A Comparison on Academic Achievement of Children Who Experience Learning Differences of Study Group and Reference Group

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Abstract

Students who know how to study typically attain superior grades compared to who are intellectually gifted. The class's brightest pupils are also possible among its worst performers. These are students who far too frequently struggle with undiagnosed and untreated learning problems. Every aspect of the curriculum is impacted by a learning difference, especially for those who have not received the most beneficial instruction in study techniques and effective learning strategies. The biggest justification for vigorous intervention during the initial stages of schooling, it's imperative to steer clear of early failure. Students who have failed repeatedly will inevitably have low self-esteem. Self-esteem is tough to regain after it has been damaged. According to Cruickshank, a student experiencing challenges related to learning needs every kind of stable support conceivable to help him or she grow a robust ego. Researchers and educators are using several teaching-learning methodologies to give this help. Although several intervention techniques were used, such as homework, small interactive groups, guided response/questioning of students, and technology (structured presentation medium), which included instructional components related to sequencing, drill-repetition-practice-feedback, information segmentation, controlling task difficulty (e.g., scaffolding), modeling problem-solving steps, providing cues to prompt strategies to use, supplementing teacher instruction (e.g., scaffolding), The outcomes confirmed the widespread effectiveness of direct instruction models and cognitive strategy approaches in addressing academic challenges. The results, on the other hand, showed that a mixed model is an instructional heuristic with the biggest effect size.

Key Words: Academic Achievement, Children, Learning Differences, Experimental And Non Study Group.

Introduction :

In the initial years of a child's development experiences can lasting impact on results throughout an individual's entire life, making early schooling an important stage of growth and development. For all children, early education offers a chance to set the groundwork for engagement and learning throughout life while averting potential developmental delays and disabilities. It is crucial to guarantee that early education for disabled children is of the highest quality to unleash their complete potential.. A Differences is characterized as any physiological or psychological state that presents challenges in performing tasks typically achievable by others. These conditions significantly hinder an individual's ability to meet established standards for specific activities. According to data from the 2011 Census, the largest proportion of disabled individuals belong to the "movement" category, After experiencing hearing and visual impairments, respectively. A significant portion of disable people are classified within the "any other" category, encompassing individuals with learning differences as well. People experiencing cognitive challenges are whose IQs are average or above average but who function academically on par with students whose IQs are below normal. Children facing cognitive difficulties may struggle in one or academic subjects, such as reading, math, spelling, and writing. As seen by newspaper articles, magazine articles, and television specials on subjects like "Does your child have a learning Differences?," learning impairments have been the focus of public concern. More so than any other part of special education, learning differences appear to breed misunderstanding and contention. On such fundamental concerns as "what are learning differences?" There exists a considerable amount of confusion and contention, extending beyond the realm of the general populace to encompass experts, scholars, and caregivers alike.

Evidence suggests that learning difficulties encompass diverse subtypes, indicating that learning differences do not constitute a singular syndrome. During the last ten years, there has been significant progress in

understanding the terminology, classifications, and underlying causes. However, Teaching those Students with Reading Difficulties and Disabilities should have the following subtypes of learning-

- Reading Differences (Dyslexia)
- Writing Differences (Dysgraphia)
- Mathematics Differences (Dyscalculia)
- Nonverbal learning Differences (Visual spatial-social Difficulties)

Every individual possesses an inherent necessity for education. It is through the process of education that one can evolve and flourish in every aspect of life, including social, economic, intellectual, physical, and psychic. Only an educated populace can spur a country's development. Every nation works arduously to educate its entire people. To educate all of its residents, the Universalization of Elementary Education (1950) was established in India. During the last sixty years, there has been considerable growth within this field. Does this educational system provide equal empowerment to all individuals, irrespective of their abilities or disabilities? It is a contentious topic. Others object that particular groups, such as people with disabilities, are overlooked when others claim that each mist receive education to enable them to stand on their own two feet or earn a job. The objective of achieving "universal education" remains a distant aspiration, particularly for individuals facing learning differences, who are even farther from reaching this goal.

With a population of over a billion, a nation like India frequently experiences issues like unemployment, illiteracy, and poverty. Hence, raising a normal child in such a large population and extreme poverty is challenging. Hence, raising special-needs children is incredibly challenging. Many kids exhibit typical behaviour yet perform poorly academically compared to their peers. They possess learning differences (LD), a condition that is not as widely recognized, covering a spectrum of challenges. with speaking, listening, reading, writing, and math. Such kids frequently endure humiliating public displays. The reality is that LD exists and is a barrier to a country's growth. Why is this happening, and how does it impact development? Despite having average intelligence, a person with LD might not

make a significant contribution to the advancement of civilization. Even if a person is smart or smarter than average and doe npt have any kind of problem with their eyesight or hearing, they may still find it hard to keep up with their peers their age when it comes to learning and doing day-to-day things.

The crucial fact that is overlooked is the reality that these individuals do possess average intelligence. This indicates that they possess the ability to make meaningful contributions of a country's advancement. Their poor academic performance, which often causes a lack of confidence, is the main thing holding them back. Most survivors were able to live up to their fullest potential. A few examples include George Washington, Winston Churchill, Tom Cruise, Thomas Edison, Albert Einstein, and Thomas Edison. The biographies of these notable individuals show that, with the right assistance and scientific methods , ppeople experiencing cognitive limitations may succeed in life to the fullest extent possible. This help should be given from an early age, starting at home and in school. The best people to help these kids at this point are their teachers and parents. When a children with learning the problem does well in school, it will boost his or her self-esteem and confidence. This will help the child grow as a person and help the country grow as a whole.

1.1 Learning Differences Concept

Various learning challenges fall under the umbrella term "learning Differences." These disabilities do not stem from an absence of intelligence or motivation. Typically, children with learning differences have IQ levels within the average or above-average range, indicating comparable intelligence to their peers. Rather, their brains are wired uniquely, leading to distinct ways of receiving and processing information. Consequently, individuals with learning differences may encounter difficulties in acquiring and applying new knowledge and skills. Predominantly, these challenges manifest in areas such as engaging in literary activities such as perusing texts and composing written works., Mmathematics Skills, critical thinking, auditory comprehension, and verbal communication.

According to Samuel Kirk (1962). “The term "learning Differences" originated in 1962 during a meeting in Chicago attended by concerned parents and educators seeking to unify various parent

organizations working in different communities. Samuel Kirk (1962) introduced the term as a solution to the confusion caused by the diverse array of terms used to describe individuals of average intelligence facing learning challenges. The term gained rapid acceptance and is now represented by ACLD".

Aaccording to Head's 1926 conclusion. "There remains significant debate regarding the meaning of "learning Differences," as it wasn't until later that it was formally recognized as distinct from handicapping conditions (Friedrich, Fuller & Davis, 1984). Although the term "learning Differences" didn't emerge until 1962, emerge in the field trace back to at least the early 1800s. Concerns about brain dysfunction and its association with reported abnormalities in spoken language have been documented since Gall's work in 1802. According to the literature, language disorders are rooted in integrated functions higher up on the neural hierarchy than motor or sensory abilities. Therefore, they cannot be simply categorized as disorders of the motor, visual, or auditory systems. Additionally, language disorders do not necessarily entail a loss of other abilities, such as mechanical aptitude.

The narrative surrounding learning differences has unfolded through three separate phases, each characterized by its own specific duration. These phases include the foundation phase, the transitional phase, and the recognition phase. The foundation phase, covering the span from 1802 to 1946, witnessed extensive research into challenges related to spoken language, written language, as well as perceptual and motor processes. The transitional phase, extending from 1946 to 1964, marked a shift in focus towards addressing the needs of students who exhibited apparent normal learning potential but encountered difficulties in conventional educational settings. This period saw the establishment of specialized classes tailored for those with conditions such as brain injuries, dyslexia, and aphasia. Subsequently, the recognition phase, which commenced in 1965, witnessed rapid expansion within the field of learning differences, albeit sometimes in a sporadic manner. Presently, it stands as the largest recognized subfield within the realm of educational provisions for individuals with exceptional needs.

This evolution in the field of learning differences has been significantly shaped by three key factors unfolding in a clear chronological sequence: the scientific

community's exploration of abnormal and unusual behaviour, the ongoing refinement of teaching methodologies, and the collective concern of parents, lawmakers, and educators in providing tailored initiatives aimed at students who may encounter difficulties or obstacles along their educational path.

While the phrase "learning Differences" gained immediate acceptance, determining its precise definition posed a challenge. Throughout time, numerous interpretations have emerged and been applied, yet each has faced criticism for notable limitations.

A learning difference is defined by a hindrance, disorder, or lag in the progression of Oratory, communication, literacy, composition, mathematics or other academic subjects due to psychological impairments possibly stemming from cerebral dysfunction and/or emotional or behavioral disruptions. It is distinguished from learning differences, sensory deprivation, or cultural or educational factors.

In Reynolds & Janzen (2002), “It is noted that the definition of learning differences varies depending on the context. The widely utilized U.S. Government's federal definition from 1977 delineates 'Specific Learning Differences' as a condition affecting one or more fundamental psychological processes crucial for comprehending or utilizing spoken or written language. This condition can result in challenges with listening, thinking, speaking, reading, writing, spelling, or performing mathematical calculations. It encompasses a range of conditions such as dyslexia, developmental aphasia, brain damage, mild brain dysfunction, and perceptual disabilities. However, it specifically excludes individuals whose learning difficulties primarily stem from factors such as mental retardation, emotional disturbance, physical, hearing, or motor impairments, as well as environmental, cultural, or economic disadvantages (Reynolds & Janzen, 2002).”

1.2 Academic Achievement

Academic achievement, also referred to as academic performance, encompasses the level of attainment of educational goals by individuals, be they students, instructors, or educational institutions, over either short or long periods. This achievement is typically quantified by metrics such as cumulative GPA and the successful completion of academic degrees, such as a bachelor's degree. Evaluation of academic achievement commonly involves methods such as

examinations or ongoing assessments; however, consensus regarding the optimal evaluation method or the relative importance of different components—such as procedural knowledge (skills) versus declarative knowledge (facts)—remains elusive. Factors such as test anxiety, environmental conditions, motivation, and emotional well-being are recognized as influential in academic achievement models, given the conflicting information concerning which particular factors accurately predict academic performance. Notably, contemporary educational systems allocate funding to schools based on the academic performance of their students, with higher-performing schools receiving greater financial support. It's observed that children facing learning difficulties often experience challenges in achieving satisfactory or exceptional academic outcomes (Agomoh & Kanu, 2011).

1.3 Statement of The Problem

Teachers, parents, educational authorities, and governmental organizations have expressed worry throughout the years about the rising rate of low academic achievement among schoolchildren. Additionally, individuals who have profited from schooling no longer perform as expected. Less than 30% of students who attempted In the last ten years, examinations have indicated progress in successfully enacting with a credit pass or higher in mathematics and English language, according to data from the West African Examination Council (WAEC) and National Examination Council (NECO) (Todaro & Miles, 2012). Education stakeholders are now concerned about the issue of kids' poor academic performance. Despite the challenging economic climate, parents spend their hard-earned money to guarantee that their children obtain a quality education. To assure greater performance, the government has trained and hired quality instructors and upgraded curricula, but to no effect. The government's initiative to bolster Western education involves comprehensive teacher training programs aimed at enhancing educators' skills and knowledge. Supplementary initiatives have been implemented to support instructors in staying abreast of advancements and refining their teaching abilities, with the overarching goal of enhancing student academic outcomes. Despite concerted efforts in these domains, the persistent problem of academic underachievement

persists. Consequently, the researcher seeks to empower youths through education and contribute to the educational system's efforts in tackling low academic achievement.

1.4 Rationale of Study

The academic performance and adjustment issues that children face in several areas are of great concern to teachers, parents, and researchers. These kids spend a third of their walking time doing school-related things, partly because academics is valued highly by both society and parents. Hence, when a student faces challenges, it inevitably leads to heightened concerns for both parents and educators, ultimately affecting the student's academic persona.. When children with ordinary or above average intellect do not perform to expectations, efforts are made to determine the root reasons of the problem. They are getting more and more interested in learning why kids struggle. What is the cause? Which particular impairment do they have? Why are some children impulsive, energetic, and sometimes hostile in their homes and schools, making it difficult for them to focus and concentrate on a task? Learning disorders that impair the brain's capacity to receive, process, analyse, or store information are one of the main causes. These issues can make it challenging for a learner to pick up new material as rapidly as someone without learning impairments. In educational institutions all throughout the world, learning differences are increasingly becoming a serious problem. It is actual and a difficult roadblock to a country's progress. With ordinary or above average intelligence, 10-12% of the population learns differently from their peers due to a learning problem. Children in India who attend school make up a sizeable percentage of the population. Students with learning differences repeatedly struggle to complete tasks that appear simple to their peers. These kids lose confidence in their abilities more and more with each setback. This uncertainty can occasionally cause a developing sense of powerlessness or despondency. Children that don't succeed are frequently passed over by classmates. They could grow more distant from their friends or even their family. Due to the overall lack of knowledge about this difficult invisible condition, there is little information available about learning difficulties that affect Indian children. There is a lot of confusion over its meaning.

The research holds importance due to its raises awareness of learning difficulties in elementary school-aged youngsters. The results of the current study will aid in understanding how gender and educational differences in children's learning difficulties vary.

1. Review of Literature

In Kantawala M.N (2022) conducted an. "Investigation into Reading Attitudes of High School Students of Karia District" (PH. D in Education 1994) arrived at the determination that grade affected readers' attitudes toward reading According to its scale, there is no evidence of a substantial connection between reading habits and attitudes and cultural contexts, sex differences, age groups, or birth order. Those from smaller homes exhibited a brighter outlook on reading than students from larger families."

By Baker Y. (2020), "Social Competencies among Children with Dyslexia and Non-Vocal Learning differences: A Comparative Study," S.N.D.T. Women's University in Mumbai has a centre for social education. The youngsters with dyslexia and other non-verbal learning differences are highlighted in this study in relation to social skills. The current study is descriptive in nature, and its methodology is survey-based. Used was the purposeful sampling technique. 22 mothers of kids with dyslexia and nonverbal learning difficulties made up the entire sample. The social competency tool was provided to every mother of a kid. Most of the time, participants filled out the forms in front of the researcher. Three children, all between the ages of 11 and 13, who were enrolled in classes 6 to 8, one child with dyslexia, two children with non-verbal learning differences, and one child with dyslexia made up the sample."

In Singh and Srivastava (2020) study performed, "A diagnostic study of standard viii students' prevalent writing faults, their correction, and prevention The study found that one of the main causes of English errors is a lack of corrective and preventive approaches. Verbal inflection mistakes were common in standards VI, VII, and VIII, the study found."

K.A. Krishnalitha, (2020), "Error Analysis and Remedial Teaching Methods in Teaching in Developing Countries" Although there are many languages spoken around the world, English continues to have a dominant position. English is a versatile language that is needed in the current information technology age. For communication with the

outside world, English is a doorway to the globe. The English language can be used to communicate with the outside world. Consequently, it is referred to be an international language. Since English is a business language and an official language throughout the world and the nation, it must be thoroughly understood. English is now spoken in practically every state in India. In many schools, English is taught as a second or third language, and if it is only used sometimes for international business and travel, it will be seen as a faraway language."

A Cognitive Deficit Framework used to diagnose Learning Differences was examined by Callinan, Theiler, and Cunningham in 2015. Additionally, they looked at whether verbal memory deficiencies could account for the commonalities between learning challenged and low-achieving children. Cognitive processing exams were given to a sample of 172 students to determine whether test results could accurately classify them into discrepancy-defined groups using discriminant function analysis. Results showed that only tests of phonological processing, quick naming, and verbal memory could accurately classify 77% to 82% of pupils into LD, low achievement, and regular achievement groups.

Results showed that the short form of the scale was just as good at predicting reading achievement as the original measure using a sample of 232 students with and without learning difficulties. According to an analysis of the short scale's content, the best item synthesis contained questions about advanced reading abilities, motivation, strategy utilisation, and cognition. In order to analyse the psychometric suitability of scales used for the assessment and identification of learning differences and co-morbid conditions, the study recommended using various psychometric criteria.

Utilizing the Rasch model to evaluate the consistency and accuracy of item scores, Sideridis and Padeliadu (2013) introduced a rapid evaluation tool for identifying learning challenges. Their research aimed to simplify the development of diagnostic tools for individuals facing learning difficulties alongside conditions such as attention-deficit/hyperactivity disorder. In the initial phase, 1,108 students, encompassing those both with and without a learning Differences diagnosis, participated. Following this, only a subset of items designed to assess reading

abilities from the original pool was retained in the final scale, crafted using contemporary theoretical frameworks like the Rasch model. The effectiveness of this refined selection of items was subsequently assessed in Study 2 for its ability to predict and meet predetermined validity criteria, utilizing a dependable external reading assessment battery.

The use of inquiry-based instruction for teaching science to kids with learning differences was studied by Aydeniz, Cihak, Graham, and Retinger in 2012. The study's goal was to look at how scientific training for five primary kids with learning difficulties fared when it was inquiry-based (LD). Inquiry-based activities addressing conceptual and application-based learning of parallel circuits, conductors and insulators, electricity and magnetism, and simple electric circuits were conducted with the students. A test created by the researchers was used to gauge students' conceptual grasp of these ideas. The scientific attitudes inventory was used to gauge the pupils' attitudes toward science (SAI- II). The outcomes showed that every student understood the science material taught during the intervention and that they all continued to perform well six weeks later. Students also developed more positive views regarding science. The findings additionally demonstrated that through modifications in curriculum, teaching methods, and assessment, children facing challenges in learning can effectively engage with science education.

2. Research Methodology

To obtain relevant data for the ongoing investigation, a combination of survey and experimental methods was employed. In identifying primary-aged children with learning differences, the survey approach was utilized, while the experimental method (MSS) proved most effective in evaluating the efficacy of the developed Multi-Sensory Strategy. The research design chosen for the study was the before-test-post-test non-equivalent design. The study's sample population comprised elementary school pupils from the Meerut District. Through administering the DTLD, Intelligence Test, Achievement Motivation Scale, and Learning Problem Checklist to the entire sample, 66 children with learning differences were identified for participation in the experiment. These identified people were then divided into Study and Reference Group. The Reference Group received instruction

through the conventional activity-oriented method, while the Study Group received instruction utilizing the developed Multi-Sensory Strategy (MSS) (CAOM). Both groups underwent standardized academic achievement assessments as pre-tests before the experimental intervention commenced, and the same assessments were repeated as post-tests.

3.1 Statistical Methods

The statistical methods of the paired t-test, ANOVA, and ANCOVA are used to analyse the data acquired.

3. Results and Discussion

Analysis of pretest and post test scores concerning Academic Achievement for both the Study and Reference Group was conducted. Frequency tables were utilized to summarize the scores obtained by students with learning differences in both groups. Subsequently, calculations were performed to determine the Median, Mode, Arithmetic Mean, SD, Skewness and Kurtosis.

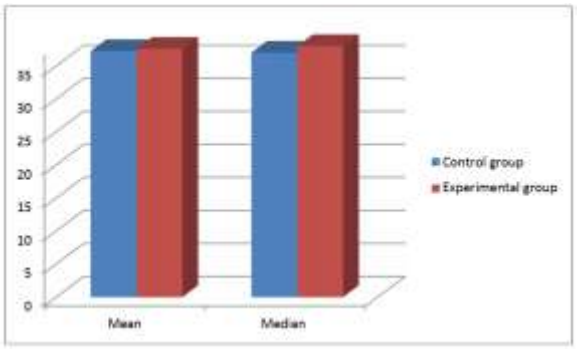
4.1 Distribution of Pre-Test Scores

table-1 provides the statistical constants for the pre-test scores.

Table-1: Statistical Constants of Pretest Scores of The Study and Reference Group

Group	Treatment	N	Mean	Median	SD	Skewness	Kurtosis
Study Group	MSS	33	37.58	38.00	5.985	-0.356	1.138
Control Group	COAM	33	37.24	37.00	4.730	0.474	1.117

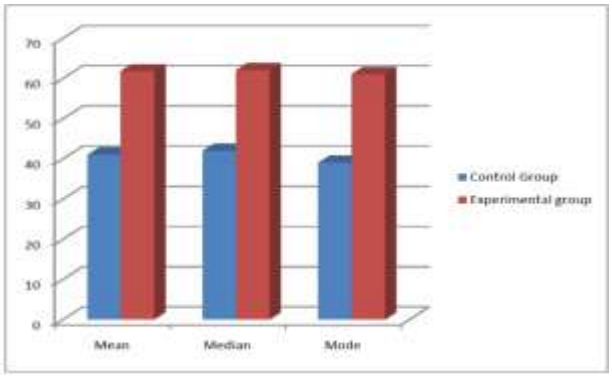
Study Group MSS (Mean Sample Size) had 33 participants with a mean score of 37.58, a median score of 38.00, and a standard deviation of 5.985. The skewness and kurtosis values were -0.356 and 1.138, respectively. In comparison, the Reference Group COAM (Control Over Another Measure) also had 33 participants, with a mean score of 37.24, a median score of 37.00, and a standard deviation of 4.730. The skewness and kurtosis values for the sample were 0.474 and 1.117, respectively.



4.Analysis of Post-Test Scores Distribution

Table-2 presents the statistical constants for post-test scores in detail. Statistical Constants Regarding Post Test Scores of Studies and Reference Group

Group	Treatmen	N	Mean	Median	Mode	SD	Skewness	Kurtosis
Study_	MSS	33	61.76	62.00	61	7.259	-1.249	1.903
Control_	COAM	33	41.00	42.00	39	4.880	-0.168	-0.749



The mean and median values of both the Study and Reference Group show discrepancies. Specifically, the arithmetic mean scores for the Study and Reference Group are 61.76 and 41.00 respectively, indicating an improvement in academic performance with the implementation of the Multi-Sensory Strategy (MSS) as observed in the post-test. The standard deviations for the Study and Reference Group are 7.259 and 4.880 respectively, implying that the scores exhibit no significant deviation from their respective means. Furthermore, both groups exhibit negative skewness in their results, indicating that their distributions retain their skewness. The narrow skewness and kurtosis of the sample imply a roughly normal distribution. These discoveries are visually depicted in the graphical display of the data.

Conclusion:

The mean and median values of both the Study and Reference Group exhibit disparities. Specifically, the arithmetic mean scores for the Study and Reference Group are 61.76 and 41.00, respectively. These findings indicate that the Multi-Sensory Strategy (MSS) positively impacted academic performance in the post-test. Moreover, the standard deviations for the Study and Reference Group are 7.259 and 4.880, respectively, suggesting that the scores are closely distributed around the mean. Furthermore, the skewness results for both

the groups indicate a retention of their respective skewness, while the narrow skewness and kurtosis of the sample suggest a roughly normal distribution. The data is visually represented through graphical means. It is imperative to provide additional support to children with learning differences to foster their academic advancement, a fact often overlooked by many. Despite parents' desires to aid their children in the process of learning differences, uncertainties prevail, compounded by limited governmental efforts toward inclusive education. Challenges persist due to the inflexible curriculum, a shortage of special educators, and inadequate resources. A significant contributing factor to these challenges is the lack of awareness among educators regarding effective instructional techniques tailored for students with learning differences. While numerous instructional strategies exist globally, their efficacy in Indian settings remains unexplored. The present study seeks to replicate positive outcomes using the Multi-Sensory Strategy, offering educators, administrators, and policymakers a viable approach to address the needs of students with learning differences.

5.1 Educational Implications

1. Parents, special educators, administrators, planners, teacher training institutions, and community members might be affected by the results of this study. Regardless of their capacity for trying anything new and creative, instructors and parents should support the kids.
2. Parent-teacher conferences play a crucial role in understanding the challenges faced by children. Collaborative efforts between parents and the school are necessary to address these challenges effectively. It's important for instructors to utilize psychological approaches and perspectives sensitively, particularly when collaborating with guardians of youngsters with educational challenges differences, to ensure productive discussions and solutions.
3. Through inclusive education, it is necessary to mainstream the disabled in the general school system. Therefore, non-formal education needs to be promoted in

order to give everyone access to literacy instruction and skill development.

4. There should be seminars and workshops where teachers may talk about issues and come up with solutions with the assistance of professionals including psychologists, child counsellors, and parent counsellors. In such programs, parents should also be invited.

   The government has put forth numerous laws and programs, but their execution is not producing the intended effects. Therefore, involving government and non-government groups is the best alternative for the welfare and education of learning challenged people.

5. Numerous NGOs ought to step up and collaborate with diverse governmental endeavours put out by the government for the benefit of youngsters with learning differences. After all, a teacher must develop professionally as well. The child's only chance is with (e, and he is the only professional qualified to identify or treat this issue.

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Abbreviations:

NJCLD - National Joint Committee on Learning differences

ACLD- Association of Children and Adults with Learning differences

DTLD- Diagnostic Test for Learning Differences

SD- Standard Deviation