order to fulfil the aforementioned objectives:

H_1: There is a significant difference between the pre-test and post-test knowledge, attitude, and practice scores of school teachers addressing learning disabilities in children before and after the implementation of the Competency Based Teacher Education training module.

H_2: There is a significant correlation between school instructors' knowledge, attitudes, and practices regarding children with learning difficulties.

H_3: There is a significant association between teachers selected sociodemographic characteristics and their knowledge, attitudes, and practices regarding learning disabilities in children.

This was a pre-experimental study that was conducted in the months of December 2021 to March 2022 with a single group Pre-test and Post-test design. From both private and public schools in Kolar, 350 teachers who were in charge of the courses for primary school pupils were chosen at random as study participants using the multistage cluster sampling approach and the school teachers who had prior experience working as counsellors and in special schools were excluded from this study. A 150-item structured questionnaire containing background profile and

questions about teachers' knowledge, attitudes, and practises about children with learning difficulties was used to gather data using a self-administrated technique. Using Daniel Stufflebeam's CIPP (Context, Input, Process, and Product) paradigm, a conceptual framework was created. and the data were adequately described and interpreted using both the descriptive and inferential statistical approaches. The study main findings have been outlined below in the context of the following hypothesis.

KEY RESULTS OF THE STUDY:

It is logical to attempt drawing a conclusion about which intervention was the most beneficial and which study variables improved the best based on the study findings and the discussion of those findings. It is highly unreasonable to assume that one group research study will automatically become the preferred or finest when compared to others. The study summary is as follows:

Regarding the socio-demographic characteristics of school teachers:

1. The majority of school teachers **175 of them, or 40%** were in the 31–40 age range, with a mean age of 37.52 for the group.
2. In terms of gender majority **276(78.9)** were females
3. More than half **(56.3%) of the 197** teachers had undergraduate degrees in terms of education.
4. The majority of the **300 (85.7%)** school teachers were married when it came to their marital status.
5. In terms of religion.**281 of them (85.7%)** identified as Hindus
6. Regarding their location of residence, **183 (52.3%)** of them were primarily from urban areas.

7. In terms of the type of school, **345 respondents (98.6%)** were from private institutions.
8. Regarding family pattern, **263 participants (75.1%)** belonged to nuclear families.
9. According to the kind of employment **231 (66.0%)** of the school teachers were employed on a temporary basis.
10. In terms of average monthly income per person, the majority of the **228 school teachers (68.1%)** made between Rs10,000 and Rs20,000 per month.
11. Half of the **142 respondents (40.6%)** said they were handling both lower primary and upper primary classes or groups of students when it came to school teachers getting involved with children or managing classes.
12. More respondents, **231 (66.0%)** said that they were class teachers as well as specialty teachers in addition to their primary position as a teacher in the classroom.
13. With regard to any training programmes for school instructors who handle students with learning difficulties, over **296 respondents (84.6%)** said they have not participated in any.
14. When asked if they had any prior knowledge of learning difficulties as a component of the curriculum, the majority of the **223 teachers (66.6%)** stated that they did not.
15. Out of the total number of years of experience **123 teachers (35.1%)** have 6 to 10 years of teaching experience,
16. When asked whether they had observed or identified any children with learning disabilities during their time as teachers, **245 (75%)** of the teachers primarily responded "yes." and moreover, **155 (44.3%)** of the teachers said

they have recognized many areas of learning difficulties, such as dyslexia, dysgraphia, dyscalculia, etc. But when asked if they had any experience managing or teaching students with distinct learning difficulties, **194 (55.4%)** of them stated they did not.

Findings on teacher's knowledge, attitudes and practices pertaining to learning disabilities in children.

The below mentioned Pre-test results were discovered before to the intervention:

With regard to knowledge, 89 (25.4%) of school teachers possessed insufficient understanding, **254 (72.6%)** had only moderately adequate knowledge, and just **07 (02%)** had necessary adequate knowledge about learning disorders in children.

Regarding attitude, Among the school instructors, just **08 (2.3%)** had an extremely favourable attitude, while not one of them had an unfavourable attitude according to the pre-test. Most of the teachers, **272 (77.7%),** had a favourable attitude.

As concerned with practice, Among the school instructors, **217 (62.0%)** had an excellent level of practise, and **96 (27.4%)** had a middling level (average), and 30 (08.6%) had exceptional practice in handling those students who have learning difficulties in the classroom, while only **07 (2.0%)** performed poorly (below average) in the pre-test.

After the intervention, the following Post-test results were found:

By the way of knowledge, 202 of them (57.7%) had adequate knowledge, while **148 (42.3%)** of the school instructors had moderate adequate knowledge. In the post-test regarding learning difficulties in children, not a single study participants had inadequate knowledge.

Concerning attitude, most of them **222 (63.4%)** had a highly favourable attitude and **128 (36.6%)** had a favourable attitude, but neither of them scored moderately or unfavourably attitude on the post-test.

Regarding practice, a higher percentage of school teachers,**167 (47.7%)** had excellent levels, and **183 (52.3%)** had good levels in managing students with learning disabilities in the classroom. In contrast, none of the research participants exhibited subpar levels of practice (below average) or satisfactory levels (average) in the post-test.

Results on Comparison of Pre-Test and Post-Test Scores on School Teachers' Knowledge, Attitude, and Practices Regarding Learning Disabilities in Children Provides Evidence of the Effectiveness of the CBTE Training Module.

Prior to the CBTE training module's implementation:

The aggregate mean scores and standard deviation from the Pre-test on school teachers' extent of knowledge, attitude, and practices related to learning disabilities in children are **29.42** and **SD 5.53** for knowledge, **169.84** and **SD 21.55** for attitude, and mean scores of **98.31** and **SD 26.79** for practices, respectively.

Following the deployment of the CBTE training module:

Post-test results show that the mean and standard deviation for knowledge is **38.35** and **3.45** respectively, for attitude they are **208.69** and **16.40,** and for practice it is **118.88** and **11.85.**

Assessing the outcomes by contrasting the Pre-Test and Post-Test results of the CBTE training module:

There was a steady improvement for each variable between the knowledge on the Pre-test and Post-Test mean scores were **8.96,** attitude average enhancement was **16.40,** and practice mean enhancement was **20.57**. The comparison of mean difference and the paired 't' test values shows **49.18 for knowledge**, **51.79 for attitude**, and **21.57 for practice**, respectively. At a significance level of $P<0.05$, these findings are statistically significant.

Findings On the Relationship Between School Teachers' Knowledge, Attitude, and Practices Regarding Children with Learning Disabilities.

Relationship between knowledge, attitude, and practices from pre-test.

Pre-test knowledge, attitude, and practice variables were correlated, and the findings revealed that knowledge and attitude variables had statistically significant potential or negligible positive correlations **($r=0.20$, $P<0.05$),** while attitude and practice variables have moderately positive relationships that are statistically significant **($r=0.55$, $P<0.05$),** and knowledge and practice variables have statistically significant low positive correlations with **($r=0.30$, $P<0.05$)** level of significance in relation to the pre-test.

Sample paired correlation including knowledge, attitude, and practice on the pre- and post-tests:

The findings of the paired sample study on the relationship between before and after testing on knowledge, attitude, and practice scores towards learning disabilities in school-age children shows a strong positive correlation between pre-test and post-test knowledge scores **(r=0.81 at P<0.05),** which is statistically significant. Additionally, it indicates that there is a highly statistically significant positive results exists between the pre-test and post-test Attitude scores **(r=0.75 at P<0.05).** In addition, the pre- and post-test Practice scores were also significant **(r=0.79, P<0.05).**

Results on the association between Post-Test Knowledge, Attitude, and Practice Scores on Learning Disabilities in Children and Selected Teachers' Background Variables.

Knowledge with particular socio-demographic aspects:

The outcome of the study on "Association between the Post-Test Level of Knowledge Scores and the Selected Socio- Demographic Variables of School Teachers", reveal that only three socio-demographic factors, monthly income **(P=0.034),** identification of any children with academic difficulties **(P=0.012),** and a special function of a school teacher aside from instruction **(P=0.005)** were statistically significant at the P<0.05 level of significance in relation to the knowledge scores. However, because the values for the other variables are smaller than the lowest level of significance, they are not judged statistically accurate significant.

Regarding attitude with some socio-demographic factors:

Findings regarding the Association between the Post-Test Attitude Levels Scores and Identified Socio- Demographic characteristics of School Teachers show that for gender **(P=0.031),** place of residence **(P=0.008),** family type **(P=0.001),** type of employment **(P=0.015),** taking classes or being involved in a group of students **(P=0.005),** and type of employment **(P=0.001),** there is a significant association. A substantial association in terms of statistics exists between attitude scores and recognized any child with learning impairments **(P=0.001),** experience of teaching children with learning impairments **(P=0.001),** In contrast, it was noticed that the other variables are not statistically significant at the lowest degree of significance.

Practice with a certain socio-demographic attributes:

The study findings demonstrated a significant association between the post-test level of practice scores and a few selected sociodemographic characteristics of school teachers, including gender **(P=0.003),** location of residence **(P=0.032),** nature of family **(P=0.001),** employment type **(P=0.001),** and taking classes or working with a group of students **(P=0.036).** Statistics show that the results are significant at the $P<0.05$ level of significance for the pertaining to the particular function of a school teacher other than teaching **(P=0.014),** for any learning difficulties training programme which the teachers attended **(P=0.006),** for identifying any child with learning disabilities **(P=0.001),** and lastly, having expertise in instructing students with learning difficulties **(P=0.001).** The remaining factors, however, are not shown to be statistically significant at the least significant level.

This chapter provided a summary of the key research findings in light of the aforementioned study goals and objectives, which also had an impression on the proposed hypothesis.

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CHAPTER-IX

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ANNEXURE

ANNEXURE-IX

Tool/Instruments used (Structured Questionnaires)

DEAR PARTICIPANTS/RESPONDENTS:

This questionnaire is prepared to gather information on the research topic titled "A Study to Evaluate the Effectiveness of Competency Based Teacher Education (CBTE) Training Module on Knowledge, Attitude and Practices (KPA) Of School Teachers Regarding Learning Disabilities in Children in Selected Schools at Kolar District, Karnataka."

The information you provide will be used only for research purpose and will remain highly confidential. Your genuine responses to all the items across all the sections of the questionnaire contribute a lot to the successful completion of the study. You are therefore kindly requested to provide genuine information.

Thank you very much for your co-operation.

CERTIFICATE OF INFORMED WRITTEN CONSENT

The details of the study have been provided to me in writing and explained to me in my own language. I confirm that I have understood the above study and had the opportunity to ask questions to the principal investigator. I understand that my participation in the study is voluntary and that I am free to withdraw at any time, without giving any reason. I have been given an information sheet giving details of the study. I fully consent to participate in the above study.

Name of Participant: _____

Address with contact no: _____

Email id: _____

Signature of Participant: _____

Date: _____

The tool consists of:

Part-I: Socio-Demographic Profile

Part-II: Section-A: Structured Knowledge Questionnaire (SKQ) on Learning Disabilities in Children.

Section-B: 5- Point Likert Scale on Teacher's Attitude about Learning Disabilities in Children.

Section-C: Rating scale on Practice for teachers on Managing children with learning disabilities at school.

PART-1: SOCIO-DEMOGRAPHIC PROFILE

Instructions- Read the following questions and give your response by putting a tick mark in the appropriate box which represents your choice and by writing the necessary information.

1. **Age (in years): ----------**
2. **Gender**
   a) Male
   b) Female
3. **Educational status/Qualification:** **----------**
4. **Marital status**
   a) Married
   b) Unmarried
   c) Divorce
   d) Widowed
5. **Religion**
   a) Hindu
   b) Muslim
   c) Christian
   d) Any others
6. **Place of residence**
   a) Rural
   b) Urban
   c) Semi-urban

7. Type of school

a) Government

b) Private

c) Grant in Aid

8. Type of family

a) Nuclear

b) Joint

c) Extended

9. Type of Employment

a) Contract basis

b) Probation

c) Temporary

d) Permanent

10. Monthly income (in Rs): ----------

11. Involved with group of students / taking classes

a) Lower primary

b) Upper primary

c) Both

d) Other than primary class

12. Location of school

a) Urban

b) Rural

c) Semi-urban

13. Presently, what specific role do you possess other than Teaching?

a) Class teacher

b) Subject teacher

c) Both a and b

d) Any other means specify:

14. Have you attended any training/ workshops on management of Learning Disabilities in Children.

a) Yes

b) No

c) If yes specify the media /mode of training----------

15. Total years of experience as a teacher: ----------

16. Do you have previous exposure on learning Disabilities as a part of the curriculum

a) Yes

b) No

17. During your service, have you identified any child with learning Disabilities

a) Yes

b) No

If yes, tick the category as

a) Problem in Reading (Dyslexia)

b) Problem in Writing (Dysgraphia)

c) Problem in doing Math's/calculation (Dyscalculia)

d) Identified in more than one area

18. Any experience in teaching the children with learning disabilities/Specific Learning Disability

a) Yes

b) No

PART-II: STRUCTURED QUESTIONNAIRES

Section-A: Structured Knowledge Questionnaire on Learning Disabilities in children.

Instructions-Structured Knowledge Questionnaire is a multiple-choice question with four answer choices. Read all the questions and Mark one best response only by putting a (√) mark or circle to indicate the answer you consider correct for each Questions.

I: General Information on Learning Disability

1. **Learning disabilities is stated as**
   a) Difficulty in acquiring of developmental skills
   b) Difficulty in academic achievement
   c) Difficulty in social achievement
   d) All of the above.
2. **Learning Disability is**
   a) A stable state
   b) A variable state
   c) Need not impair functioning
   d) Does not improve with appropriate intervention.
3. **Another term for "Learning Disability" is**
   a) Mental retardation
   b) Learning difficulty
   c) Slow learner
   d) Dyslexia
4. **Specific Learning Disability majorly affects the**
   a) Management skills
   a) Scholastic/academic skills
   b) Organization skills
   c) Leadership skills
5. **Learning Disabilities belongs to the Category of**
   a) Psychotic disorder
   b) Neurotic disorder
   c) Neuro-developmental disorder

d) Physical disorder

6. **Learning Disabilities is more commonly seen in**
   a) Adults
   b) Toddlers
   c) School going age
   d) Old age

II: Causes of Learning Disabilities

7. **One of the most common causes for Learning Disability is**
   a) Genetic
   b) Radiation
   c) Mental retardation
   d) Improper immunization
8. **Learning Disabilities is mainly due to**
   a) Neurological problem
   b) School problem
   c) Emotional problem
   d) Family problem
9. **Learning Disabilities may occur due to all of the following EXCEPT**
   a) Cerebral dysfunction
   b) Emotional disturbances
   c) Behavioral disturbances
   d) Cultural factors
10. **Which one is not a cause for Learning Disabilities?**
    a) Lack of exercise
    b) Problems at birth
    c) Heredity
    d) Head injury
11. **Learning Disabilities in children may occur due to all of the following EXCEPT**
    a) Teachers' way of teaching
    b) Any trauma/febrile seizures
    c) Meningitis during infancy
    d) Parental use of alcohol

III. Characteristics of Learning Disability

12. Learning Disability is characterized by a discrepancy between

a) Ability and Achievement
b) Ability and intelligence
c) Potential and Social Interaction
d) None of the above

13. Learning Disabilities constitute which of the following defect?

a) Defect in sensory functions
b) Defect in all motor functions
c) Defect in interpreting what they hear and see
d) All of the above

14. Learning Disabilities is commonly manifested in the form of

a) Spiritual problem
b) Physical problem
c) Toileting problem
d) Academic problem

15. Learning Disability is also found in

a) Conduct/misbehavior disorder
b) Attention Deficit Hyperactive Disorder
c) Autism
d) All of the above

16. The commonly found clinical feature in Learning Disabled child is

a) Jealousy
b) Happiness
c) Distractibility
d) Crying Spells

17. I.Q of student with Learning Disabilities is

a) Below average (<70)
b) Above average (90-100)
c) Average (70-90)

d) Genius (>140)

18. Children with Learning Disabilities are recognized when they show the features of

a) Reduced Self-Esteem
b) Poor emotional attachment with others
c) Speech delay
d) Difficulty in all the above-mentioned aspects.

19. Children with Learning Disability could have other Co-morbid conditions such as

a) Deafness
b) Blindness
c) ADHD
d) Addiction

IV. Types of Learning Disability

20. The term used to describe reading disability is

a) Dysgraphia
b) Dyspraxia
c) Dyscalculia
d) Dyslexia

21. Difficulty in writing expression is called as

a) Dyspraxia
b) Dysgraphia
c) Dyscalculia
d) Dyslexia

22. Inability to perform mathematical calculation and arithmetic is called as

a) Dyspraxia
b) Dysgraphia
c) Dyscalculia
d) Dyslexia

23. Difficulty with fine motor skills is known as

a) Dyspraxia
b) Dyslexia
c) Auditory processing disorder
d) Autistic disorder

24. Children having trouble with non-verbal cues (e.g.) body language, poor coordination is defined as

a) Language disorder
b) ADHD
c) Non-verbal learning disorder
d) Conduct disorder

25. Orthopedically impaired children are likely to have

a) Dyscalculia
b) Dyspraxia
c) Dysthymia
d) Dyslexia

26. A disorder related to difficulty in understanding the language is

a) Apraxia
b) Dyslexia
c) Autism
d) Aphasia

27. Which of the following is a specific Learning disorder (SLD)?

a) Hearing impairment
b) Mental retardation
c) Autism
d) Dyslexia

28. Processing of linguistic information is considered as

a) Difficulty with language
b) Difficulty in fine motor skills
c) Difficulty interpreting visual information
d) Difficulty in hearing

29. Dyslexia affects the activities like

a) Ability to play sports
b) Eating
c) Reading and Learning
d) Being able to speak

30. Deficiency in the ability to write, associated with impaired handwriting is a symptom of

a) Dyspraxia
b) Dysgraphia
c) Dyscalculia
d) Dyslexia

31. Difficulty in recalling sequence of letters in words and frequent loss of visual memory is associated with

a) Dyspraxia
b) Dysgraphia
c) Dyscalculia
d) Dyslexia

32. Which of the following is not a sign of reading difficulty among young learners? Difficulty in

a) Letter and word recognition
b) Spelling consistency
c) Reading speed and fluency
d) Understanding words and ideas.

33. Dyscalculia is related to problem with

a) Speaking accurately
b) Writing without committing mistakes
c) Listening message properly
d) Doing mathematical calculations

34. Excessive technical errors of punctuation, capitalization, grammar etc are seen as manifestation in

a) Reading disorder
b) Mathematics disorder
c) Writing disorder
d) None of the above

35. Difficulty in reading time from clock is seen in

a) Reading disorder
b) Mathematics disorder
c) Mixed disorder
d) Spelling disorder

36. Hand and eye coordination difficulties that interfere with learning is seen in

a) Dyspraxia
b) Dysphasia
c) Dyscalculia
d) Dyslexia

37. Individuals with writing disorder often

a) Avoid writing
b) Possess poor mental ideas to present
c) Show poor organization of paragraph
d) All of the above

V: Testing or investigation of Learning Disability

38. Learning problems in children can be detected by

a) Blood test
b) X-ray/CT scan
c) Physical examination
d) Academic assessment

39. Which of the following is the most appropriate method to monitor the progress of the children with Learning Disability?

a) Case study
b) Anecdotal records
c) Behavior rating scale
d) Structured behavioral rating scale

40. Learning Disabilities in Mathematics can be assessed most appropriately by

a) Aptitude test
b) Diagnostic procedure
c) Screening test
d) Achievement test

41. The first person likely to detect the Learning Disabilities in children is

a) Psychiatrist
b) Psychologist
c) Teacher
d) Counselor

42. To make diagnosis about child's learning problem teachers should gather more information from their

a) Siblings
b) Parents
c) Other children's (peer groups)
d) School authorities

VI. Management on Learning Disability

43. The most common form of treatment for Learning Disorders at School

a) Counseling
b) Regular remedial classes
c) Individualized education programme
d) Diversional therapy

44. Inclusive education in school means

a) Only children with Learning Disability
b) For children who speak minimal language
c) All children in the class room
d) None of the above

45. Assistive technology which is commonly used for teaching children with Learning Disability is

a) Talking calculator& spell checker
b) Word processors
c) Text to speech software's
d) All of the above

46. To help individuals with Learning Disability, inclusion of mnemonics as reminder is used in

a) Reading disorder
b) Writing disorder
c) Mathematics disorder
d) Mental retardation

47. Problems related to spelling can be improved by

a) Reading stories
b) Negative reinforcement
c) Word card games
d) Listening to children

48. Mathematical problem is better treated by

a) Strict Discipline
b) Repeated learning
c) Physical punishment
d) Teaching using concrete objects

49. The management for Learning Disability and associated co-morbid conditions are

a) Medication
b) Family education/ Support

c) Class room interventions

d) All the above

50. Children with Learning Disabilities can be better managed in

a) Day care centers

b) Normal school with remedial help

c) Rehabilitation Centre

d) Tuition centers

ANNEXURE-XI

PPT ON LEARNING DISABILITIES IN CHILDREN

SDUAHER

SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION AND RESEARCH
(A DEEMED TO BE UNIVERSITY DECLARED UNDER SECTION 3 OF UGC ACT 1956)

COMPETENCY BASED TEACHER EDUCATION (CBTE) TRAINING MODULE SESSION ON LEARNING DISABILITIES IN CHILDREN

"EMPOWERING THE SCHOOL TEACHERS"

Guided By:
Dr.Zeanath.C.J,
HOD- MSN SDUCON,
CNO-RLJH&RC.

Presented by:
Mr.Rajesh.R
Ph.D scholar

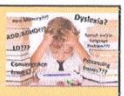
At the end of the session the teacher will be able to:

1. define learning disabilities and understand the concept on learning disabilities
2. list down the various characteristics of LD in children.
3. enumerate the causative factors of LD in children.
4. enlist the different types of learning disabilities and differentiate.
5. identify learning disabled children in classroom
6. explain the remedial strategies in different areas of concern: listening, speaking, reading, spelling, calculation, and writing.
7. enumerate the role of teacher and guidelines to be used in the context of the children with LD

INTRODUCTION

Over the years, as a school teacher you all must have seen many different kinds of students, some average and some not so bright. Did you ever wonder why such differences exist? Some of you might have wondered and even tired to help the children whom you felt required assistance.

There is a possibility that these children have what is called Learning Disabilities. To simply put learning disabilities is a Neurological condition which affects about 10-12% of the school going children and is prevalent everywhere- in all countries, cultures, economics, all students and institutions.



MEANING: LEARNING DISABILITIES

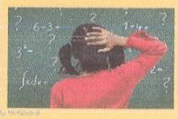
MEANING: Learning Disabilities is a Neuro-developmental condition which manifests as the "inability" to listen, speak, read, spell, write and do mathematical calculations.

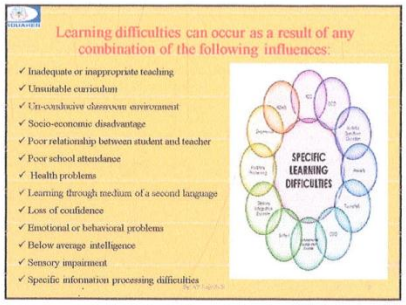
DEFINITION: LEARNING DISABILITY:

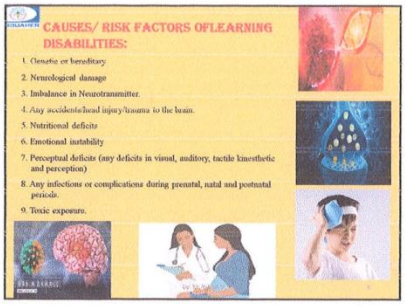
The NJCLD (National Joint Committee For Learning Disabilities) defines Learning disabilities is a general term that refers to a heterogeneous group of disorders mainly manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning or mathematical abilities.

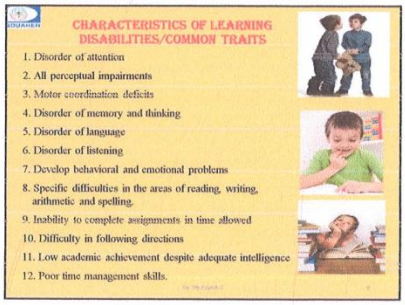
LEARNING DIFFICULTY:

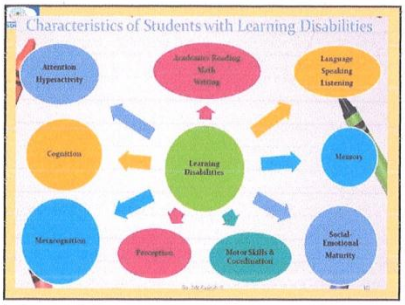
- Learning Difficulty: Learning difficulty is a condition that can cause an individual to experience problems in a traditional classroom learning context.
- It is applied to school going age students who are not making adequate progress in school, especially in the basic skill areas of language, literacy and numeracy.

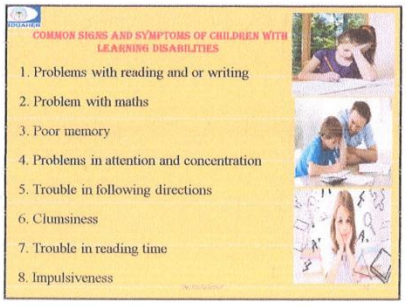


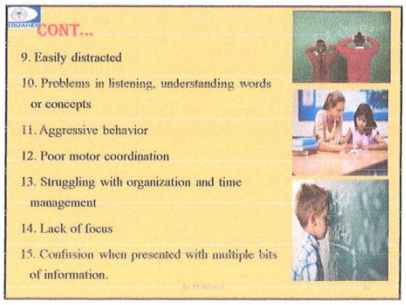

Learning difficulties can occur as a result of any combination of the following influences:
✓ Inadequate or inappropriate teaching
✓ Unsuitable curriculum
✓ Un-conducive classroom environment
✓ Socio-economic disadvantage
✓ Poor relationship between student and teacher
✓ Poor school attendance
✓ Health problems
✓ Learning through medium of a second language
✓ Loss of confidence
✓ Emotional or behavioral problems
✓ Below average intelligence
✓ Sensory impairment
✓ Specific information processing difficulties
SPECIFIC LEARNING DIFFICULTIES

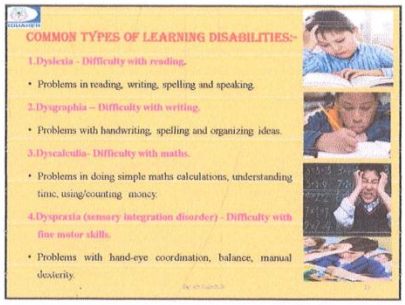

CAUSES/ RISK FACTORS OFLEARNING DISABILITIES:
1. Genetic or hereditary.
2. Neurological damage
3. Imbalance in Neurotransmitter.
4. Any accidents/head injury/trauma to the brain.
5. Nutritional deficits
6. Emotional instability
7. Perceptual deficits (any deficits in visual, auditory, tactile kinesthetic and perception)
8. Any infections or complications during prenatal, natal and postnatal periods.
9. Toxic exposure.

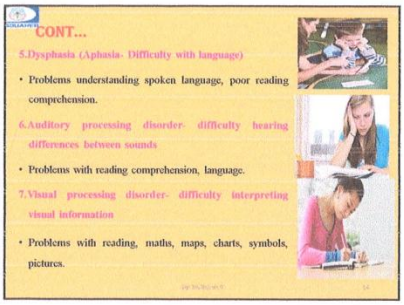

CHARACTERISTICS OF LEARNING DISABILITIES/COMMON TRAITS
1. Disorder of attention
2. All perceptual impairments
3. Motor coordination deficits
4. Disorder of memory and thinking
5. Disorder of language
6. Disorder of listening
7. Develop behavioral and emotional problems
8. Specific difficulties in the areas of reading, writing, arithmetic and spelling.
9. Inability to complete assignments in time allowed
10. Difficulty in following directions
11. Low academic achievement despite adequate intelligence
12. Poor time management skills.

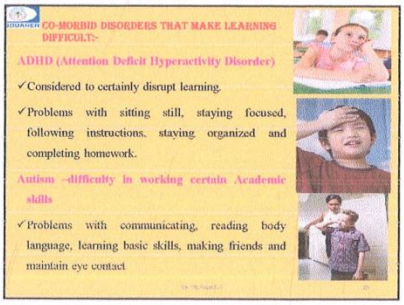

Characteristics of Students with Learning Disabilities
Attention Hyperactivity
Academics Reading Math Writing
Language Speaking Listening
Cognition
Learning Disabilities
Memory
Metacognition
Perception
Motor Skills & Coordination
Social Emotional Maturity

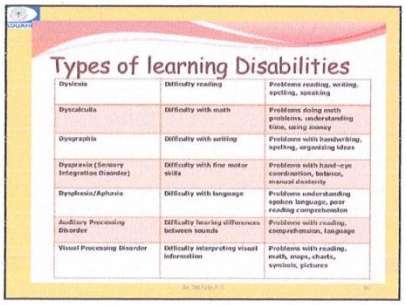

COMMON SIGNS AND SYMPTOMS OF CHILDREN WITH LEARNING DISABILITIES
1. Problems with reading and or writing
2. Problem with maths
3. Poor memory
4. Problems in attention and concentration
5. Trouble in following directions
6. Clumsiness
7. Trouble in reading time
8. Impulsiveness

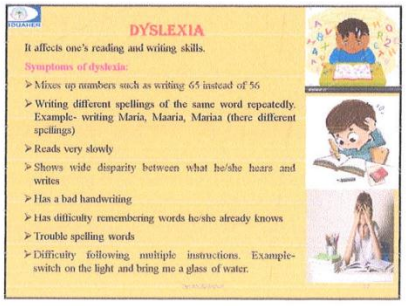

CONT...
9. Easily distracted
10. Problems in listening, understanding words or concepts
11. Aggressive behavior
12. Poor motor coordination
13. Struggling with organization and time management
14. Lack of focus
15. Confusion when presented with multiple bits of information.

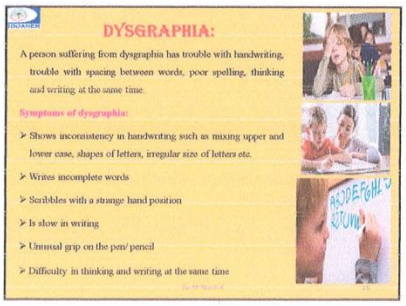

COMMON TYPES OF LEARNING DISABILITIES:-
1.Dyslexia - Difficulty with reading.
• Problems in reading, writing, spelling and speaking.
2.Dysgraphia – Difficulty with writing.
• Problems with handwriting, spelling and organizing ideas.
3.Dyscalculia- Difficulty with maths.
• Problems in doing simple maths calculations, understanding time, using/counting money.
4.Dyspraxia (sensory integration disorder) - Difficulty with fine motor skills.
• Problems with hand-eye coordination, balance, manual dexterity.


CONT...
5.Dysphasia (Aphasia- Difficulty with language)
• Problems understanding spoken language, poor reading comprehension.
6.Auditory processing disorder- difficulty hearing differences between sounds
• Problems with reading comprehension, language.
7.Visual processing disorder- difficulty interpreting visual information
• Problems with reading, maths, maps, charts, symbols, pictures.


CO-MORBID DISORDERS THAT MAKE LEARNING DIFFICULT:-
ADHD (Attention Deficit Hyperactivity Disorder)
✓Considered to certainly disrupt learning.
✓Problems with sitting still, staying focused, following instructions, staying organized and completing homework.
Autism –difficulty in working certain Academic skills
✓Problems with communicating, reading body language, learning basic skills, making friends and maintain eye contact


Types of learning Disabilities
Dyslexia | Difficulty reading | Problems reading, writing, spelling, speaking
Dyscalculia | Difficulty with math | Problems doing math problems, understanding time, using money
Dysgraphia | Difficulty with writing | Problems with handwriting, spelling, organizing ideas
Dyspraxia (Sensory Integration Disorder) | Difficulty with fine motor skills | Problems with hand-eye coordination, balance, manual dexterity
Dysphasia/Aphasia | Difficulty with language | Problems understanding spoken language, poor reading comprehension
Auditory Processing Disorder | Difficulty hearing differences between sounds | Problems with reading, comprehension, language
Visual Processing Disorder | Difficulty interpreting visual information | Problems with reading, math, maps, charts, symbols, pictures


DYSLEXIA
It affects one's reading and writing skills.
Symptoms of dyslexia:
➢ Mixes up numbers such as writing 65 instead of 56
➢ Writing different spellings of the same word repeatedly. Example- writing Maria, Maaria, Mariaa (there different spellings)
➢ Reads very slowly
➢ Shows wide disparity between what he/she hears and writes
➢ Has a bad handwriting
➢ Has difficulty remembering words he/she already knows
➢ Trouble spelling words
➢ Difficulty following multiple instructions. Example- switch on the light and bring me a glass of water.


DYSGRAPHIA:
A person suffering from dysgraphia has trouble with handwriting, trouble with spacing between words, poor spelling, thinking and writing at the same time.
Symptoms of dysgraphia:
➢ Shows inconsistency in handwriting such as mixing upper and lower case, shapes of letters, irregular size of letters etc.
➢ Writes incomplete words
➢ Scribbles with a strange hand position
➢ Is slow in writing
➢ Unusual grip on the pen/ pencil
➢ Difficulty in thinking and writing at the same time

DYSCALCULIA

Here the person struggles with Mathematics. He/she has trouble with numbers, calculations, figures, memorizing, counting etc.

Symptoms of dyscalculia

- Has difficulty solving word problems
- Displays difficulty in following concepts of time, quantity, carrying and borrowing, positive and negative value etc.

- Trouble with fractions
- Difficulty in handling money
- Confusion with additions, subtractions, multiplying and dividing
- Struggles with concepts such as days, weeks, months, etc.

LANGUAGE-PROCESSING DISORDER:

In this type of a learning disability, there is difficulty attaching meaning to words, stories and sentences.

Symptoms of language-processing disorder

- Has difficulty in attaching a meaning from a spoken language
- Is poor in reading and writing skills
- Frustrated when he/she has a lot to say but doesn't know how to say it
- Can't think of words that describe an object
- Difficulty in understanding jokes

AUDITORY PROCESSING DISORDER:

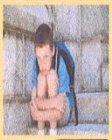
Children with this learning disability have difficulty in understanding the subtle differences between sounds in words. They also can't tell easily where the sounds are coming from.

Symptoms of auditory processing disorder:

- Misspells or mispronounces similar sounding words. Example- celery/salary
- Has a habit of interpreting words too literally
- Finds it hard to remember or be focused on an oral presentation
- Often distracted by noises in the background
- Difficulty following directions
- Struggles in listening to people
- Confusion in understanding a complex sentence or someone speaking too fast

NON-VERBAL LEARNING DISABILITIES

children suffering from this disability has trouble in understanding non-verbal communication such as facial expressions, body language can't be distinguished easily.



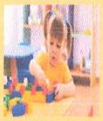
Symptoms of non-verbal learning disabilities

- Is clumsy; often keeps dropping things or bumping into people
- Has trouble doing the simplest of things such as using a pair of scissors, or tying shoe laces
- Difficulty in following several instructions at once
- Asks too many questions or is interruptive

VISUAL MOTOR-DEFICIT

Children suffering from this learning disability, struggle with hand-eye coordination.

They also show signs and symptoms of dysgraphia, as well as non-verbal learning disability.



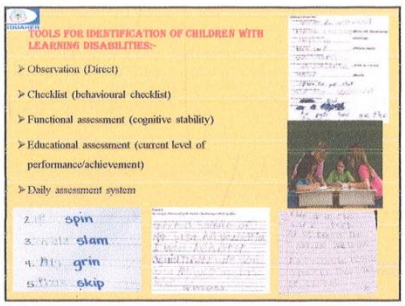
Symptoms of visual motor-deficit

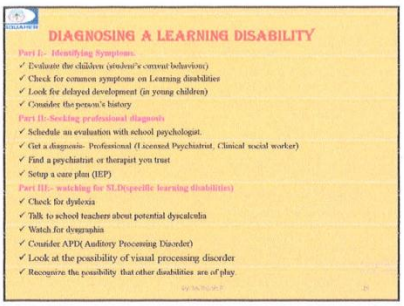
- Complains of itchy eyes, print getting blurred while reading
- Closes one eye while working
- Yawns while reading
- Cannot recognize an object or word if only a part of it is visible
- Struggles to cut and paste paper

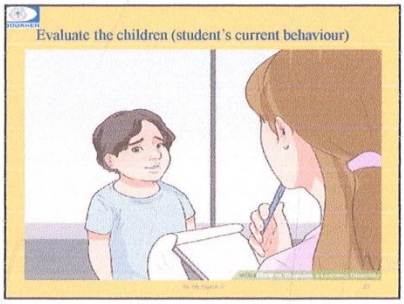
DIAGNOSING A LEARNING DISABILITY

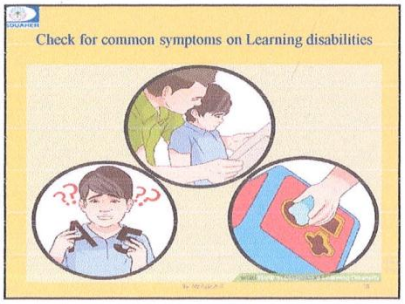
The following may be signs of a learning disorder for early diagnosis by a school teacher:

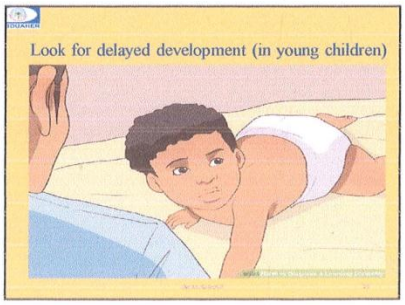
- Lack of enthusiasm for reading or writing
- Trouble memorizing things
- Working at a slow pace
- Trouble following directions
- Trouble staying focused on a task
- Difficulty understanding abstract ideas
- Lack of attention to detail, or too much attention to detail
- Poor social skills
- Disruptiveness

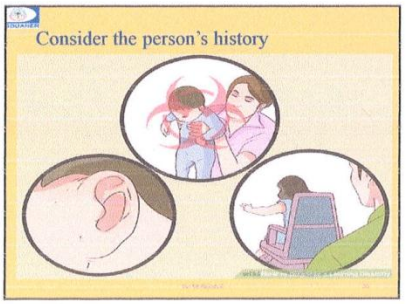

TOOLS FOR IDENTIFICATION OF CHILDREN WITH LEARNING DISABILITIES:-
➢ Observation (Direct)
➢ Checklist (behavioural checklist)
➢ Functional assessment (cognitive stability)
➢ Educational assessment (current level of performance/achievement)
➢ Daily assessment system
spin
slam
grin
skip

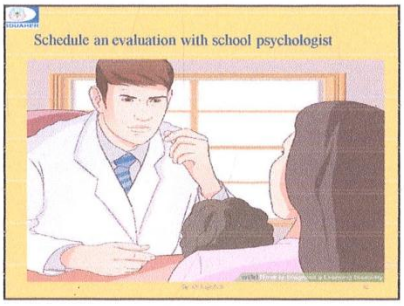

DIAGNOSING A LEARNING DISABILITY
Part I:- Identifying Symptoms.
✓ Evaluate the children (student's current behaviour)
✓ Check for common symptoms on Learning disabilities
✓ Look for delayed development (in young children)
✓ Consider the person's history
Part II:-Seeking professional diagnosis
✓ Schedule an evaluation with school psychologist.
✓ Get a diagnosis- Professional (Licensed Psychiatrist, Clinical social worker)
✓ Find a psychiatrist or therapist you trust
✓ Setup a care plan (IEP)
Part III:- watching for SLD(specific learning disabilities)
✓ Check for dyslexia
✓ Talk to school teachers about potential dyscalculia
✓ Watch for dysgraphia
✓ Consider APD(Auditory Processing Disorder)
✓ Look at the possibility of visual processing disorder
✓ Recognize the possibility that other disabilities are of play.

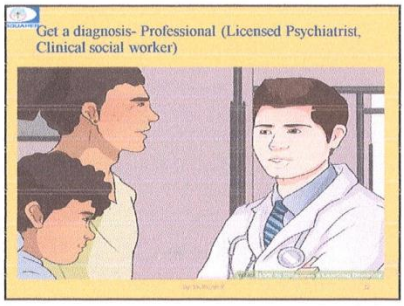

Evaluate the children (student's current behaviour)

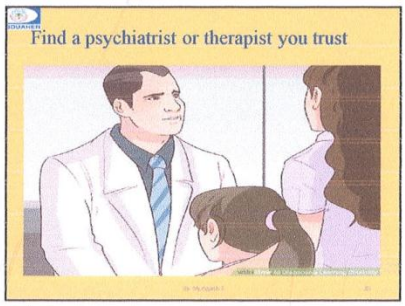

Check for common symptoms on Learning disabilities

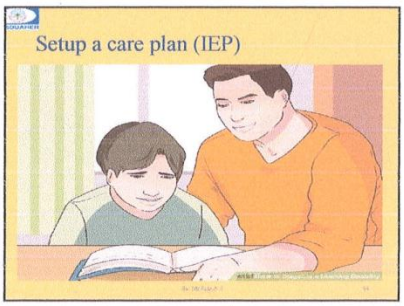

Look for delayed development (in young children)

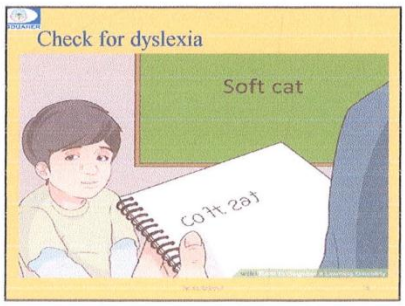

Consider the person's history

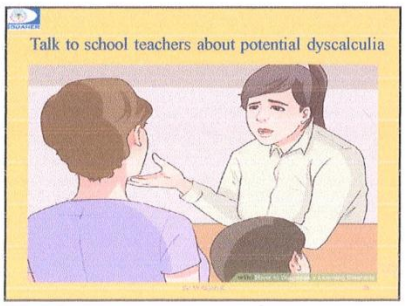

Schedule an evaluation with school psychologist

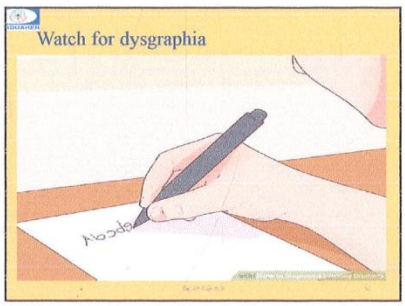

Get a diagnosis- Professional (Licensed Psychiatrist, Clinical social worker)

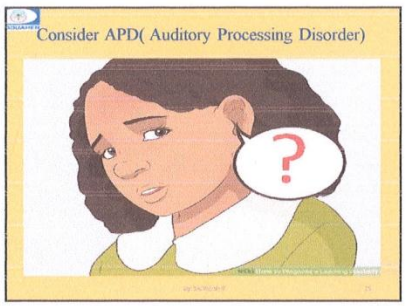

Find a psychiatrist or therapist you trust

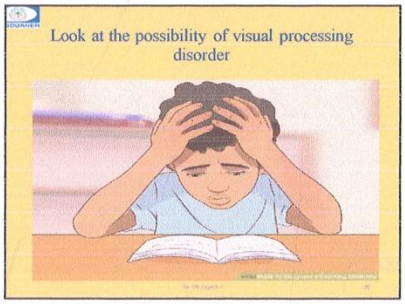

Setup a care plan (IEP)

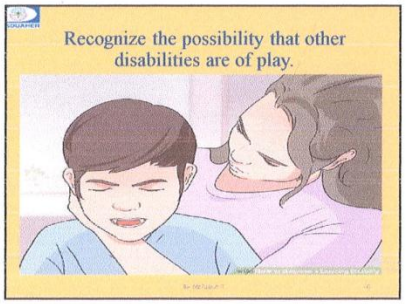

Check for dyslexia
Soft cat

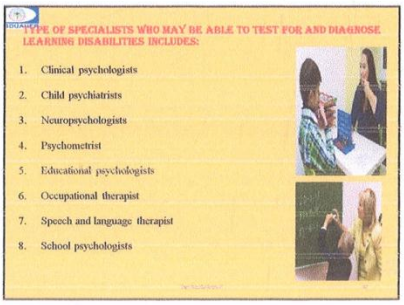

Talk to school teachers about potential dyscalculia

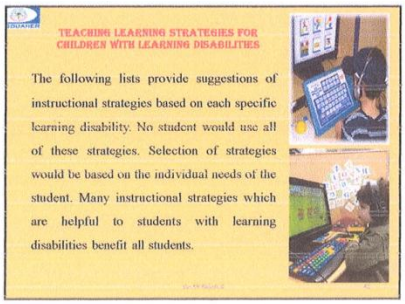

Watch for dysgraphia

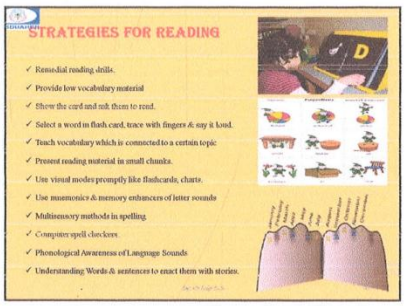

Consider APD(Auditory Processing Disorder)
?

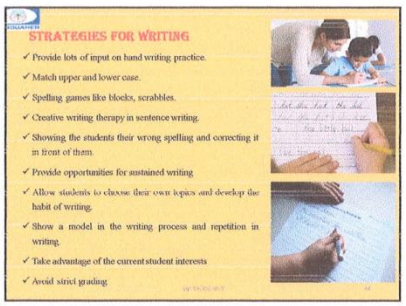

Look at the possibility of visual processing disorder

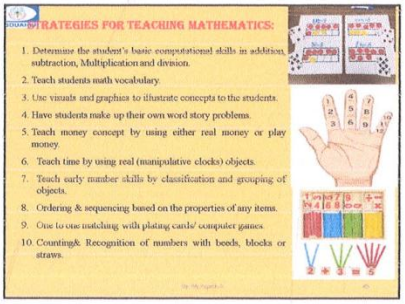

Recognize the possibility that other disabilities are of play.

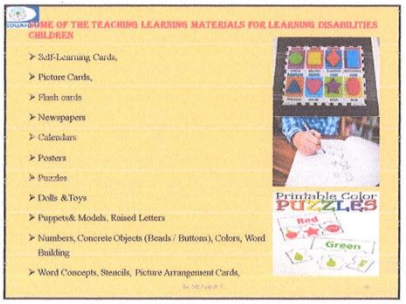

TYPE OF SPECIALISTS WHO MAY BE ABLE TO TEST FOR AND DIAGNOSE LEARNING DISABILITIES INCLUDES:
1. Clinical psychologists
2. Child psychiatrists
3. Neuropsychologists
4. Psychometrist
5. Educational psychologists
6. Occupational therapist
7. Speech and language therapist
8. School psychologists

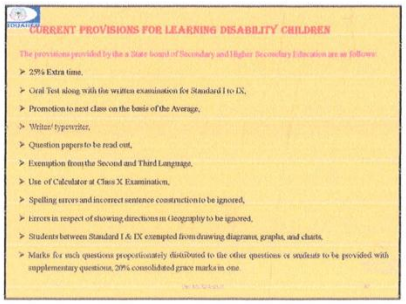

TEACHING LEARNING STRATEGIES FOR CHILDREN WITH LEARNING DISABILITIES
The following lists provide suggestions of instructional strategies based on each specific learning disability. No student would use all of these strategies. Selection of strategies would be based on the individual needs of the student. Many instructional strategies which are helpful to students with learning disabilities benefit all students.

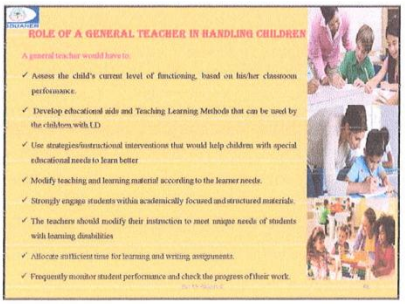

STRATEGIES FOR READING
✓ Remedial reading drills.
✓ Provide low vocabulary material
✓ Show the card and ask them to read.
✓ Select a word in flash card, trace with fingers & say it loud.
✓ Teach vocabulary which is connected to a certain topic
✓ Present reading material in small chunks.
✓ Use visual modes promptly like flashcards, charts.
✓ Use mnemonics & memory enhancers of letter sounds
✓ Multisensory methods in spelling.
✓ Computer spell checkers
✓ Phonological Awareness of Language Sounds
✓ Understanding Words & sentences to enact them with stories.

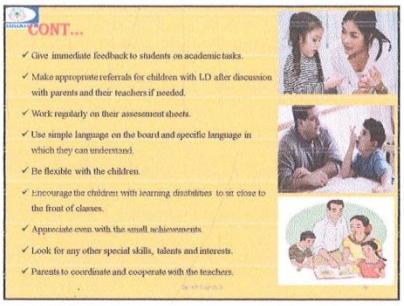

STRATEGIES FOR WRITING
✓ Provide lots of input on hand writing practice.
✓ Match upper and lower case.
✓ Spelling games like blocks, scrabbles.
✓ Creative writing therapy in sentence writing.
✓ Showing the students their wrong spelling and correcting it in front of them.
✓ Provide opportunities for sustained writing
✓ Allow students to choose their own topics and develop the habit of writing.
✓ Show a model in the writing process and repetition in writing.
✓ Take advantage of the current student interests
✓ Avoid strict grading

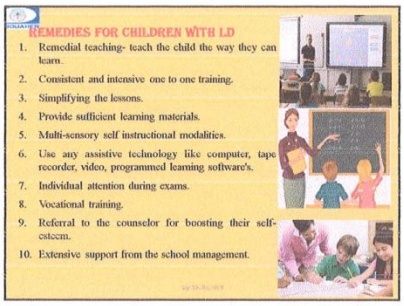

RATEGIES FOR TEACHING MATHEMATICS:
1. Determine the student's basic computational skills in addition, subtraction, Multiplication and division.
2. Teach students math vocabulary.
3. Use visuals and graphics to illustrate concepts to the students.
4. Have students make up their own word story problems.
5. Teach money concept by using either real money or play money.
6. Teach time by using real (manipulative clocks) objects.
7. Teach early number skills by classification and grouping of objects.
8. Ordering & sequencing based on the properties of any items.
9. One to one matching with plating cards/ computer games.
10. Counting& Recognition of numbers with beeds, blocks or straws.

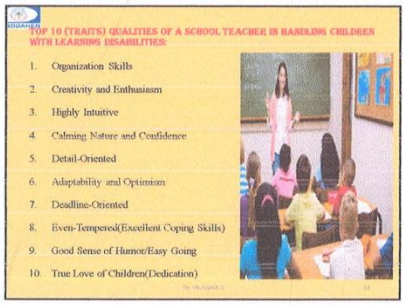

ME OF THE TEACHING LEARNING MATERIALS FOR LEARNING DISABILITIES CHILDREN
➢ Self-Learning Cards,
➢ Picture Cards,
➢ Flash cards
➢ Newspapers
➢ Calendars
➢ Posters
➢ Puzzles
➢ Dolls &Toys
➢ Puppets& Models, Raised Letters
➢ Numbers, Concrete Objects (Beads / Buttons), Colors, Word Building
➢ Word Concepts, Stencils, Picture Arrangement Cards,
Printable Color
PUZZLES
Red
Green

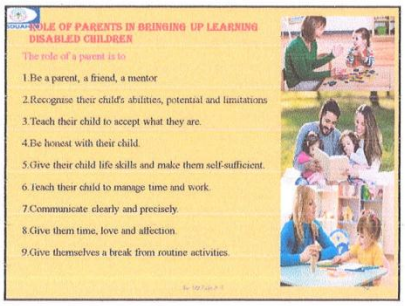

URRENT PROVISIONS FOR LEARNING DISABILITY CHILDREN
The provisions provided by the a State board of Secondary and Higher Secondary Education are as follows:
➢ 25% Extra time.
➢ Oral Test along with the written examination for Standard I to IX.
➢ Promotion to next class on the basis of the Average.
➢ Writer/ typewriter.
➢ Question papers to be read out.
➢ Exemption from the Second and Third Language.
➢ Use of Calculator at Class X Examination.
➢ Spelling errors and incorrect sentence construction to be ignored.
➢ Errors in respect of showing directions in Geography to be ignored.
➢ Students between Standard I & IX exempted from drawing diagrams, graphs, and charts.
➢ Marks for such questions proportionately distributed to the other questions or students to be provided with supplementary questions, 20% consolidated grace marks in one.

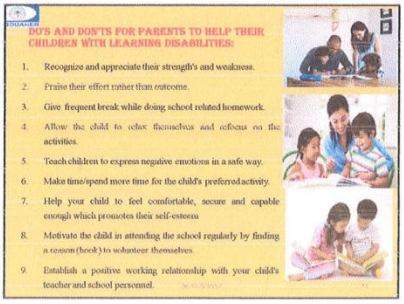

ROLE OF A GENERAL TEACHER IN HANDLING CHILDREN
A general teacher would have to:
✓ Assess the child's current level of functioning, based on his/her classroom performance.
✓ Develop educational aids and Teaching Learning Methods that can be used by the children with LD
✓ Use strategies/instructional interventions that would help children with special educational needs to learn better
✓ Modify teaching and learning material according to the learner needs.
✓ Strongly engage students within academically focused and structured materials.
✓ The teachers should modify their instruction to meet unique needs of students with learning disabilities
✓ Allocate sufficient time for learning and writing assignments.
✓ Frequently monitor student performance and check the progress of their work.

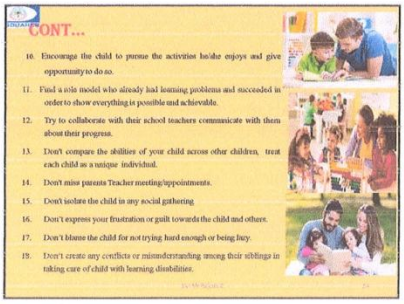

CONT...
✓ Give immediate feedback to students on academic tasks.
✓ Make appropriate referrals for children with LD after discussion with parents and their teachers if needed.
✓ Work regularly on their assessment sheets.
✓ Use simple language on the board and specific language in which they can understand.
✓ Be flexible with the children.
✓ Encourage the children with learning disabilities to sit close to the front of classes.
✓ Appreciate even with the small achievements.
✓ Look for any other special skills, talents and interests.
✓ Parents to coordinate and cooperate with the teachers.

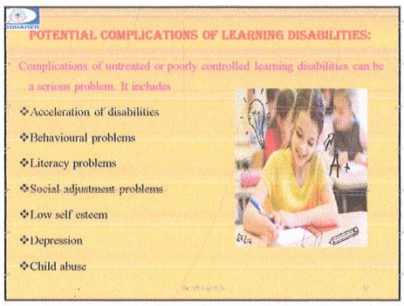

REMEDIES FOR CHILDREN WITH LD
1. Remedial teaching- teach the child the way they can learn.
2. Consistent and intensive one to one training.
3. Simplifying the lessons.
4. Provide sufficient learning materials.
5. Multi-sensory self instructional modalities.
6. Use any assistive technology like computer, tape recorder, video, programmed learning software's.
7. Individual attention during exams.
8. Vocational training.
9. Referral to the counselor for boosting their self-esteem.
10. Extensive support from the school management.

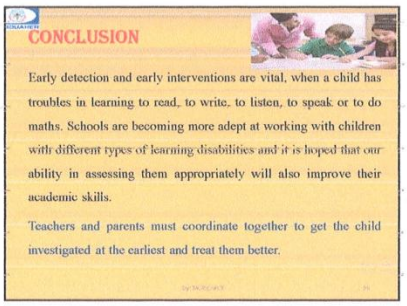

TOP 10 (TRAITS) QUALITIES OF A SCHOOL TEACHER IN HANDLING CHILDREN WITH LEARNING DISABILITIES:
1. Organization Skills
2. Creativity and Enthusiasm
3. Highly Intuitive
4. Calming Nature and Confidence
5. Detail-Oriented
6. Adaptability and Optimism
7. Deadline-Oriented
8. Even-Tempered(Excellent Coping Skills)
9. Good Sense of Humor/Easy Going
10. True Love of Children(Dedication)


ROLE OF PARENTS IN BRINGING UP LEARNING DISABLED CHILDREN
The role of a parent is to
1.Be a parent, a friend, a mentor
2.Recognise their child's abilities, potential and limitations
3.Teach their child to accept what they are.
4.Be honest with their child.
5.Give their child life skills and make them self-sufficient.
6.Teach their child to manage time and work.
7.Communicate clearly and precisely.
8.Give them time, love and affection.
9.Give themselves a break from routine activities.

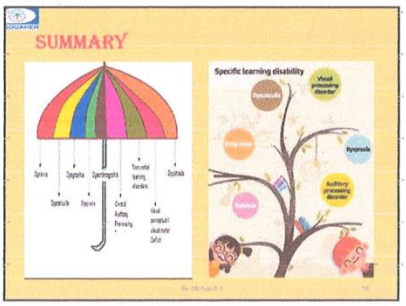

DO'S AND DON'TS FOR PARENTS TO HELP THEIR CHILDREN WITH LEARNING DISABILITIES:
1. Recognize and appreciate their strength's and weakness.
2. Praise their effort rather than outcome.
3. Give frequent break while doing school related homework.
4. Allow the child to relax themselves and refocus on the activities.
5. Teach children to express negative emotions in a safe way.
6. Make time/spend more time for the child's preferred activity.
7. Help your child to feel comfortable, secure and capable enough which promotes their self-esteem.
8. Motivate the child in attending the school regularly by finding a reason (hook) to volunteer themselves.
9. Establish a positive working relationship with your child's teacher and school personnel.

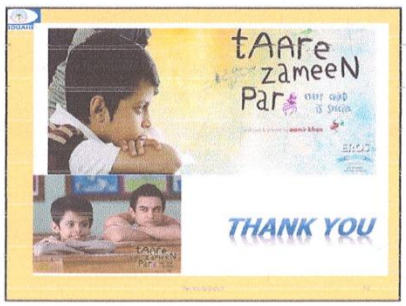

CONT...
10. Encourage the child to pursue the activities he/she enjoys and give opportunity to do so.
11. Find a role model who already had learning problems and succeeded in order to show everything is possible and achievable.
12. Try to collaborate with their school teachers communicate with them about their progress.
13. Don't compare the abilities of your child across other children, treat each child as a unique individual.
14. Don't miss parents Teacher meeting/appointments.
15. Don't isolate the child in any social gathering.
16. Don't express your frustration or guilt towards the child and others.
17. Don't blame the child for not trying hard enough or being lazy.
18. Don't create any conflicts or misunderstanding among their siblings in taking care of child with learning disabilities.


POTENTIAL COMPLICATIONS OF LEARNING DISABILITIES:
Complications of untreated or poorly controlled learning disabilities can be a serious problem. It includes
❖Acceleration of disabilities
❖Behavioural problems
❖Literacy problems
❖Social adjustment problems
❖Low self esteem
❖Depression
❖Child abuse


CONCLUSION
Early detection and early interventions are vital, when a child has troubles in learning to read, to write, to listen, to speak or to do maths. Schools are becoming more adept at working with children with different types of learning disabilities and it is hoped that our ability in assessing them appropriately will also improve their academic skills.
Teachers and parents must coordinate together to get the child investigated at the earliest and treat them better.


TAKE HOME MESSAGE....
" TEACHERS HAVE 3 LOVES: LOVE OF LEARNING, LOVE OF LEARNERS, AND THE LOVE OF BRINGING THE FIRST TWO LOVES TOGETHER"
SO "THE ART OF TEACHING CHILDREN WITH LEARNING DISABILITIES IS THE ART OF ASSISTING DISCOVERY"
Learning Knows No Bounds


SUMMARY
Specific learning disability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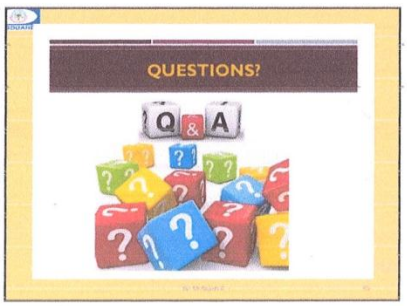
QUESTIONS?
Q & A

Original Article

Competency-based teacher education (CBTE): A training module to improve knowledge, attitude, and practices (KAP) of school teachers on learning disabilities in children

R. Rajesh[1], Zeanath Cariena J.[2]4

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ABSTRACT

Introduction: Inclusive education is a new approach towards a system of educating children with disabilities and learning difficulties with that of normal ones within the same crown. Competency-based teacher education (CBTE) is a framework in which teachers demonstrate their learned knowledge, attitude, and skills in order to achieve specific predetermined "competencies" for a specific course or at a specific educational institution. Children with learning disabilities have significant impairment in reading, writing, and mathematics in spite of normal intelligence and sensory abilities. **Aim:** The aim of the study was to evaluate the effectiveness of competency-based teacher education (CBTE) training module on knowledge, attitude, and practices (KAP) of school teachers regarding learning disabilities in children. **Materials and Methods:** This was a quasi-experimental study carried out in the month of December 2020 with one group pre-test and post-test design were used. Thirty-five school teachers from a private school were randomly selected as study subjects who were handling classes for primary school students at Kolar. School teachers who had prior exposure in special schools and who had already worked as a counsellor were excluded from this study. Data were collected via a self-administrated method with structured questionnaires around 150 including sociodemographic profile, knowledge, attitude, and practice of teachers regarding learning disabilities in children; the data were analysed using descriptive and inferential statistics. **Results:** The findings indicated that mean post-test knowledge score was 35.89, attitude score was 170.66, and practice score was 69.60. The effectiveness of CBTE training module was found to be statistically significant at $P < 0.05$ in terms of mean scores enhancement in knowledge, attitude, and practices. In terms of correlation between knowledge, attitude, and practices of school teachers on learning disabilities in children, it was found that there was a highly positive correlation between attitude and practice with $r = 0.884$, and knowledge and practice with $r = 0.905$. **Conclusion:** The CBTE training module is an effective method in enhancing the knowledge, changing the desirable attitude, and developing good skills of school teachers regarding the identification and management of learning disabilities.

Keywords: Awareness, attitude, learning disorder, opinion, school educator

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Introduction

A learning disability (LD) is a neurological disorder that affects a child from learning or significantly impairs the learning process. "Essentially, learning disabilities are mostly in reading, writing and math." Often, learning differences do not become obvious

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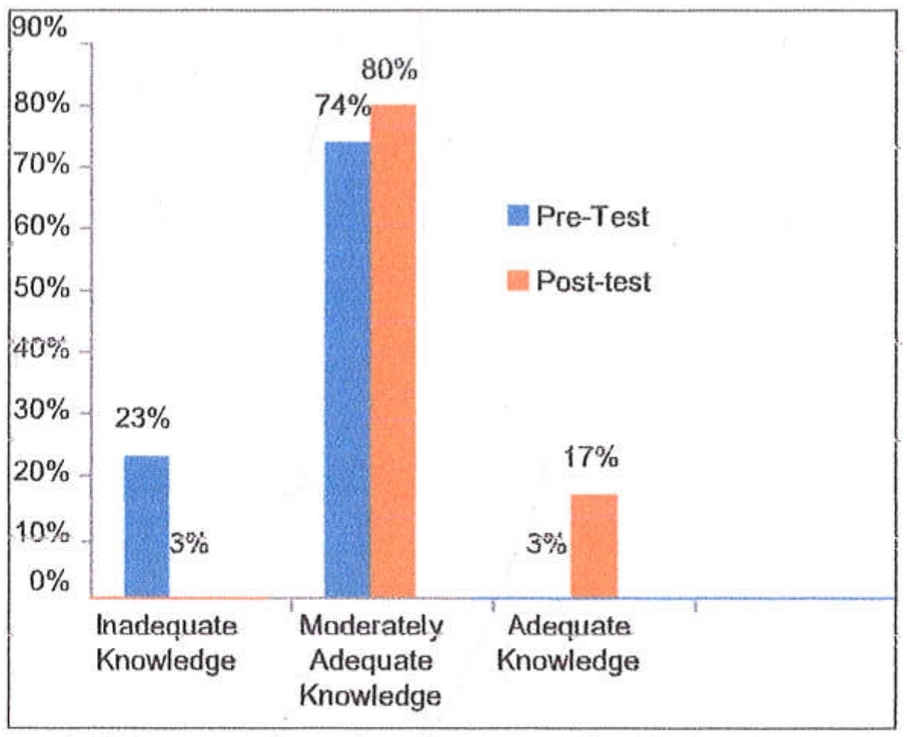

Figure 1: Discusses about the percentage distribution of pre-test and post-test level of knowledge regarding learning disabilities in children among school teachers, which states that 23% of school teachers h inadequate knowledge, 74% had moderately adequate knowledge, and only 03% had adequate knowledge in pre-test, whereas in post-tes around 17% had adequate knowledge, 80% had moderately adequate knowledge, and only 03% had inadequate knowledge in post-test

until a child reaches school age. Even then, difficulties may be subtle and hard to recognize. According to the National Institutes of Health, learning disability symptoms include the following: problems reading and/or writing, problems with math, poor memory, problems paying attention, trouble following directions, clumsiness, trouble telling time, and problems staying organized. Competency-based teacher education (CBTE) empowers teachers to understand the competencies they need to master to achieve their goals in terms of identifying children with learning disabilities. Progress through learning processes without time constraints. Explore diverse learning opportunities in handling the children with learning disabilities at the classroom level. A child with a learning disability processes information differently from other children and has difficulty in performing specific tasks.[1] Learning disability also causes difficulty in organizing information received, remembering them, and expressing information, and therefore affects a person's basic function such as reading, writing, comprehension, and reasoning.[2] Learning disabilities are common and affect approximately 5%–15% of young people around the world. They are considered an "invisible disability."[3] According to the Learning Disabilities Association of Ontario, "Learning Disabilities refer to a variety of disorders that affect the acquisition, retention, understanding, organization or use of verbal and/or non-verbal information. These disorders result from impairments in one or more psychological processes related to learning, in combination with otherwise average abilities essential for thinking and reasoning"[4] The National Joint Committee on Learning Disabilities states that "Learning Disabilities" is a general term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning, or mathematical skills. These disorders are intrinsic to the individual, presumed to be due to central nervous system (CNS) dysfunction and occur across the life span. Problems in self-regulatory behaviours, social perception,

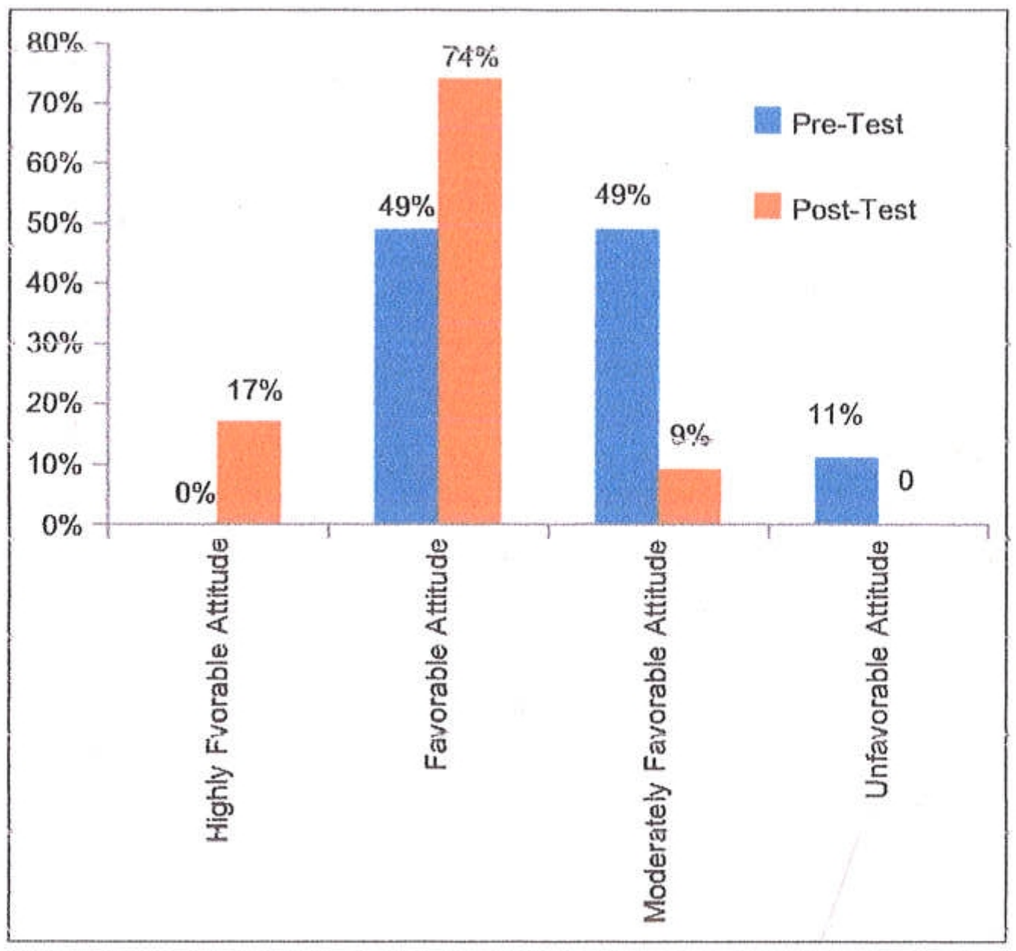

Figure 2: Reveals the percentage distribution of pre-test and post-test levels of attitude of school teachers regarding learning disabilities in children, which states that 40% of the school teachers had favourable attitude, 49% had moderately favourable attitude, and only 11% had unfavourable attitude, whereas none of them had highly favourable attitude in pre-test. In post-test, around 17% of the teachers had highly favourable attitude, 74% had favourable attitude, 09% had moderately favourable attitude but none of the study subjects had unfavourable attitude in post-test

and social interaction may exist with learning disabilities but do not, by themselves, constitute a learning disability.[5]

Need for the Study

Learning disabilities in children can range from mild to severe. Some children have mild learning disabilities that may only affect them in certain academic activities. Other children have severe learning disabilities that can affect them not only in their academic work but also across social and home activities. Some school children may have more than one learning disability.[3]

In USA on enrolment of the school year 2019–20, the number of students, aged 3–21 years, who received special education services under the Individuals with Disabilities Education Act (IDEA) was 7.3 million, or 14% of all public-school students. Among students receiving special education services, the most common category of disability (33%) was specific learning disabilities.[5] A specific learning disability is a disorder in which one or more of the basic psychological processes involved in understanding or using spoken or written language that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations. Thirty-three percent of all students who received special education services had specific learning disabilities, and 19% had speech or language impairments.[6]

In North America the Learning Disabilities Statistics 2020 states that around 5%–9% of the population has a learning disability;

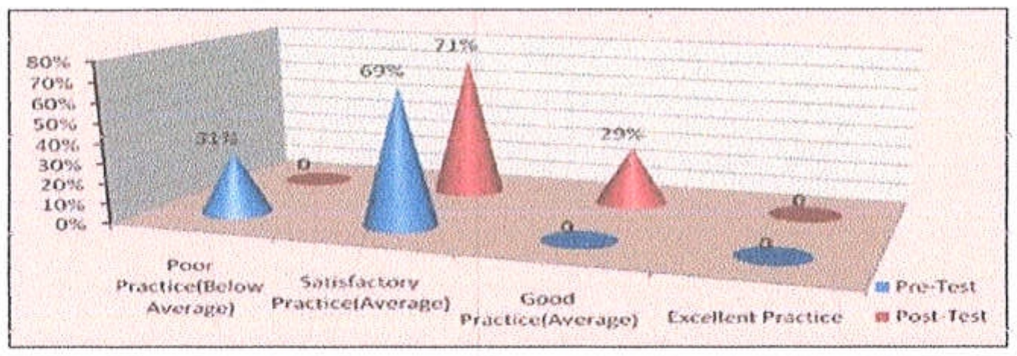

Figure 3: Describes the percentage distribution of pre-test and post-test levels of practice of school teachers regarding learning disabilities in children at the classroom level, which states that 31% of the school teachers had poor practice and 69% had satisfactory practice, whereas none of them had either good and excellent practice in pre-test. In post-test, around 71% of the school teachers had satisfactory practice, 29% had good practice, but none of the study subjects had either excellent practice nor poor practice in post-test

dyslexia is the most common learning disability, affecting over 15% of children; students with LDs are three times more likely to drop out of school; and 14% of all public school students receive special education services.[7] The prevalence of specific learning disabilities in India was 15.17% in sampled children, whereas 12.5%, 11.2%, and 10.5% had dysgraphia, dyslexia, and dyscalculia, respectively. Studies have reported 1%–19% of school going children in India have a LD. This study suggests that the prevalence of specific learning disabilities (SLDs) is at the higher side of previous estimations in India.[8] Prevalence of SLDs in India ranges from 5% to 15% in various studies. Thereappears to be a gender predilection, with boys being more affectedthan girls. Comorbidities include attention deficit hyperactivity disorder (ADHD), autism spectrum disorder, conduct disorder, depressive disorder, anxiety disorder, and other behavioural and emotional disorders. Seven-point five percent of children were at risk of SLD in this study with a male preponderance.[9] Students of today are the budding futures of all nations. In human resource development, education plays a very importantrole. Hence there is an urgent need to increase awareness regarding LDs of children among parents and teachers. The LDs of children should be identified at the earliest and managed scientifically so that we can lead the children towards a very successful future.[10] The aim of the study was to develop a CBTE training module on learning disabilities in children in order to improve the knowledge, attitude, and practices of school teachers. The objectives of the study were stated as follows: To assess the existing knowledge, attitude, and practices of school teachers regarding learning disabilities in children by using structured questionnaires; to evaluate the effectiveness of CBTE training module on knowledge, attitude, and practices of school teachers regarding learning disabilities in school children by comparing the differences between pre-test and post-test scores; to estimate the correlation between knowledge, attitude and practices of school teachers on learning disabilities in children. The hypothesis of this study was H1: There will be statistically significant difference between the mean pre- and post-test knowledge, attitude, and practice scores of school teachers regarding LDs in children; H2: There will be a statistically significant relationship between knowledge, attitude, and practice of school teachers towa learning disabilities in children.

sociodemographic variables of school teachers (*n*=35)

Sociodemographic Variables	Frequency (f)	Percentage
Age in years		
<30 years	08	22.9
31-40 years	14	40.0
41-50 years	09	25.7
>50 years	04	11.4
Gender		
Male	08	22.9
Female	27	77.1
Educational status/qualification		
Diploma	02	05.8
Under graduate	27	77.1
Post graduate	06	17.1
Marital status		
Married	30	85.7
Unmarried	05	14.3
Divorce	-	-
Widowed	-	-
Religion		
Hindu	29	82.9
Muslim	02	05.7
Christian	04	11.4
Any others	-	-
Place of residence		
Rural	04	11.4
Urban	26	74.3
Semi-urban	05	14.3
Type of school		
Government	-	-
Private	35	100
Grant in aid	-	-
Type of family		
Nuclear	31	88.6
Joint	04	11.4
Extended	-	-
Type of employment		
Contract basis	03	08.6
Probation	05	14.3
Temporary	09	25.7
Permanent	18	51.4
Monthly income (in Rs.)		
<20,000	03	08.6
20,001-30,000	10	28.6
30,001-40,000	11	31.4
>40,000	11	31.4
Involved with group of students/taking classes	04	11.4
Lower primary	24	68.6
Upper primary	07	20.0
Both	-	-
Other than primary class		
Location of school		
Urban	35	100
Rural	-	-
Semi-urban	-	-
Presently, what specific role do you possess other than teaching?		
Class teacher	-	-
Subject teacher	05	14.2
Both a and b	30	85.8
Any other means specify	-	-

Contd...

Table 1: Contd...

Sociodemographic Variables	Frequency (f)	Percentage
Have you attended any training/workshops on management of learning disabilities in children?		
Yes	-	-
No	35	100
If yes, specify the media/mode of training	-	-
Total years of experience as a teacher:		
<5 yrs	10	28.6
6-10 yrs	12	34.3
11-15 yrs	09	25.7
>15 yrs	04	11.4
Do you have previous exposure on learning disabilities as part of the curriculum?		
Yes	-	-
No	35	100
During your service, have you identified any child with learning disabilities?		
Yes	-	-
No	35	100
Any experience in teaching children with learning disabilities/specific learning disability		
Yes	-	-
No	35	100

Table 1 describes the frequency and percentage distribution of sociodemographic variables of school teachers, which states that the majority of the school teachers (14, 40%) were in the age group of 31-40 years. In terms of gender majority 27 (77.1%) were females. Regarding educational qualification, most of the teachers (27, 77.1%) were undergraduates. 29 (82.9%) of them belonged to the Hindu religion. Regarding place of residence, most of them were from urban area (26, 74.3%). All of the study participants were working in private schools. 31 (88.6%) were from a nuclear family. 18 (51.4%) of the school teachers were permanent employees. 24 (68.6%) of the teachers were handling the upper primary group of students. In terms of total years of experience as teachers, 12 (34.3%) have 6-10 years of experience. Regarding the specific role which they possess other than teaching, most of them were 30 (85.8%) had been class teachers and subject teachers.

Materials and Methods

Study setting

The study was conducted on school teachers at Mother Theresa High School, Kolar.

Study duration

The study was done from December 05, 2020 to December 21, 2020.

Study design

A quasi-experimental study with evaluative research approach with one group pre-test and post-test research design was adopted.

Sample size and sampling

The samples were selected by using probability random sampling method in selecting the school, through stratified random sampling method further the samples were selected through simple random sampling technique with the sample size of 35 school teachers as per the Rules of Thumb, with approximately around 10% of the population that fulfils the selection criteria with the extension of support from their principal.

Criteria for sample selection

The inclusion criteria for participation were teachers who taught the students from Pre KG to 10th standard, who were working in Mother Thresa High School and the teachers who were available and willing to participate in the study. The exclusion criteria for the study were the teachers who had previous experience in special schools and who had already worked as a counsellor.

Data collection tool

A structured questionnaire was designed by the investigator himself in the English language. The following tools were used to collected data: Part-1, Sociodemographic Profile (18 questions); Part-II, Structured Questionnaires (140 questions). Section-A was a Structured Knowledge Questionnaire on Learning Disabilities in Children (50 multiple choice questions). The score interpretation was as follows: A score of 1 was given to the correct answer and a score of 0 was given to the wrong answer/incorrect response. The maximum possible score was 50. The level of knowledge was interpreted as inadequate knowledge (<50%), moderately adequate knowledge (51%–75%), adequate knowledge (>75%), Section-B was 5-point Likert scale on attitude of teachers in taking care of children with learning disabilities at school (50 items). The level of attitude score was interpreted as highly favourable attitude (81%–100%), favourable attitude (61%–80%), moderately favourable attitude (41%–60%), and unfavourable attitude (20%–40%). Section-C was a rating scale on practices toward the management of children with learning disabilities in classrooms at school under inclusive education (40 items). The level of practice score was interpreted as poor practice (below average, 0%–25%), satisfactory practice (average, 26%–50%), good practice (51%–75%), and excellent practice (75%–100%).

Data collection

On day 1 (05.12.2020), the pre-test was processed by making all the selected 35 school teachers assemble in the classroom. The teachers were divided into three different groups and the knowledge questionnaire was given to one group, attitude questionnaire to the second group, and practice questionnaire to the third group and vice versa until all the teachers gets complete with the pre-test. Confidentiality and anonymity were maintained during the process of data collection. Participants were informed that the research would not reveal any identifying information. Later, a teaching session on orientation towards learning disabilities was conducted by using a power point presentation (PPT) through lecture-cum-discussion with the help of a laptop and a liquid crystal display (LCD) on learning disabilities in children and its management at the classroom level by utilizing the CBTE training module for around 90 minutes followed by clarification of doubts and addon inputs with discussion towards the session. With this, the CBTE training module was emailed to all the teachers who had participated in the session, and they were requested to read and be updated for further learning process. A reminder was given to all the school teachers to join for post-test after 15 days on December 21,

Table 2: Overall distribution of pre-test and post-test scores, mean, SD of knowledge, attitude, and practice regarding learning disabilities in school children among school teachers (*n*=35)

	Pre-test						Post-test					
Study variable	Max. score	Min. score	Range	Mean	SD	Variance	Max. score	Min. score	Range	Mean	SD	Variance
Knowledge scores	39	21	18	30.97	5.33	28.44	40	23	17	35.89	4.41	19.49
Attitude scores	173	86	87	144.03	25.56	653.44	209	147	62	170.66	18.95	359.23
Practice scores	73	33	40	55.83	14.62	213.97	88	56	37	69.60	9.63	92.87

Table 2 reveals the overall distribution of pre-test and post-test scores, mean, SD of knowledge, attitude, and practice regarding learning disabilities in school children among school teachers where the mean knowledge score and SD in pre-test is 30.97 and 5.33, respectively, with the range and variance as 18 and 28.44. Similarly for attitude the mean score and SD was 144.03 and 25.56, respectively, with the range 87 and variance 653.44, whereas for the practice the mean score was 55.83 and SD was 14.62, with the range 40 and variance 213.97. The table also reveals with the post-test knowledge mean score is 35.89 with SD as 4.41 and range value as 17 and variance as 19.49. The post-test attitude mean score is 170.66 and SD is 18.95 as well as the practice mean score is 69.60 with SD as 9.63

Table 3: Effectiveness of CBTE training module by comparing the differences between pre-test and post-test scores on knowledge, attitude, and practices of school teachers regarding learning disabilities in school children (*n*=35)

Study variables	Pre-Test Mean	Post-Test Mean	Enhancement	Paired *t*-test value	df	Level of significance
Knowledge	30.97	35.89	4.92	6.724	34	0.000 (S), $P<0.05$
Attitude	144.03	170.66	26.62	5.983	34	0.000(S), $P<0.05$
Practice	55.83	69.60	13.77	5.228	34	0.000 (S), $P<0.05$

S: Statistically significant at $P<0.05$. Table 3 discusses the effectiveness of CBTE training module by comparing the differences between pre-test and post-test scores on knowledge, attitude, and practices of school teachers regarding learning disabilities in school children by using paired t test, where there was a gradual enhancement in the post mean scores of knowledge, attitude, and practices. The paired t test values were statistically significant at $P<0.05$, which proves that the CBTE training module is very effective for the school teachers

Table 4: Estimation of correlation between post-test knowledge, attitude, and practice scores of school teachers on learning disabilities in school children (*n*=35)

Study Variables	Post-Test Mean	SD	Pearson's Correlation *r*	Level of Significance
Knowledge vs Attitude	33.03	4.41	0.031	No correlation, 0.859 (NS), $P>0.05$
	170.66	18.95		
Attitude vs Practice	170.66	18.95	0.884 **	Highly positive correlation, 0.000 (S), $P<0.05$
	69.60	9.63		
Practice vs Knowledge	69.60	9.63	0.021	No correlation, 0.905 (NS), $P>0.05$
	33.03	4.41		

S: Statistically significant at $P<0.05$, NS: Not significant at $P>0.05$. Table 4 describes the relationship between post-test knowledge, attitude, and practice scores of school teachers on learning disabilities in school children by using Pearson's coefficient of correlation, which states that there is no correlation between knowledge and attitude, and between practice and knowledge, but the data showed that there is a highly positive correlation between attitude and practice at $P<0.05$

2020. On day 15, the post-test was done to all the school teachers by following the same procedure as done for the pre-test. Furthermore, the pros and cons of the CBTE training module and the session were elicited.

Data analysis

Overall, the process of data collection and the implementation of the module was for around 150 minutes. Later, the data was coded and subjected to statistical analysis by using the Statistical Package for the Social Sciences (SPSS) version 23.0 (IBM) software to analyse the data with descriptive and inferential statistics like frequency, percentage, mean, SD, paired *t* test, and Pearson coefficient of correlation.

Ethical issues

Formal permission was obtained from the institutional central ethics committee of the university (SDUAHER/KLR/R and D/48/2017-18 dated 07-07-2017) and the concerned approval was taken from the authority of the school. The investigator explained the purpose of the study and study subjects was taken approval through informed written consent directly, before they fill the questionnaire. The data were collected directly with the school teachers.

Discussion

According to the objectives of the study, the study findings revealed that the effectiveness of CBTE training module in comparing the differences between pre-test and post-test scores on knowledge, attitude, and practices of school teachers regarding learning disabilities in school children by using paired *t* test where there was a gradual enhancement in the post-mean scores of knowledge, attitude and practices and the paired *t* test values were statistically significant at $P < 0.05$, which proves that the CBTE training module was very effective for the school teachers. This finding is supported by a similar study conducted by Moharana K. on the effectiveness of guidelines on knowledge and attitude of trainee school teachers towards identification and management of children with specific learning disabilities. The findings revealed that the data were analysed using repeated measures analysis of variance (RMANOVA) to compare pre-test and post-test knowledge questionnaire and attitude scale score over the time period; the *P* value was significant at 0. 001. The pre-test knowledge mean score was 2.77, standard deviation (SD) was 2.224, post-test-I on 7th day mean was 44.48, and SD was 0.799; post-test-II on 60th day mean was 44.90 and SD was 0.313. The paired differences between the pre-test and post-test-I on

7th day knowledge showed the knowledge gained and the value was 41.71 and the paired differences between the post-test on 7th day and on 60th day knowledge score gained and the value was 0.42. The *P* value was significant at 0.001. This indicated that the guidelines for trainee school teachers toward identification and management of children with SPLD was effective in improving the knowledge and attitude significantly over the time period.[11]

Another similar study was carried out by Nisha. S, N. Kokilavani, Raja Shankar, Ashok revealed that the finding of the experimental group of teacher's pre-test knowledge and mean score was 16.6 (41.50%) and level of knowledge was inadequate. In post-test, knowledge score was 33.3 (83.25%). The level of knowledge was adequate in the experimental group. Similarly in the control group, pre-test knowledge mean score was 17.2 (43.00%) and post-test knowledge mean score was 19.1 (47.75%). In the comparison of experimental group and control group. In the pre-test, there was no significance difference between the experimental and control groups but after self-instruction module, a significant difference between said groups was observed. Teachers gained knowledge above 41.75% on learning disabilities after administration of the self-instruction module. This 41.75% of knowledge gain was the net benefit of this study which indicated the effectiveness of self-instructional module on learning disabilities in the experimental group than control group.[12] Hence the hypothesis (H1) that there is a statistically significant difference between the mean pre- and post-test knowledge, attitude, and practice scores of school teachers regarding learning disabilities in children was accepted as per the study's findings.

Implications

The findings of the current study have certain implications in practice: (1) CBTE training module helped to crystalize cognitive and metacognitive skills and changed some irrational beliefs embraced by teachers on identifying these children with learning disabilities; (2) It also helped the school teachers practice classroom management strategies in handling children with learning disabilities and also teaching them with their peers in the same classroom; (3) Prevention of dropout of students with learning disability from school was a major implication of this study since the National Education Policy 2021 emphasized that these school children should be treated under inclusive education; (4) Teachers of primary schools, especially of this category, need training programs continuously that will help them to identify children with learning disabilities at an early age itself, which in turn will protect the children from emotional deprivation; (5) Making school teachers understand the different types of learning disabilities and their characteristics helps them pinpoint the problems that are faced by the children and help teachers find an appropriate treatment program for them; (6) The school and administrative authorities should address the needs for professional development and training of teachers in integration of instructional methods for children with learning disabilities which will enhance the development of children with learning disabilities; (7) Recommend and design a competent curriculum on learning disabilities for the school teachers under their educational program in order to meet the challenges under professionalism and a response to the ethics of responsibility for the future; (8) Training programs should be pursued by all school teachers by enriching the knowledge and skills needed to heighten their competency and productivity.

Limitations

Time constraints in proceeding with the data collection and implementation of CBTE training module. The sample size was small, to generalize the findings, and only one school was opted for the study. Refusal of permission from some schools was an unexpected problem during our study process.

Conclusion

The study revealed that the level of knowledge, attitude, and practices regarding learning disabilities in children was found to be satisfactory among school teachers. Thus, it concluded that CBTE training module is needed to provide teachers with adequate information on learning disabilities in children, and it is very effective in improving the teachers knowledge, changing their attitude, and adopting practices in handling children with learning disabilities in school.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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CONCLUSION, IMPLICATIONS & RECOMMENDATIONS

CHAPTER -VIII

CONCLUSION, IMPLICATIONS & RECOMMENDATIONS

This chapter includes a comprehensive conclusion regarding significant research study insights and study implications that the results may very well have, followed by the development of recommendations and proposals for additional research that other researchers could build upon and continue, as well as the study limitations.

The purpose the research intended to evaluate the efficacy of a training module on competency-based teacher education (CBTE) on school teachers' knowledge, attitudes, and practices (KAP) addressing learning disabilities in children in a group of schools in the Kolar district.

Following conclusions are drawn based on the findings of the study:

Considering the outcomes of the current study, it may be inferred that during the pre- and post-test periods, school teachers' understanding of learning difficulties in children differed significantly, shows that according to the pre-test, 25.4% of teachers had insufficient knowledge, 72.6% had moderately adequate knowledge, and only 0.2% had sufficient knowledge. Even though none of the research participants had inadequate knowledge; instead, 57.7% of them had adequate knowledge on the post-test, and moreover, 42.3% of the school teachers had somewhat adequate knowledge.

On the basis of the results, in the pre-test, 20.0% of the instructors at the school had a somewhat positive attitude, 77.7% of them displayed positive attitude, just 2.3% had a had a very positive perspective, and none had an unfavourable attitude. Regarding the Post-test, the majority of them (63.4%) had extremely favourable attitudes, while 36.6 percent had favourable opinions, but none had neutral or unfavourable attitudes.

Pre-test results show that, in regard to practice level, 62% of school instructors had good practice, 27.4% had tolerable practice (average), and 08.6% had extraordinary level of practice, whereas only 0.2% of practices were subpar (below average), however in the Post-test larger sample, 47.7% of the school teachers had exceptional level of practice and 52.3% had good practice, while not even a single study participant had below average and adequate practice (average).

Comparing the knowledge, attitude, and behaviours of school instructors regarding learning difficulties in schoolchildren was done in relation to the outcomes of the CBTE training module. It was quite clear that the mean knowledge scores improved gradually between the pre- and post-tests, improving by 8.93, the attitude scores improved by 38.85, and the practice scores improved by 20.57. and the Paired 't' test results with mean comparisons reveal 49.18 for knowledge, 51.79 for attitude, and 21.57 for practice, with statistical significance at $P<0.05$ and degree of freedom at 349, respectively. The CBTE training module is particularly successful at improving teachers' understanding, attitudes, and practises towards learning difficulties in children., which is considered to be the main finding of the study,

which is demonstrated by the plainly visible proof of intended change in the variables.

The findings of the current research provide information on the on the degree of evaluation of teachers' knowledge, attitudes, and practices related to learning disabilities in children in light of the most recently recommendations made in accordance with the **"National Education Policy (NEP-2020)"** on inclusive education for all students. Since the research group's post-test mean scores for children with learning disabilities increased, were statistically significant at $P<0.05$, and were deemed satisfactory by school teachers, the research showed that there had been a considerable improvement in the knowledge, attitude, and practice levels.

As a way to enhance the academic performance of children with learning impairments, school teachers must communicate the necessary knowledge and importance of using the strategies for caring for children who have learning disabilities. Preference should be given to the application of research in the module's self-learning technique.

Accordingly, the researcher came to the following conclusion: "Competency Based Teacher Education (CBTE)" a Training Module is needed to provide sufficient information on children's learning disabilities and it is very effective in enhancing the teacher's knowledge, changing their mindset, and adopting the practices in handling the students with learning disabilities in the classroom. It was also highlighted how crucial it is for teachers to have training in conventional frameworks in order to successfully handle children with learning impairments. All programmes for

educating teachers should include courses focused toward promoting education for all.

Therefore, the study helps educators to make the most of technology-based lesson plans that are accessible online and through various training courses on the subject of being aware of learning difficulties in children that will aid in the early detection and correction of children with learning disabilities, as well as in the updating of their knowledge, developing a desired attitude change, raising their proficiency, and improving their management abilities in the classroom in managing both normal children and the children with learning disabilities in a typical classroom in order to attain the competitive nature of the modern educational system.

When considering its utility, relevance, and practicability, most school teachers expressed a favourable opinion of the "Competency Based Teacher Education" (CBTE) a Training Module. The researcher came to the final conclusion that the CBTE training module assisted in the crystallization of competencies in cognitive and metacognition, and in the transformation of some teachers' erroneous ideas regarding the identification of these children with learning impairments. Additionally, it assisted teachers in developing classroom management strategies for handling students with learning difficulties and educating them alongside classmates in the same classroom, which is essential for helping these students achieve their maximum potential in the future.

THE STUDY IMPLICATIONS: Here are the few potential implications for the future of this research's findings:

GENERAL PRACTICE AND EDUCATION:

1. Teachers in elementary schools, especially those in this group, require ongoing training programmes that will enable them to recognize children who have learning difficulties at a young age, preventing emotional deprivation.
2. Since the "National Education Policy 2021" emphasizes that these students in school should be handled under inclusive education, one key implication of this study is the preventing learning-disabled children from dropping out of school.
3. Advising and developing a suitable curriculum for teachers on learning disabilities as part of their educational programme with the purpose of overcoming the difficulties of professionalism and to address the moral principles of future responsibility.
4. All school teachers should enroll in training programmes to improve their knowledge and abilities to be able to increase their competence and productivity.
5. In accordance with the learners' recognized learning challenges, teachers should provide remedial support.
6. Additionally, each student should receive learning disability awareness instruction during their schooling.
7. To raise awareness of learning difficulties in children, the government should organize ongoing training programmes for each and every parent and educator at the national level.

NURSING PRACTICE:

1. Making teachers aware of many forms of learning disabilities and their traits enables them to recognise the issues that the kids are having and locate the best possible treatment options, counselling, and referral services for them.
2. In an effort to enhance the growth of kids with learning difficulties, the school and administrative authorities have to take care of the issue and address the need for teachers' professional growth and training in integrating instructional approaches for those children.
3. Nurse educators and practitioners can encourage both teachers and parents to learn about their children's psychological needs and coping mechanisms.
4. The health nurse at the school can assist in identifying children and referring them to a psychiatrist for clinical diagnoses for the need to begin treatment as soon as possible with proper cooperation from the child's home and school.

NURSING EDUCATION:

1. It will be important for the nurses in our nursing programme to recommend and design a course on children's learning impairments within the psychiatric nursing, paediatric nursing, and community health nursing programmes in order to meet the challenges associated with children's behavioural issues and school mental health programmes.
2. The significance of continuing nursing education programmes should be highlighted to all nursing faculty members and students in order to improve their knowledge and competency in caring for any children that have learning difficulties.
3. Learning disabilities can be made more widely known in the community through regular programmes for mental health education in schools.

NURSING ADMINISTRATION:

1. It suggests that namely Ministry of Education, its division, and organizations at every level be in charge of formulating fresh educational guidelines and paying attention to the adopting both short- and long-term strategic goals/plans to improve the standard of instruction for children with learning difficulties by depending on developing various teacher enrichment programmes.
2. Nursing administration should coordinate with schools to offer the best atmosphere and resources for children who have learning difficulties.
3. Counselling sessions for parents as well as teachers can be planned to provide information on how to detect and care for kids with particular learning difficulties.
4. Institutions of higher learning should uphold their obligations to care for and assist students who struggle with learning disabilities in all of their pursuits.
5. A forum for communication, collaboration, and social support among the parents of children who attend educational institutions yet have learning challenges.

NURSING RESEARCH:

1. Futuristic recommendations to the upcoming researchers include a greatly expanded potential for research on childhood learning difficulties in order to conduct numerous research projects on classroom management, especially, for kids with particular learning disabilities and the application of assistive technologies in students with learning impairments. These young individuals who struggle with learning difficulties have access to resources and services.

2. Regarding the emergence of various systems to continuously identify the training requirements for school teachers to give them training programme depending on their training needs, substantial nursing research using a meticulous methodology can be conducted.
3. It is possible to do research on changing the rules and procedures governing inclusive programmes in government schools and the different accommodations made for kids with learning challenges.

RECOMMENDATIONS:

This research demonstrates improved results with proper awareness and application in terms of knowledge acquired in putting forth the favourable, positive attitude and practice. The guidelines aimed towards futuristic researchers are listed below with the intention to further boost research activities.

1. The same study may be carried out at many settings using a true experimental design.
2. Appropriate follow-up studies would involve longitudinal investigations using various interventional strategies.
3. Studies can be done to assess the factors impacting and impeding teachers' ability to recognize and address learning difficulties in students.
4. The same kind of research may be done on different training programme models in accordance with latest developments in teacher preparation.
5. Future studies can concentrate mainly on controlling students with disabilities in the classroom with certain learning difficulties, examine its traits, and determine how it affects education for everybody.

6. In this context, longitudinal research ought to be performed to compare instructors' knowledge and mindset both before and after taking part in lengthy training programmes.
7. To carry out exploratory research that demonstrate the effects of different training programmes made available to educators of learners with learning difficulties on their ability to teach, their professional performance, and their level of job fulfilment.
8. Comparative studies can be carried out between parents and teachers in order to determine the prevalence of particular learning disorders and how they are experienced in school-age children.
9. Researching various facets of parental support for children with learning challenges may also be beneficial.
10. Future studies could examine the school's organizational elements and instructional strategies to see how they affect the academic performance of students with learning difficulties.
11. Parents' attitudes and understanding regarding learning difficulties might be investigated through an exploratory survey.
12. A follow-up investigation on the efficient use of the "National Brain Research Center's (NBRC)" screening tools for learning difficulties (JST) (5 to 7 years of age / classes 1 and 2) and (MST) (age 8 to 10 years / classes 3, 4 and 5) can be executed among school teachers.
13. Additionally, it is possible to conduct research. that focuses solely on the views of administrators, educational supervisors, educational officers, and school authorities, as well as principals and headmistresses about the

standards and prerequisites for teacher preparation programmes with regard to learning disabilities among teachers.

14. On the basis of current situation, one among the most significant issues for school teachers is recognizing the learning-disabled pupils and their suggested management/strategies in order to provide excellent education. Hence, it is necessary to perform a a research project in the future on this topic.
15. It is strongly advised to revamp the training of teacher's curriculum, make a course on special education as a required paper, offer in-service special education training programmes, and implement remedial teaching techniques.

STRENGTH OF THE STUDY:

This study main strength is that, it involved a total of 350 school teachers, which is a large enough sample size to allow for generalization of the results. **Its first research at the university of SDUAHER on a "Competency Based Teacher Education (CBTE)" training module on Knowledge, Attitude, and Practice about Learning Disabilities in Children among School Teachers which was carried out in selected few schools of Kolar,** Consequently, the present study might result in the creation of many such studies. The study findings close knowledge, attitude, and practice gaps regarding children's learning disabilities, particularly in the areas of identifying and treating children with specific learning problems.

The study thus supports the idea that that training programmes will be implemented systematically will aid teachers in enhancing the academic performance

of children with learning difficulties. The researcher further contends that by providing teachers with sufficient flexibility during the teaching-learning process, the larger educational system can play an important part in motivating them to employ inclusive practices. This study also clarifies the necessity of teacher enrichment programmes and the encouragement of the usage of cutting-edge, knowledge-based educational resources on learning impairments that give teachers a fulfilling work environment.

LIMITATIONS:

1. Time restrictions on collecting data, managing the deployment of the "Competency Based Teacher Education (CBTE)" training module, during school sessions, as well as on keeping research participants in order to lower attrition rates.
2. Unexpected difficulties throughout the process of gathering data, included some schools' refusals to grant permission.

NEW KNOWLEDGE GENERATED BY MEANS OF THE STUDY PROCESS:

1. Organizing and structuring the tool or questionnaire.
2. Launching and creating a training module for school teachers called "Competency-Based Teacher Education (CBTE)".
3. Through a minor project, it was discovered that teachers are particularly interested in learning about children's learning problems and how to spot those children by means of several screening techniques.

4. Using a “Competency Based Teacher Education (CBTE)” training module to organize the strategy for gathering data and holding training sessions on learning disabilities.
5. Data coding, analysis, and interpretation using the (SPSS) programme, as well as additional training in advanced statistical techniques.
6. Follow-up research on the depth of school instructors' awareness and application of the process of screening students to find children who struggle with learning difficulties and managing them in the classroom have been observed, if necessary, further referring to the specialist.
7. Writing aa research report and submit it for publication in accordance with the specifications of the particular journals that are acknowledged according to the UGC Care List I & II.

ACHIEVIMENT /MERIT OF THE STUDY:

Following the implementation of the “Competency Based Teacher Education (CBTE)” training module, the teachers gained the necessary knowledge and flourished in a positive attitude to identify learning disabilities in children as early as possible and to convey the necessary remedial management techniques for these children who have behavioural problems in addition to their scholastic difficulties.

This chapter discussed the study's conclusions, ramifications, suggestions, strengths, and limits likewise the new knowledge it generated.