

A study to assess the effectiveness of structured teaching programme on knowledge of teacher trainees regarding specific learning disabilities among children in selected teachers' training institute, Bangalore

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ABSTRACT- BACKGROUND OF STUDY: Nearly 4 million school-age children have learning disabilities, 7.7% of children have ever been told they had learning disability. Prevalence of reading disability is conservatively estimated to range between 4 percent and 10 percent in general among school-aged population in the United States. In India, prevalence estimates of learning disability ranges from 9-39% and the incidence of dyslexia in primary school children has been reported to be 2-18%, of dysgraphia 14%, and of dyscalculia 5.5%. **METHODOLOGY:** One group pre test post test quasi experimental design was used. Non probability convenient sampling technique was used to select the sample that is 60 Teacher trainees at Sri Lakshmi Devi teachers training institute, Sunkadkatte, Bangalore. The tool used is structured questionnaire to collect data through structured interview schedule. **RESULT:** The result of the study revealed that majority of teacher trainees 49(81.67%) had inadequate level of knowledge about specific learning disabilities among children whereas 11(18.33%) of teacher trainees had moderate level of knowledge and none of teacher trainees had adequate level of knowledge regarding specific learning disabilities among children before the administration of structured teaching programme. However, after administration of structured teaching programme on specific learning disabilities among children, majority of teacher trainees 44(73.33%) had adequate knowledge about specific learning disabilities among children whereas 16(26.67%) of teacher trainees had moderate level of knowledge and none of the teacher trainees had inadequate knowledge regarding specific learning disabilities among children. The difference between pre test knowledge and post test knowledge score of teacher trainees regarding specific learning disabilities among children was 35.33% (81.93-46.60%) so the significance difference in knowledge score was due to structured teaching programme. The net benefit of structured teaching programme was 35.33%. **CONCLUSION:** The findings of this study supports the need for schools and teacher training institute to conduct education and

training programme for teacher and teacher trainees on specific learning disabilities among children.

Key Words: Specific learning disabilities, teacher trainees

INTRODUCTION

Learning disability (LD) is a general term that describes specific kinds of learning problems. A learning disability can cause a person to have trouble in learning and using certain skills. The skills most often affected are reading, writing, listening, speaking, reasoning, and doing maths. Learning disabilities vary from person to person; one person with Learning disability may not have the same kind of learning problems as another person with Learning disability. One person may have trouble with reading and writing, another person with Learning Disabilities may have problems in understanding maths, Still another person may have trouble in each of these areas, as well as with understanding what people are saying (National Dissemination Center for Children and Youth with Disabilities [NICHCY]).

Nearly 4 million school-age children have learning disabilities, 7.7% of children have ever been told they had learning disability. Prevalence of reading disability is conservatively estimated to range between 4 percent and 10 percent in general among school-aged population in the United States. In India, prevalence estimates of learning disability ranges from 9-39% and the incidence of dyslexia in primary school children has been reported to be 2-18%, of dysgraphia 14%, and of dyscalculia 5.5%.²

The National Joint Committee on Learning Disabilities (NJCLD, 1998) believes that comprehensive interdisciplinary education programs

are necessary for the preparation of all education professionals. To serve the needs of students with learning disabilities most effectively, all teacher trainees should have preparation that includes the competencies in the area of learning disability. By doing a thorough review of teacher education, the researcher felt that after the thorough analysis of the curricula and also the question papers of the teacher education in India showed that there is only one unit on the childhood psychological problems. The teacher trainees hardly remember the utterance of the word learning disability during their course period. Hence, learning disabilities is one such area where adequate knowledge in handling these children in class room situation .⁶

Children with learning disabilities should enjoy the same rights of access to healthcare service entitled to general population. Children with severe learning disabilities may need special schools and often have associated with mental disorders. Children with learning disability are more vulnerable to the full range of mental health disorders and also have additional psychosocial, physical and general health problems these include self injurious behavior, significant behavioral difficulties, speech and language problems and difficulties with sleep, eating and elimination.³

Wilson AM et al. (2009) conducted study on mental health of Canadians with self reported learning disabilities. The researchers were examined rates of mental health problems among persons with learning disabilities between the age group 15-44 years. Study found that people with learning disabilities more than 50% were reported high level of depression, anxiety disorders, suicidal thoughts, visited to mental health professionals and poor over all mental health than those persons without learning disabilities. Differences found in the older adults sample (ages 30-44years) who were even larger than adolescents sample (age 15-21years) for suicidal thoughts, depression and distress. Male with learning disabilities were more likely to report depressive episodes, anxiety disorders and consulted with health professionals whereas female with learning disabilities were more likely to report high distress, suicidal thoughts and poor general mental health. Study concluded that people with learning disabilities are more vulnerable to full range of mental health disorders.⁷

There are many reasons in children for school failure, but a common one is a specific learning disability, children with learning disabilities usually have a normal range of intelligence. They try very hard to follow instructions, concentrate, and “be good” at home and in school. Yet, despite this effort, he or she is not mastering school tasks and falls behind. Learning disabilities affect at least 1 in 10 school children. A recent National Institutes of Health study showed that 67 percent of young students who were at risk for reading difficulties became average or above average readers after receiving help in the early grades.⁸

Wagner et al. (2005) opines that identification of learning disability begins when parents or teachers suspect that student is having problem in coping with everyday school tasks because it is always an educational one. The teachers rapport with a learning disabled child is proved to be vital in helping the child succeed. According to learning disabilities services, students can greatly benefit when the teacher takes a little time and thought to accommodate these needs. These students may need accommodation in some class room activities, assignments and exams. Making the child aware of a disability is a great service to the child. Unless such children are identified and properly treated, they may develop secondary emotional, social and family problems².

It is in this context that the importance of teacher trainees becomes vital in safeguarding and promoting the mental health of children and early identification of deviations from normal. The school is one of the most organized and powerful systems in the society which presents opportunity to work through it and to influence the health and well being of those who come in contact with it. This is especially true in Indian setting where there is a considerable shortage in mental health facility for children. Thus nurses will be a dynamic force, instrumental and indispensable in assisting the teacher to learn, to recognize and to help children with learning disability.

Hence the researchers felt that it is important to understand knowledge of teacher trainees towards the child's specific learning disabilities as they who would become the future teachers and therefore it is essential that they should have the knowledge regarding the learning disabilities in children.

OBJECTIVES OF THE STUDY

1. To assess the knowledge of teacher trainees regarding specific learning disabilities among children before administering the structured teaching programme.
2. To evaluate the effectiveness of structured teaching programme to teacher trainees regarding the knowledge about specific learning disabilities among children.
3. To examine association between the level of knowledge and selected socio demographic variables of teacher trainees towards specific learning disabilities among children.

METHODOLOGY

The present study employed an evaluative research approach with a one-group pre-test post-test quasi-experimental design to assess teacher trainees' knowledge of specific learning disabilities among school children. The sample for the present study consists of 60 teacher trainees from Sri Lakshmi Devi Teachers Training Institute, Sunkadakatte, Bangalore, who meet the study's inclusion criteria. The study tool consisted of two sections: Section I for collecting socio-demographic data of teacher trainees, and Section II, a knowledge questionnaire on specific learning disabilities. The tool, along with the study's objectives, problem statement, and blueprint, was reviewed for content validity by 11 experts from relevant fields, including Mental Health Nursing, Psychiatry, Child Health Nursing, Psychosocial Work, and Biostatistics. Reliability was established using the split-half technique with Spearman-Brown's Prophecy formula, yielding a reliability coefficient of $r = 0.90$, indicating high reliability.

A structured teaching program on specific learning disabilities was developed with guidance from a mentor and Mental Health Nursing experts, covering topics such as definitions, types, causes, symptoms, identification, and management. The program, presented using PowerPoint, was administered to teacher trainees from Sri Lakshmi Devi Teachers Training Institute in Bangalore, with a pre-test conducted before the session and a post-test administered seven days later to assess knowledge retention.

RESULTS

TABLE -1 SOCIO- DEMOGRAPHIC PROFILE

N=60

S.No	Demographic Variables	f	Percentage
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1	Age		
	a. 18-20 years	41	68.33
	b. 20-22 years	2	3.33
	c. 22-24 years	13	21.67
	d. Above 24 years	4	6.67
2	Gender		
	a. Male	22	36.67
	b. Female	38	63.33
3	Religion		
	a. Hindu	52	86.67
	b. Muslim	2	3.33
	c. Christian	6	10.00
	d. Others	0	0
4	Marital status		
	a. Single	40	66.67
	b. Married	20	33.33
	c. Divorce	0	0.00
5	Class handled by teacher		
	a. Lower primary	53	88.33
	b. Higher Primary	7	11.67
6	Place of residence		
	a. Urban	30	50.00
	b. Rural	19	31.67
	C. Semi urban	11	18.33
7	Do you have any earlier information regarding specific learning disabilities?		
	a. Yes	42	70.00
	b. No	18	30.00

Data in the table 1 reveals that, the majority of teacher trainees, 41 (68.33%), were in the age group of 18-20 years, followed by 13 (21.67%) in the 22-24 years range, 4 (6.67%) above 24 years, and only 2 (3.33%) in the 20-22 years group. Regarding gender, 38 (63.33%) respondents were female, while 22 (36.67%) were male. In terms of religion, 52 (86.67%) trainees identified as Hindu, 6 (10%) as Christian, and 2 (3.33%) as Muslim. The marital status distribution showed that 40 (66.67%) were single, and 20 (33.33%) were married.

Most teacher trainees, 53 (88.33%), handled lower primary classes, with only 7 (11.67%) handling higher primary classes. In terms of residence, 30 (50%) came from urban areas, 19 (31.67%) from rural areas, and 11 (18.33%) from semi-urban areas. Additionally, 42 (70%) of the trainees had prior knowledge of specific learning disabilities, while 18 (30%) did not.

TABLE – 2: Distribution Of Knowledge Score Of Teacher Trainees Regarding Specific Learning Disabilities

Aspects of knowledge	Level of Knowledge					
	Inadequate (<50%)		Moderate (50- 75%)		Adequate (>75%)	
	f	%	f	%	f	%
General Information	44	73.33	14	23.33	2	3.33
Types	48	80.00	12	20.00	0	0.00
Causes	47	78.33	10	16.67	3	5.00
Signs and Symptoms	43	71.67	15	25.00	2	3.33
Management	46	76.67	14	23.33	0	0.00
Overall	49	81.67	11	18.33	0	0.00

It is noticeable in the table that the teacher trainees had scored below average knowledge score in all the aspects of specific learning disabilities among children. Taking into consideration of overall score, majority of teacher trainees 49(81.67%) had inadequate level of knowledge about specific learning disabilities among children whereas 11(18.33%) teacher trainees had moderate level of knowledge and none of teacher trainees had adequate knowledge regarding specific learning disabilities among children before administration of structured teaching programme.

TABLE -3classification Of Teacher Trainees On Pre-Test Knowledge Level Regarding Specific Learning Disabilities.

Knowledge Level	Category	Respondents	
		f	Percentage (%)
Inadequate	< 50 % Score	49	81.67
Moderate	50-75 % Score	11	18.33
Adequate	> 75 % Score	00	0.0
Total		60	100.0

Table No:3 Shows the pre test level of knowledge of teacher trainees regarding specific learning disabilities among children. In the table it is noticeable that majority of teacher trainees 49(81.67%) had inadequate level of knowledge about specific learning disabilities whereas 11(18.33%) of teacher trainees had moderate level of knowledge and none of teacher trainees had adequate knowledge regarding specific learning disabilities among children before administration of structured teaching programme.

TABLE-4 Pre -Test Knowledge On Specific Learning Disabilities.

Content	No. of questions	Mean ± SD	% of knowledge
Overall pre-test knowledge	30	13.98 ± 3.39	46.6%

Table No: 4 depicts that the teacher trainees had obtained significantly low score on overall knowledge score regarding specific learning disabilities among children before administration of structured teaching programme with overall mean 13.98 (46.60%) with standard deviation 3.39.

Distribution Of Knowledge Score Of Teacher Trainees Regarding Specific Learning Disabilities After Administration Of Structured Teaching Programme.

It is noticeable in the table that the teacher trainees had scored above average knowledge score in all the aspects of specific learning disabilities among children. Taking into consideration of overall score, majority of teacher trainees 44(73.33%) had adequate level of knowledge about specific learning disabilities among children whereas 16(26.67%) of teacher trainees had moderate level of knowledge and none of teacher trainees had inadequate knowledge regarding specific learning disabilities among children after administration of structured teaching programme.

TABLE -5

Classification Of Teacher Trainees On Post-Test Knowledge Level Regarding Specific Learning Disabilities.

		Respondents

Knowledge Level	Category	f	Percentage (%)
Inadequate	< 50 % Score	0	0.0
Moderate	50-75 % Score	16	26.67
Adequate	> 75 % Score	44	73.33
Total		60	100.0

Table No 5 Shows the post-test level of knowledge of teacher trainees on specific learning disabilities among children in which majority of teacher trainees 44(73.33%) had adequate level of knowledge about specific learning disabilities among children whereas 16(26.67%) of teacher trainees had moderate level of knowledge and none teacher trainees had inadequate knowledge regarding specific learning disabilities among children after administration of structured teaching programme.

TABLE-6
Post -Test Knowledge On Specific Learning Disabilities.

Score of	No. of questions	Mean ± SD	% of knowledge
Overall post-test knowledge	30	24.58 ± 2.98	81.93%

Table No 6, Shows overall post-test knowledge level of teacher trainees regarding specific learning disabilities among children. The post-test table depicts that the teacher trainees had obtained significantly high score on overall knowledge score regarding specific learning disabilities among children after administration of structured teaching programme with overall mean 24.58(81.93%) and standard deviation 2.98.

TABLE -7 Determining The Knowledge Of Teacher Trainees Regarding Specific Learning Disabilities By Comparing Pre-Test With Post-Test.

N=60

Level of Knowledge	Pre test		Post test	
	f	%	f	%
Inadequate (< 50%)	49	81.67	0	0.00
Moderate	11	18.33	16	26.67

(50-75%)				
Adequate (>75%)	0	0.00	44	73.33

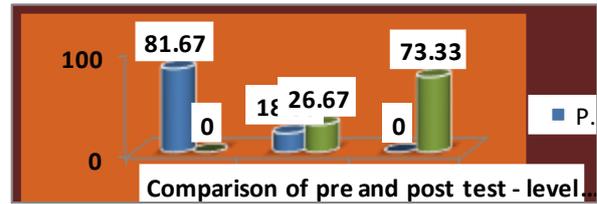


Figure-1 Comparison of pre-test and post test level of knowledge.

Table No 8 Shows the comparison of pre test and post-test knowledge of teacher trainees on specific learning disabilities. The pre-test table depicts majority of teacher trainees 49(81.67%) had inadequate level of knowledge about specific learning disabilities among children whereas 11(18.33%) of teacher trainees had moderate level of knowledge and none teacher trainees had adequate knowledge regarding specific learning disabilities among children before administration of structured teaching programme.

The post-test table depicts that majority of teacher trainees 44(73.33%) had adequate level of knowledge about specific learning disabilities among children whereas 16(26.67%) of teacher trainees had moderate level of knowledge and none teacher trainees had inadequate knowledge regarding specific learning disabilities among children after administration of structured teaching programme.

Hence the data reveals the effectiveness of structured teaching programme.

TABLE -8 Determination of Overall Knowledge Score Before And After Post-Test

Score of	f	Pre-test Mean±SD	Post-test Mean±SD	Paired t-test
Overall Knowledge	60	13.98±3.39	24.58±2.98	t=15.87 * P=0.05

*significant at 5% level, t (0.05, 99df) =1.96

Table No.: 8 Shows the determination of overall knowledge score before and after the administration of structured teaching programme. On an average teacher trainees have improved their knowledge regarding specific learning disabilities among children after the administration of structured teaching programme.

The difference between pre test and post-test knowledge score is more and it is statistically significant. Statistical significance was calculated by using paired 't' test.

The Knowledge Of Teacher Trainees Regarding Specific Learning Disabilities Post Test.

Result shows that teacher trainees had scored more in all aspects of specific learning disabilities among children after the administration of structured teaching programme.

TABLE – 9
Determination of Overall Knowledge Gain After Post-Test

Table No: 9 Reveals the determination of over-all knowledge gain by teacher trainees regarding specific

Score of	f	Pre-test Mean±SD	Post-test Mean±SD	Knowledge gain Mean±SD
Overall Knowledge	60	13.98±3.39	24.58±2.98	10.60 ± 1.16

learning disabilities among children after the administration of structured teaching programme. In the pre-test the teacher trainees were able to answer only 13 questions out of 30 questions. After the structured teaching programme teacher trainees were able to answer 24 questions out of 30 questions in general, the teacher trainees were able to answer 11 more questions. This indicates the knowledge gain by teacher trainees after the administration of structured teaching programme regarding specific learning disabilities among children.

TABLE – 10: Effectiveness of Structured Teaching Programme

Score of	Mean % of Pre-test	Mean % of Post-test	Mean % of knowledge gain
Knowledge on specific learning disabilities.	46.60%	81.93%	35.33%

Table No: 10 Depicts the net benefit due to the administration of the structured teaching programme

regarding specific learning disabilities among children. Teacher trainees had gained 35.33% of more knowledge regarding specific learning disabilities among children after the administration of structured teaching programme. Therefore 35.33% of knowledge gain is the net benefit of the study.

TABLE – 11: Association between demographic variables and post test knowledge level of teacher trainees on specific learning disabilities among children

N=60

S.no	Demographic Variables	Level of Knowledge						chi square
		Inadequate		Average		Adequate		
1	Age	No	%	No	%	No	%	
	a. 18-20 years	0	0	8	19.51	33	80.49	3.67 df 3 N.S
	b. 20-22 years	0	0	1	50.00	1	50.00	
	c. 22-24 years	0	0	5	38.46	8	61.54	
	d. Above 24 years	0	0	2	50.00	2	50.00	
2	Gender							
	a. Male	0	0	10	45.45	12	54.55	6.27 df 1 S*
	b. Female	0	0	6	15.79	32	84.21	
3	Religion							
	a. Hindu	0	0	11	21.15	41	78.85	6.27 df 2 S*
	b. Muslim	0	0	1	50.00	1	50.00	
	c. Christian	0	0	4	66.67	2	33.33	
	d. Others	0	0	0	0.00	0	0.00	
4	Marital status							
	a. Single	0	0	9	22.50	31	77.50	1.06

	b. Married	0	0	7	35.00	13	65.00	df 1
	c. Divorce	0	0	0	0.00	0	0.00	N.S
5	Class handled by teacher							
	a. Lower primary	0	0	11	20.75	42	79.25	8.11
	b. Higher Primary	0	0	5	71.43	2	28.57	df 1 S*
6	Place of residence							
	a. Urban	0	0	7	23.33	23	76.67	0.71 df 2
	b. Rural	0	0	5	26.32	14	73.68	
	c. Semi urban	0	0	4	36.36	7	63.64	
7	Earlier information regarding specific learning disabilities?							
	a. Yes	0	0	10	23.81	32	76.19	0.59
	b. No	0	0	6	33.33	12	66.67	df 1 N.S

NS= not significant. S= Significant at 5% level (ie., 0.05 level)

Table-11: Shows the association of knowledge level of teacher trainees regarding specific learning disabilities among school children after administering the structured teaching programme with their selected demographical variables, using Chi-square test. The analysis revealed that there is significant association was found with female gender, Christian religion and the teacher trainees who had handled higher primary classes at $p < 0.05$ and no association could be found with other demographic variables of teacher trainees.

DISCUSSION

The present study assessed the impact of a structured teaching program on teacher trainees' knowledge

regarding specific learning disabilities. It found a significant increase in knowledge post-intervention, with the majority of trainees moving from inadequate to adequate knowledge levels. In the pre-test, 81.67% of trainees had inadequate knowledge, while post-test results showed 73.33% with adequate knowledge, indicating a substantial 35.33% knowledge gain. This finding is supported by similar studies showing the effectiveness of structured teaching programs in enhancing knowledge among teacher trainees. For example, a study in Kolar district reported a significant knowledge gain post-intervention, with a mean score increase from 17.75 to 28.78 and a highly significant p-value, confirming that structured teaching can effectively improve understanding of learning disabilities

In terms of demographic associations, the present study noted that gender, religion, and teaching experience with higher primary classes were significantly associated with increased knowledge levels in the post-test. Similarly, studies on learning disabilities among teachers highlight that certain demographic factors, like teaching specialization and prior exposure to learning disability cases, influence knowledge levels. For instance, research involving high school teachers in special education indicated better knowledge and more positive attitudes toward learning disabilities among those who regularly dealt with such cases.

However, contrasting findings appear in studies that suggest persistent misconceptions among pre-service teachers, particularly regarding conditions like dyslexia, which is often mistaken for a visual perception issue rather than a phonological processing problem. These studies highlight a gap in explicit knowledge despite implicit skills, suggesting that foundational misconceptions may persist even post-training. In comparison, the present study's post-test results indicate improved conceptual clarity, though a direct assessment of misconceptions was not reported

In conclusion, while the present study aligns with broader literature on the effectiveness of structured teaching programs, additional integration of specialized tools and a focus on correcting specific misconceptions could enhance the preparedness of teacher trainees.

SUMMARY AND CONCLUSION

The major findings of the study revealed that majority of teacher trainees 49 (81.67%) had inadequate level

of knowledge about specific learning disabilities among children whereas 11(18.33%) of teacher trainees had moderate level of knowledge and none teacher trainees had adequate knowledge regarding specific learning disabilities among children before administration of structured teaching programme.

However, majority of teacher trainees 44(73.33%) had adequate level of knowledge about specific learning disabilities among children whereas 16(26.67%) of teacher trainees had moderate level of knowledge and none teacher trainees had inadequate knowledge regarding specific learning disabilities among children after administration of structured teaching programme. Hence the data reveals the effectiveness of structured teaching programme.

From the data analysis and findings of the present study, it is concluded that there was significant difference between the pre-test knowledge level and post-test knowledge level of teacher trainees regarding specific learning disabilities. The mean knowledge score of 60 teacher trainees during the pre-test was 46.60% where as it had increased up to 81.93% during the post-test as an effectiveness of structured teaching programme. Therefore the difference assessed was 35.33% between pre-test and post-test. Hence on-going teaching and health education programs can further improve the knowledge of teacher trainees.

The findings of this study supports the need for schools and teacher training institute to conduct education and training program on specific learning disabilities among children . This study has proved that the teacher trainees have remarkable increase in knowledge regarding specific learning disabilities among children after implementation of the structured teaching programme. Thus for the future out look there is need to improve their knowledge by teaching or training programme on specific learning disabilities.

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