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IMPORTANCE OF EARLY DIAGNOSIS OF LEARNING DISORDER AND MANAGEMENT

Paediatrics

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ABSTRACT

The present study has attempting to overcome some of their lacunas in the field of learning diagnosis of learning disorder of various groups of school going children and carries implications for future remedial management training programmes. Sample for the study includes 156 school going children (89 boys, and 67 girls) between the age group of 6-10 years, from different (ICSE, CBSE) schools from Nagpur. Study showed statistically significant differences in all areas of reading, mathematics, written language, oral language areas at the level of <0.05. Study also shows statistically significant differences in all behaviour domain areas after psychotherapy, cognitive based remedial educational training, behaviour therapy significant at <0.05 level. Early intervention suggests that schools, teacher, parents, special educators should not wait for difficulties in students to reinforce, but they should try to find students "at risk" as early as possible. In this study Cognitive based remedial education training ,reinforcement technique modifying student behaviour had positive effect .In reinforcement student can be reinforced for progress toward effect involved and achievement of behavioural goal.

KEYWORDS

WISC-IV, Woodcock Johnson (WJ- 3), child behaviour checklist, behaviour therapy, cognitive remedial educational training.

INTRODUCTION

Learning disorder are neurologically-based processing problems. These processing problems can interfere with learning basic skills such as reading, writing and/or math. They can also interfere with higher level skills such as organization, time planning, abstract reasoning, long or short term memory and attention. It is important to realize that learning disorder can affect an individual's life beyond academics and can impact relationships with family, friends and in the workplace.

Since difficulties with reading, writing and/or math are recognizable problems during the school years, the signs and symptoms of learning disorder are most often diagnosed during that time. However, some individuals do not receive an evaluation until they are in post-secondary education or adults in the workforce. Other individuals with learning disorder may never receive an evaluation and go through life, never knowing why they have difficulties with academics and why they may be having problems in their jobs or in relationships with family and friends.

Learning disorder should not be confused with learning problems which are primarily the result of visual, hearing, or motor handicaps; of mental retardation; of emotional disturbance; or of environmental, cultural or economic disadvantages.

Generally speaking, people with learning disorder are of average or above average intelligence. There often appears to be a gap between the individual's potential and actual achievement. This is why Learning disorder are referred to as "hidden disorder": the person looks perfectly "normal" and seems to be a very bright and intelligent person, yet may be unable to demonstrate the skill level expected from someone of a similar age. Ex.- According to his parents his child is perfectly doing well in school and tuitions, and he know everything but he didn't performing well in examination and not showing interest in studies.

A learning disorder cannot be cured or fixed; it is a lifelong challenge. However, with appropriate support and intervention, people with learning disorder can achieve success in school, at work, in relationships, and in the community.

"Learning Disorder" is an "umbrella" term describing a number of other, more specific learning disorders, such as dyslexia and dysgraphia. Find the signs and symptoms of each, plus strategies to help below.

Types of learning disorder

1 **Auditory Processing Disorder (APD)-** Also known as Central Auditory Processing Disorder, this is a condition that adversely affects how sound that travels unimpeded through the ear is processed or interpreted by the brain. Individuals with APD do not recognize subtle differences between sounds in words, even when the sounds are loud and clear enough to be heard. They can also find it difficult to tell where sounds are coming from, to make sense of the order of sounds, or to block out competing background noises.

2 **Dyscalculia-** A specific learning Disorder that affects a person's ability to understand numbers and learn math facts. Individuals with this type of LD may also have poor comprehension of math symbols, may struggle with memorizing and organizing numbers, have difficulty telling time, or have trouble with counting.

3 **Dysgraphia-** A specific learning Disorder that affects a person's handwriting ability and fine motor skills. Problems may include illegible handwriting, inconsistent spacing, poor spatial planning on paper, poor spelling, and difficulty composing writing as well as thinking and writing at the same time.

4 **Dyslexia-** A specific learning Disorder that affects reading and related language-based processing skills. The severity can differ in each individual but can affect reading fluency, decoding, reading comprehension, recall, writing, spelling, and sometimes speech and can exist along with other related disorders. Dyslexia is sometimes referred to as a Language-Based Learning Disorder.

5 **Language Processing Disorder-** A specific type of Auditory Processing Disorder (APD) in which there is difficulty attaching meaning to sound groups that form words, sentences and stories. While an APD affects the interpretation of all sounds coming into the brain, a Language Processing Disorder (LPD) relates only to the processing of language. LPD can affect expressive language and/or receptive language.

6 **Non-Verbal Learning Disabilities-** A disorders which is usually characterized by a significant discrepancy between higher verbal skills and weaker motor, visual-spatial and social skills. Typically, an individual with NLD (or NVLD) has trouble interpreting nonverbal cues like facial expressions or body language, and may have poor coordination.

7. **Visual Perceptual/Visual Motor Deficit-** A disorder that affects the understanding of information that a person sees, or the ability to draw

or copy. A characteristic seen in people with learning disabilities such as Dysgraphia or Non-verbal LD, it can result in missing subtle differences in shapes or printed letters, losing place frequently, struggles with cutting, holding pencil too tightly, or poor eye/hand coordination.

Facts about learning disorder

- More boys than girls are identified as learning Disorder the ratio is about 3:1, but recent studies suggest that as many girls as boys may have the condition but are not identified.
- Students with learning Disorder are usually identified by the time they reach late 8 and 9 grade.
- Intelligence quotient (I.Q) of identified learning Disorder students are typically in the 90 to 95 range.
- Students with learning Disorder tend to have deficits in short-term memory; you will find that short term memory scores are often below the 25th percentile.
- Phonological awareness deficits and poor phonics development are common among the learning Disorder population. (Phonemic awareness and phonics training will make learning Disorder students better readers and spellers).
- Students with learning Disorder are not as socially acceptable as other students when rated by their peers and teachers.
- As many as 50% of students with learning Disorder will drop out of school prior to high school graduation.
- Students with learning Disorder are more likely to encounter trouble with the law.
- Comparison to other parents, the parents of students with learning Disorder expect less of their children in both academics and behaviour.

Purpose of Study

Many studies have been no reported or compared the cognitive functioning of learning disorder children with the profile of those children who have learning difficulties but do not have any diagnosable –areas of difficulties, behavioural and management.

So many Indian children with learning disorder but without any diagnosable disorder or Disorder have remained at the periphery probably because of under reporting of this population in the clinical set-ups to seek help.

The present study has attempting to overcome some of their lacunas in the field of learning diagnosis of learning disorder of various groups of school going children and carries implications for future Cognition based remedial Educational training programmes and behaviour therapy.

Hypothesis

- Early diagnosis of learning disorder positively significant increases of success in educational difficulties

MATERIAL & METHODS:

Place of Study: This study was conducted at central India at Nagpur (Maharashtra)

Period of Study: May 2015 – November 2018 (Three years 6 Months)

INCLUSION CATEGORY

- School going children (boys and girls) (Age group 6 to 12 yrs.)
- School going children (boys and girls), who referred for educational difficulties and behaviour difficulties.

EXCLUSION

- School going children (boys and girls), from different schools (ICSE/ CBSE) from central India Nagpur.

SAMPLE SIZE: School going children (boys and girls) , who facing difficulties in reading , writing, spelling, and simple mathematical calculation from different ICSE, CBSE school in Nagpur (Maharashtra) were included in the study (N=156).

Study Design: Cross sectional study (Questionnaire Based Study)

Procedure of Data collection For collection of data from Nagpur city of Maharashtra was chosen. By keeping age and gender requirements in mind the subjects were selected more than the required then the test of Intelligence quotient (WISC-IV) and Woodcock Johnson WJ-3, the needed 156 subjects have been selected randomly from different schools which consists 89 Boys and 67 Girls.

First of all, checklist of trails was administered on the subjects to get their original viewpoint. The subjects were randomly selected from the different school going student boys and girls. Each subject took around 2-3hours to respond on the entire above tools. A period of three years 6 months was devoted for the data collection.

Measuring Instruments-

Wechsler Intelligence Scale for Children – Fourth Edition (WISC- IV)

Author: David Wechsler- The Weschler Intelligence Scale for Children is a gold standard used globally and extensively across India for assessing children's intellectual ability. The fourth edition of the WISC incorporates significant revisions which include updated norms, new subtests, and an increased emphasis on composite scores that reflect a child's performance in more discrete domains of cognitive functioning.

Woodcock Johnson III - Tests of Achievement -This Woodcock Johnson III - Authors: Richard Woodcock, Nancy Mather, Kevin McGrew- The WJ III ACH is designed to identify and describe an individual's current strengths and weaknesses. Scales: Reading, Oral Language, Mathematics, and Writing Language. Reliability the standard battery of the WJ III ACH for tests 1 through 12 ranged from .81 to .94. For the Extended battery, median coefficients ranged from .76 to .91.

Child Behavior Checklist for Ages 6–18 (CBCL/6-18; Achenbach and Rescorla 2001) The 113 items on this measure are rated as Not True (0), somewhat or sometimes True (1), or Very True or Often True (2). Validity and reliability are excellent, and extensive normative data are available for children ranging from 6 to 18.

STATISTICAL TECHNIQUES USED:

The obtained data will be statistically analyzed by applying descriptive (Average, percentile, mean, standard deviation, and paired t-test) of significance of mean differences in term of various variable. We will enter all data and further Statistical Analysis will be done with the help of IBM- SPSS-25 software.

ETHICAL STATEMENT

Ethical clearance was obtained from an ethical review board NKPSIMS and Lata Mangeshkar Hospital. The case file information was de-identified during data collection and was coded.

RESULTS

At Present result outcomes for the majority of individual with learning disorder they did not receive any appropriate help from school counsellor, psychologist, teachers and even parents nor accepted the child is suffering from learning disorder, in present study 56% students reported that they did not getting any help for remedial educational training, behaviour therapy, because the lack of teacher and parents awareness and untrained psychologist.

TABLE 1- DISTRIBUTION OF THE STUDY SUBJECTS CHILDREN WITH EDUCATIONAL DIFFICULTIES, BEHAVIOUR ISSUES ACCORDING TO THEIR SOCIODEMOGRAPHIC CHARACTERISTICS.

		Average		Percentage
Age	12-13 Years	Boys	18	20%
		Girls	14	21%
	14-15 Years	Boys	42	47%
		Girls	33	49%
	16-17 Years	Boys	22	25%
		Girls	17	25%
	17-18 Years	Boys	7	8%
		Girls	3	4%
Gender	Boys	89	57%	

	Girls	67	43%	
Social Economic Condition				
	Low	34	22%	
	Medium	101	65%	
	High	21	13%	

This study included two sets of participants: 1) school going children with learning difficulties with behaviour issues, and 2) parents counselling. The number of children selected at random who participated in this study were 180 however during the study twenty-four child was withdrawn by the parents leaving the sample size to be N-156 .The average age was 14 years (Table 1). Most of the participants were boys 89 (57%), and girls 67 (43%) Around 65% participants were middle class family.

TABLE 2- PAIRED SAMPLES STATISTICS CHILDREN WITH READING DIFFICULTIES IN BETWEEN LEARNING DISORDER CHILDREN WITH NON- LEARNING DISORDER CHILDREN.

Paired Samples Statistics						
			Mean	N	Std. Deviation	Std. Error Mean
Pair 1	LWI	LD	13.45	71	1.575	.187
		NON-LD	33.92	71	5.719	.679
Pair 2	Reading Fluency	LD	14.14	71	4.984	.591
		NON-LD	41.11	71	8.849	1.050
Pair 3	Passage Comprehension	LD	15.82	71	3.314	.393
		NON-LD	33.97	71	7.163	.850
Pair 4	Word Attack	LD	13.34	71	1.851	.220
		NON-LD	39.17	71	8.505	1.009
Pair 5	Reading Vocabulary	LD	13.30	71	3.987	.473
		NON-LD	34.52	71	5.017	.595

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	LWI – LD/NON-LD	-20.465	5.549	.659	-21.778	-19.151	-31.074	70	.000
Pair 2	Readin Fluency LD/NON-LD	-26.972	11.479	1.362	-29.689	-24.255	-19.798	70	.000
Pair 3	Passage Comprehension LD/NON-LD	-18.155	7.904	.938	-20.026	-16.284	-19.354	70	.000
Pair 4	Word Attack LD/NON-LD	-25.831	8.649	1.026	-27.878	-23.784	-25.166	70	.000
Pair 5	Readin Vocabulary - LD/NON-LD	-21.225	6.357	.754	-22.730	-19.721	-28.136	70	.000

LD- Learning Disorder, NON-LD- Non Learning Disorder

Reading Fluency measures the student's ability to quickly read simple sentences, decide if the statement is true, and then circle Yes or No. The study revealed that the mean value of reading fluency of learning disorder students was 14.14 and non-learning disorder students 41.11, the std. deviation was 4.98 and 4.98 and 't' value of the group was -19.798, which is significant at 0.05 level. The result of the study showed that the learning disorder students possess high issues in reading fluency than the non-learning disorder students. In particular, students with learning disorder struggle to develop reading fluency Bashir and hook 2009 and Chard et al.2009.

The initial Passage Comprehension items involve symbolic learning, or the ability to match a rebus (pictographic representation of a word) with an actual picture of the object. The study revealed that the mean value of Passage Comprehension of learning disorder students was 15.82 and non-learning disorder students 33.97, the std. deviation was 3.314 and 7.1633 and 't' value of the group was -19.354, which is significant at 0.05 level. The result of the study showed that the learning disorder students possess high issues in Passage Comprehension than the non-learning disorder students.

Word Attack measures skill in applying phonic and structural analysis skills to the pronunciation of unfamiliar printed words. The study revealed that the mean value of Word Attack of learning disorder students was 13.34 and non-learning disorder students 39.17, the std. deviation was 1.851 and 8.505 and 't' value of the group was -25.166, which is significant at 0.05 level. The result of the study showed that the learning disorder students possess high issues in Word Attack than the non-learning disorder students.

Reading Vocabulary measures skills in reading words and supplying appropriate meanings. This test includes three subtests: Synonyms, Antonyms, and Analogies. The study revealed that the mean value of Reading Vocabulary of learning disorder students was 13.30 and non-learning disorder students 34.52, the std. deviation was 3.987 and 5.017 and 't' value of the group was -28.136, which is significant at 0.05 level. The result of the study showed that the learning disorder students possess high issues in Reading Vocabulary than the non-learning disorder students. Begeny et al., 2006; Burns et al., 2004; Watson et al., 2009) examined the effects of a word- or phrasebased reading intervention for improving reading skills, including oral reading fluency. Lyon & Moats, 1997 found that dyslexia is a severe impairment in the ability to read, despite normal intelligence, normal opportunities to read, and an adequate home environment. Although the precise organic cause of dyslexia is unknown, it is generally thought that this problem results from difficulties with phonological awareness—a lack of understanding of the rules that govern the correspondence between specific sounds and certain letters that make up words .

Table 3- PAIRED SAMPLES STATISTICS CHILDREN WITH MATHEMATICS DIFFICULTIES IN BETWEEN LEARNING DISORDER CHILDREN WITH NON- LEARNING DISORDER CHILDREN.

Paired Samples Statistics						
			Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Calculation	LD	14.00	71	7.605	.902
		NON-LD	15.61	71	10.141	1.204
Pair 2	Math Fluency	LD	17.00	71	8.796	1.044
		NON-LD	21.20	71	12.553	1.490
Pair 3	Applied Problem	LD	16.46	71	8.453	1.003
		NON-LD	19.76	71	11.907	1.413
Pair 4	Quantitative Concepts	LD	15.79	71	8.943	1.061
		NON-LD	19.17	71	9.635	1.143

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Calculation - LD/NON-LD	-1.606	13.689	1.625	-4.846	1.634	-.988	70	.326
Pair 2	Math Fluency - LD/NON-LD	-4.197	17.987	2.135	-8.455	.060	-1.966	70	.053
Pair 3	Applied Problem - LD/NON-LD	-3.296	16.468	1.954	-7.194	.602	-1.686	70	.096
Pair 4	Quantitative Concepts - LD/NON-LD	-3.380	12.511	1.485	-6.342	-.419	-2.277	70	.026

Athematic is not only the science of numbers, but also is used in everyday life from calculating time and distance, to handling money and analysing data to make decision of life.

Calculation is a test of math achievement measuring the ability to perform mathematical computation The study revealed that the mean value of Calculation of learning disorder students was 14.00 and non-learning disorder students 15.61, the std. deviation was 7.605 and 10.141 and 't' value of the group was -.988, which is statistically non-significant at >0.05 level. The result of the study showed that the learning disorder students and non-learning disorder students both are possess high issues in calculation. Students with learning disabilities may have problems in both math calculations and math reasoning (USOE, 1977). These students often have a number of problems in mathematical thinking (Hunt & Marshall, 2005).

Math Fluency measures the ability to solve simple addition, subtraction, and multiplication facts quickly. The study revealed that the mean value of Math Fluency of learning disorder students was 17.00 and non-learning disorder students 21.20, the std. deviation was 8.796 and 12.553 and 't' value of the group was -1.966, which is significant at 0.05 level. The result of the study showed that the learning disorder students possess high issues in Math Fluency than the non-learning disorder students. Kosc was one of the first researchers to make a large scale test on mathematical disorders (Gross-Tsur et al., 2000). He came up with the result that 3-6% of the tested children suffered from a mathematical learning disorder. Later performed studies by other researchers show around the same percentage. Still others point to other parameters like large groups, disturbing environments, bad teaching and mathematical anxiety.

Applied Problems requires the person to analyse and solve math problems. To solve the problems, the student must listen to the problem, recognize the procedure to be followed, and then perform relatively simple calculations. The study revealed that the mean value of Applied Problems of learning disorder students was 16.46 and non-learning disorder students 19.76, the std. deviation was 8.453 and 11.907 and 't' value of the group was -1.686, which is significant at 0.05 level. The result of the study showed that the learning disorder students possess high issues in Applied Problems than the non-learning disorder students. According to Cox (1975) differentiates between systematic computation errors and errors that are random or careless mistakes. Robinson, Manchetti, and Torgeson propose that for some children, math difficulties may be due to either deficits in phonological processing of the features of spoken numbers or failure to grasp meaningful concepts.

Quantitative Concepts measures knowledge of mathematical concepts, symbols, and vocabulary. The study revealed that the mean value of Quantitative Concepts of learning disorder students was 15.79 and non-learning disorder students 19.17, the std. deviation was 8.943 and 9.635 and 't' value of the group was -2.277, which is significant at 0.05 level. The result of the study showed both group are facing issues but learning disorder students possess high issues in Quantitative Concepts than the non-learning disorder students. According to Lerner (2003), every student with mathematical difficulties is unique; not all children exhibit the same deficiency or impairment. According to Shalev, Gross-Tsur et al. (2000) there are about 3–6% schoolchildren with dyscalculia. The range was interpreted as a consequence of different definitions of developmental dyscalculia. Gunnar Sjöberg (2006) is of the opinion that the results pointing towards dyscalculia as an indication of difficulties in mathematics are inconclusive, rather the pupils have not put enough effort and time into their work with math, and her study showing that 6% of compulsory school pupils suffer from dyscalculia are incorrectly interpreted. According to Garnett (1998), some students with LD are particularly hampered by the language aspects of math, resulting in confusion about terminology, difficulty following verbal explanations, and weak verbal skills for monitoring the steps of complex calculations.

TABLE 4- PAIRED SAMPLES STATISTICS CHILDREN WITH WRITTEN LANGUAGE DIFFICULTIES IN BETWEEN LEARNING DISORDER CHILDREN WITH NON- LEARNING DISORDER CHILDREN.

Paired Samples Statistics						
			Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Spelling	LD	12.83	71	4.067	.483
		NON-LD	19.27	71	15.471	1.836
Pair 2	Writing Fluency	LD	11.94	71	2.574	.305
		NON-LD	19.18	71	13.043	1.548
Pair 3	Writing Sample	LD	12.68	71	2.489	.295
		NON-LD	20.32	71	13.966	1.657
Pair 4	Editing	LD	15.89	71	5.533	.657
		NON-LD	22.65	71	13.501	1.602
Pair 5	Spelling of Sounds	LD	16.03	71	6.599	.783
		NON-LD	19.30	71	15.226	1.807
Pair 6	Punctuation and Capitaliza	LD	14.66	71	3.664	.435
		NON-LD	21.61	71	13.548	1.608

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Spelling - LD/NON-LD	-6.437	16.801	1.994	-10.413	-2.460	-3.228	70	.002
Pair 2	Writing Fluency - LD/NON-LD	-7.239	12.350	1.466	-10.163	-4.316	-4.939	70	.000
Pair 3	Writing Sample - LD/NON-LD	-7.648	14.317	1.699	-11.037	-4.259	-4.501	70	.000
Pair 4	Editing - LD/NON-LD	-6.761	13.937	1.654	-10.059	-3.462	-4.087	70	.000
Pair 5	Spelling of Sounds - LD/NON-LD	-3.268	15.549	1.845	-6.948	.413	-1.771	70	.081
Pair 6	Punctuation and Capitalization - LD/NON-LD	-6.944	13.274	1.575	-10.086	-3.802	-4.408	70	.000

Spelling measures the ability to write orally presented words correctly. The initial items measure prewriting skills such as drawing lines and tracing letters. The study revealed that the mean value of Spelling of learning disorder students was 12.83 and non-learning disorder students 19.27, the std. deviation was 4.067 and 15.471 and 't' value of the group was -3.228, which is significant at 0.05 level. The result of the study showed that the learning disorder students possess high issues in spelling than the non-learning disorder students. According to Nag & Snowling, 2013 said there is a strong link between a student's reading and spelling, because sound (phoneme)-symbol (grapheme) connections are needed for both.

Writing Fluency measures skill in formulating and writing simple sentences quickly. The study revealed that the mean value of Writing Fluency of learning disorder students was 11.94 and non-learning disorder students 19.18, the std. deviation was 2.574 and 13.043 and 't' value of the group was -4.316, which is significant at 0.05 level. The result of the study showed that the learning disorder students possess high issues in Writing Fluency than the non-learning disorder students. Many individuals with LD exhibit deficits in written language (Hallahan, Kauffman, & Lloyd, 1999), and smith et al. ,2004 said Learning disabilities in the area of written expression are beginning to receive more recognition as a serious problem. Writing is a highly complex method of expression involving the integration of eye–hand, linguistic, and conceptual abilities.

Writing Samples is a measure of skills in writing a response to a variety of demands. The study revealed that the mean value of Writing Samples of learning disorder students was 12.68 and non-learning disorder students 20.32, the std. deviation was 2.489 and 13.966 and 't' value of the group was -4.501, which is significant at 0.05 level. The result of the study showed that the learning disorder students possess high issues in Writing Samples than the non-learning disorder students. As per Hooper et al. (2011) note, there are many brain systems and neuropsychological factors that influence written expression competency. While some of these are related to literacy can lead to both writing and reading learning disorder (LD) when impaired, other causes of writing LD, such as visual-motor integration skills and executive functions (Fenwick et al., 2015), require additional attention during assessment and instruction.

Editing measures skills in identifying and correcting errors in a written passage. The study revealed that the mean value of Editing of learning disorder students was 15.89 and non-learning disorder students 22.65, the std. deviation was 5.533 and 13.501 and 't' value of the group was -3.462, which is significant at 0.05 level. The result of the study showed that the learning disorder students possess high issues in Editing than the non-learning disorder students.

Spelling of Sounds is a measure of spelling ability, particularly phonological and orthographical coding skills. The study revealed that the mean value of Spelling of Sounds of learning disorder students was 16.03 and non-learning disorder students 19.30, the std. deviation was 6.599 and 15.226 and 't' value of the group was -1.771, which is significant at 0.05 level. The result of the study showed that the learning disorder students possess high issues in Spelling of Sounds than the non-learning disorder students.

Punctuation and Capitalization is a measure of certain written English formatting skills. The study revealed that the mean value of Spelling of Sounds of learning disorder students was 14.66 and non-learning disorder students 21.61, the std. deviation was 3.664 and 13.548 and 't' value of the group was -3.802, which is significant at 0.05 level. The result of the study showed that the learning disorder students possess high issues in Spelling of Sounds than the non-learning disorder students.

Making spelling, spelling of sounds, Writing, editing, punctuation and capitalization are the most difficult academic areas for students with a learning disorder (LD). My primary purpose in investigating this topic was to discover effective writing interventions that improve students' writing ability so that I can implement them in my classroom. Written language disorders, as with spoken language disorders, can involve any of the five language domains (i.e., phonology, morphology, syntax, semantics, and pragmatics). Problems can occur in the awareness, comprehension, and production of language at the sound, syllable, word, sentence, and discourse levels, as indicated in the table below (Nelson, 2014b; Nelson, Plante, Helm-Estabrooks, & Hotz, 2015).

TABLE 5- PAIRED SAMPLES STATISTICS CHILDREN WITH ORAL LANGUAGE DIFFICULTIES IN BETWEEN LEARNING DISORDER CHILDREN WITH NON- LEARNING DISORDER CHILDREN.

Paired Samples Statistics						
			Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Story Recall	LD	25.18	71	10.047	1.192
		NON-LD	28.49	71	10.422	1.237
Pair 2	Understand Direction	LD	25.03	71	11.551	1.371
		NON-LD	27.20	71	9.673	1.148
Pair 3	Story Delayed	LD	23.51	71	10.567	1.254
		NON-LD	22.21	71	10.466	1.242
Pair 4	Picture Vocabulary	LD	30.28	71	8.609	1.022
		NON-LD	31.32	71	4.843	.575
Pair 5	Oral	LD	27.96	71	11.014	1.307
		NON-LD	30.44	71	7.276	.863
Pair 6	Sound Awareness	LD	21.63	71	10.974	1.302
		NON-LD	35.03	71	5.794	.688

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Story Recall – LD/NON-LD	-3.310	8.704	1.033	-5.370	-1.250	-3.204	70	.002
Pair 2	Understand Direction - LD/NON-LD	-2.169	14.599	1.733	-5.625	1.287	-1.252	70	.215
Pair 3	Story Delayed - LD/NON-LD	1.296	17.444	2.070	-2.833	5.425	.626	70	.533
Pair 4	Picture Vocabulary - LD/NON-LD	-1.042	10.114	1.200	-3.436	1.352	-.868	70	.388
Pair 5	O Oral Comprehension - LD/NN-LD	-2.479	9.663	1.147	-4.766	-.192	-2.162	70	.034
Pair 6	Sound Awareness - LD/NON-LD	-13.394	12.536	1.488	-16.362	-10.427	-9.003	70	.000

Story Recall measures aspects of oral language including language development and meaningful memory. The study revealed that the mean value of Story Recall of learning disorder students was 25.18 and non-learning disorder students 28.49, the std. deviation was 1.192 and 1.237 and 't' value of the group was -3.204, which is significant at 0.05 level. The result of the study showed that the learning disorder students possess high issues in Story Recall than the non-learning disorder students.

Understanding Directions is an oral language measure. The study revealed that the mean value of Understanding Directions of learning disorder students was 25.03 and non-learning disorder students 27.20, the std. deviation was 11.551 and 9.673 and 't' value of the group was -

1.252, which is statistically non-significant at 0.05 level. The result of the study showed that the learning disorder students possess high issues in Understanding Directions than the non-learning disorder students.

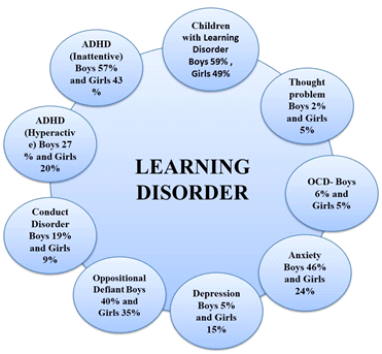
Picture Vocabulary measures oral language development and lexical (word) knowledge. The study revealed that the mean value of Picture Vocabulary of learning disorder students was 30.28 and non-learning disorder students 31.32, the std. deviation was 8.609 and 4.843 and 't' value of the group was --.868, which is statistically non-significant at 0.05 level. The result of the study showed that the learning disorder students possess high issues in Picture Vocabulary than the non-learning disorder students.

Oral Comprehension is a test of oral language measuring the ability to comprehend a short audio-recorded passage and then supply the missing word using syntactic and semantic clues. The study revealed that the mean value of Oral Comprehension of learning disorder students was 27.96 and non-learning disorder students 30.44, the std. deviation was 11.014 and 7.2162 and 't' value of the group was -2.162, which is significant at 0.05 level. The result of the study showed that the learning disorder students possess high issues in Oral Comprehension than the non-learning disorder students. Oral language impairments also place children at risk for difficulties in reading comprehension. Because oral language is the foundation for written language, a limited vocabulary and/or problems with morphology and syntax can cause difficulties in deriving meaning from written text.

Sound Awareness is a measure of phonological awareness. The study revealed that the mean value of Sound Awareness of learning disorder students was 21.63 and non-learning disorder students 35.03, the std. deviation was 10.974 and 5.794 and 't' value of the group was -9.003, which is significant at 0.05 level. The result of the study showed that the learning disorder students possess high issues in Sound Awareness than the non-learning disorder students.

Study of children diagnosed with Learning disorder with Average intelligence, comorbidity in ADHD (Inattention) + LD around 57% boys and 43% girls, comorbidity in ADHD (Hyperactive) + LD around 27% boys and 20% girls, comorbidity in Conduct disorder + LD around 19% boys and 9% girls, comorbidity in oppositional defiant + LD around 40% boys and 35% girls, comorbidity in depression + LD around 5% boys and 15% girls, comorbidity in anxiety + LD around 46% boys and 24% girls, comorbidity in OCD + LD around 6% boys and 5% girls, comorbidity in though disorder + LD around 2% boys and 5% girls. See figure no.1.

FIGURE 1- COMORBIDITY IN CHILDREN WITH LEARNING DISORDER WITH BEHAVIOUR DIFFICULTIES.



In a current study of children diagnosed with Non Learning disorder with Average intelligence, comorbidity in ADHD (Inattention) + NON-LD around 37% boys and 39% girls , comorbidity in ADHD (Hyperactive) + NON-LD around 22% boys and 12% girls, comorbidity in Conduct disorder + NON-LD around 6% boys and 3% girls, comorbidity in oppositional defiant + NON-LD around 31% boys and 24% girls, comorbidity in depression + NON-LD around 2% boys and 4% girls, comorbidity in anxiety + NON-LD around 36% boys and 33% girls, comorbidity in OCD + NON-LD around 1% boys and 1% girls, comorbidity in though disorder + NON-LD around 1% boys and 1% girls. See figure no.2.

FIGURE 2- COMORBIDITY IN CHILDREN WITH NON-LEARNING DISORDER WITH BEHAVIOUR DIFFICULTIES.

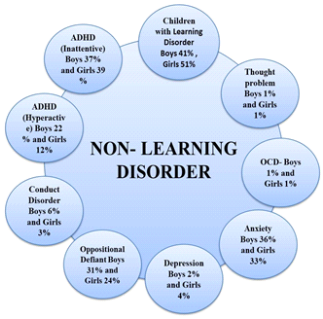


TABLE NO.6 –PAIRED SAMPLES STATISTICS STUDIED CHILDREN REGARDING THEIR EMOTIONAL AND BEHAVIOUR DIFFICULTIES AS REPORTED BY THEIR PARENTS PRE-TEST BEFORE THERAPY SESSION AND POST -TEST AFTER THERAPY SESSION

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre Test Before Therapy Session	25.43	156	9.479	.759
	Post Test After Therapy Session	13.71	156	1.591	.127

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre Test Before Therapy Session - Post Test After Therapy Session	11.724	9.757	.781	10.181	13.268	15.00	155	.000

Current study shows that psychotherapy, cognitive based remedial education training , behavior modification(shaping, reinforcement), parenting counselling and guidance, physical activities like -dance, music therapy, gym ball, summing and other physical exercise influence behavior, decreasing self-stimulatory behavior such as inattention, hyperactivity , Conduct disorder ,oppositional defiant ,depression , anxiety, OCD ,though disorder . Study showed statistically significant differences in all behavior domain areas at the level of <0.05. (See table no.6).Although not all children with LD have social–emotional problems, they do run a greater risk than their nondisabled peers of having these types of problems. In 2003 Heward study shows that many children with LD exhibit no behavioral problems at all but other researchers have reported psychological problems including feelings of inadequacy, anxiety, frustration, and anger (Bender, 2002).

Result noted that learning disorder children group was rated significantly lower than the non-learning disorder children on the Social Competence Subscale of the child behaviour checklist. Result indicates that learning disorder children are rated as having more social problems than are non-learning disorder children. This can be due to the fact that children with learning disorder are often refused or not accepted by peers, parents, or teachers so in turn these children are not able to develop the proper social skills. On behaviour problem subscales for which hypotheses were made-- inattention, hyperactivity, conduct disorder, oppositional defiant, depression,

anxiety, OCD, though disorder --the learning disorder children scored significantly higher than the non-learning disorder children. Present study shows that the children with learning disorder were indicating that they are having more issues in educational understanding and behavioural/emotional problems.

DISCUSSION

Early intervention suggests that schools, teacher, parents, special educators should not wait for difficulties in students to reinforce, but they should try to find students "at risk" as early as possible. In this study Cognitive based remedial education training ,reinforcement technique modifying student behaviour had positive effect .In reinforcement student can be reinforced for progress toward effect involved and achievement of behavioural goal.

In this present study seen that Intrinsic reinforcement comes from within the students and relate to a particular task, such things as curiosity, interest, pride, the satisfaction of completing a task, and the avoidance of pain or failure are all internal reinforces of positive behaviour, school teachers, parents, and special educators create or develop such kind of environment were student can positively develop self. On other hand Extrinsic reinforces outside of the person or task and can be used by school teachers, parents, and special educators help such students learn maintain or increase positive behaviours. Extrinsic reinforces are needed when the behaviours to be learned are difficult , stress , frustrating events , time consuming, or uninteresting things or tasks.

The main goal of schools, teacher, parents, and special educators is to enable students with learning disorder to be educated and to have benefit from it. Cognitive based remedial education training shows us for specific changes in the brains of children receiving this sort of treatment, and how that is coupled with the improvement which have in reading and language ability. Cognitive based remedial education training and behaviour therapy becomes an additional tool to understand how educational remediation programs alter children's abilities, as they must do, by changing the way their brains process information and behaviour adjustment. Schools teachers, parents, and special educators approaches have a significant impact on the achievement of students with learning disorder which is well defined, clear, and carefully designed in relation to the area in which instruction is required (e.g., reading, writing, mathematics).

Limitation of the research

- Limited sample size
- Areas based research

Future research is required to further delineate and characterize the prevalence, frequency, and psychosocial correlates related to the learning disorder and behaviour difficulties.

Future prospect study should be developed in cooperating large sample size and mass study with appropriate methodology to capture the frequency and prevalence of learning disorder, behaviour difficulties, and proper management.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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