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Visual Perception Ability Among Learning Disabled Elemetary School Students In Relation To Curiosity

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Abstract

The present study aims to find out the relationship between visual perception ability among learning disabled elementary school students in relation to their curiosity. A random sample of 100 learning disabled elementary school students studying in 7th grade were selected from Hoshiarpur district. For data collection Diagnostic Test of Learning Disability (DTLD) by Swarup and Mehta (2011), Behavioural Checklist by Swarup and Mehta (2011), a self-developed Parents' Checklist, Raven's Progressive Matrices and Court (2000), Academic Achievement scores from the previous class, adapted version of Visual Perception Ability Test, and Cognitive Abilities Test by Vishal Sood and Pooja Sharma (2022) were employed. Descriptive statistics, t-test and Karl Pearson's coefficient of correlation as statistical techniques were used to analyse the data. The finding of the study revealed that there is no significant difference in visual perception ability and curiosity among boys and girls learning disabled elementary school students Further, the study also found a significant and positive relationship between visual perception ability and curiosity among learning disabled elementary school students.

Keywords: *Visual Perception Ability, Curiosity, Learning Disability, Elementary School Students*

Introduction

Learning disabilities are among the most significant challenges in education, affecting children's ability to acquire and use skills in reading, writing, mathematics, and other academic domains, despite average or above-average intelligence (Kirk et al.,2015). These difficulties are often linked to deficits in cognitive and perceptual processes, particularly visual perception, which plays a crucial role in interpreting, organizing, and responding to visual stimuli from the environment. Effective visual perception enables children to judge objects' size, shape, and spatial relationships accurately, supporting tasks such as reading, writing, and problem-solving (Sortor & Kulp, 2003; Sarajar, 2021). The brain's hemispheres have distinct roles in perception: the right hemisphere governs nonverbal, spatial, and imaginative functions, while the left hemisphere manages language, logical reasoning, and mathematical operations (Ozden, 2003; Gulpinar, 2005). Dysfunction in these areas may lead to learning difficulties, making the study of visual perception critical for understanding academic challenges in learning-disabled students (Keles & Cepni, 2006).

Gestalt theory provides a theoretical framework for understanding how humans process visual information holistically rather than as isolated elements (Liang, 2018; Mungan, 2021). Principles such as proximity, similarity, closure, continuity, and figure-ground relationships explain how individuals naturally organize sensory inputs into meaningful patterns (Amanatiadis et al., 2018). These principles have practical relevance in education, allowing teachers to design instructional and assessment tasks that align with students' natural perceptual processing. Learning-disabled students often exhibit visual perceptual deficits that affect reading, writing, and motor coordination, such as letter reversals, skipped words, or difficulty recognizing symbols,

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highlighting the need for early identification and intervention (Goldstand et al., 2005; Alkan, 2008; Patel et al., 2020; Sanchez-Gonzalez et al., 2022). Enhancing visual perception skills can improve academic performance, social participation, and overall self-development (Aral, 2010; Butun-Ayhan et al., 2015).

Alongside perceptual abilities, curiosity plays a key role in learning by motivating exploration, inquiry, and problem-solving. Defined as the desire to acquire knowledge, experience novelty, and engage with the environment, curiosity stimulates attention, memory, and cognitive growth (Binson, 2009; Sinha et al., 2017; Kashdan et al., 2018). It enhances learning outcomes, including academic engagement, knowledge acquisition, inquiry skills, and even life satisfaction (Gruber et al., 2014). For children with learning disabilities, curiosity can act as a compensatory factor, motivating them to remain engaged and persist in learning tasks despite academic challenges (Garvin & Krishnan, 2021).

Curiosity manifests in multiple forms, including diversive curiosity (a desire for novelty), epistemic curiosity (a drive for knowledge), specific curiosity (focused on particular problems), perceptual curiosity (attention to sensory stimuli), state curiosity (temporary situational interest), trait curiosity (a stable disposition), and interpersonal curiosity (interest in others' thoughts and behaviors) (Hagtvedt et al., 2019). These dimensions highlight the multifaceted nature of curiosity and its dynamic interaction with both internal disposition and external stimuli, including supportive learning environments, social interactions, and engaging activities (Dai, 2013; Zhang et al., 2024).

Despite the importance of visual perception and curiosity in learning, few studies have examined their interaction, particularly in elementary school students with learning disabilities. Prior research suggests that perceptual skills may influence curiosity levels, and that curiosity, in turn, can enhance cognitive functioning and academic engagement (Cruys et al., 2012; Singh & Equbal, 2023). Investigating the relationship between visual perception ability and curiosity among learning-disabled students can provide valuable insights for designing instructional strategies and interventions. The present study, therefore, aims to explore how visual perceptual abilities relate to curiosity in learning-disabled elementary school students, with the goal of informing educational practices that enhance both cognitive and motivational aspects of learning

Emergence of the Problem

Learning disabilities have been widely recognized as one of the major challenges affecting children's academic achievement and overall development. Research studies Swarup & Mehta (2008); Lerner (2011); Kirk et al. (2015) have emphasized that many learning-disabled students experience difficulties in processing visual information, which affects reading, writing, and problem-solving skills. Visual perception is a crucial cognitive function that enables students to interpret and make sense of visual stimuli from their environment. Deficits in this area can interfere with academic learning and the ability to organize information effectively. Hence, investigating visual perception ability among learning-disabled students is necessary to understand their specific learning barriers and to develop suitable educational interventions.

Curiosity is another important psychological factor that contributes to students' motivation and engagement in learning. Studies such as those by Litman (2008); Engel (2015); and Mussel (2022) have highlighted curiosity as a key determinant of cognitive growth and problem-solving ability. For learning-disabled students, curiosity can play a vital role in stimulating interest and persistence in learning tasks despite challenges. However, research exploring how curiosity relates to cognitive variables especially visual perception ability among learning-disabled students is limited. In previous studies Singh & Equbal (2023);

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Cruys et al. (2012) suggest that curiosity is positively related to cognitive and perceptual processing, yet more empirical evidence is needed in the context of elementary education.

Hence, studying the relationship between visual perception ability and curiosity among learning-disabled students is essential for understanding how perceptual and motivational factors jointly influence academic performance. The current study bridges this gap by examining how visual perceptual abilities relate to the level of curiosity in learning-disabled elementary school students. So, the present study aims to investigate the visual perception abilities among elementary school students with learning disabilities and examine how these abilities relate to their curiosity.

Objectives of the Study

1. To study the visual perception ability among learning disabled elementary school students in relation to gender.
2. To study the curiosity among learning disabled elementary school students in relation to gender.
3. To study the relationship between visual perception ability and curiosity among learning disabled elementary school students.

Hypotheses of the Study

1. There will be no significant difference in the visual perception ability among learning disabled elementary school students in relation to gender.
2. There will be no significant difference in the curiosity among learning disabled elementary school students in relation to gender.
3. There will be no significant relationship between visual perception ability and curiosity among learning disabled elementary school students.

Research Methodology

A descriptive Survey method was employed by the investigator to carry out the research.

Sample: The research sample comprised 100 learning-disabled students studying in 7th Grade from various elementary schools of Hoshiarpur district. Participants were selected using a multistage random sampling technique to ensure adequate representation of the population.

Tools Used: To identify the learning-disabled elementary school students, the investigator utilized several standardized tools and instruments. These included the Diagnostic Test of Learning Disability (Swarup & Mehta, 2008), the Teacher Behavioural Checklist for Screening Learning Disabled Children (Swarup & Mehta, 2011), and a Learning Disability Checklist for Parents developed by the investigator. The Standard Progressive Matrices (Raven, Raven, & Court, 2000) and the Academic Performance Scores of the previous class were also taken into consideration. In addition, an adapted version of the Visual Perception Ability Test and the Children's Curiosity Scale (Dr. Rajiv Kumar, 2012) were employed for the assessment of visual perception ability and curiosity among the selected students.

Statistical Techniques: t-test and Karl Pearson's coefficient of correlation were used to determine the significance of differences and relationships among the variables.

Results and Conclusions

After tabulating the data and applying the statistical techniques, following results and conclusions had been derived out:

Hypothesis 1: There will be no significant difference in the visual perception ability among learning disabled elementary school students in relation to gender.

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Table 1: Visual Perception Ability of Learning Disabled Elementary School Students in relation to Gender

Variable	Gender	N	Mean	SD	SE	t-value
Visual Perception Ability	Boys	53	31.4	5.89	1.27	1.36
	Girls	47	29.6	6.85		

Table No. 1 indicates that the mean scores of boys and girls learning-disabled elementary school students are 31.4 and 29.6, with standard deviations of 5.89 and 6.85, respectively. The calculated t-value of 1.36 is less than the critical value of 1.96 at the 0.05 level of significance. This indicates that there is no significant difference in visual perception ability between boys and girls learning-disabled elementary school students. Hence, the null hypothesis is accepted.

The findings of the present study are contrary to the research conducted by Goldstand et al. (2005), Ahmetoglu et al. (2008), and Patel et al. (2020), which reported a significant difference in visual perception ability among boys and girls learning disabled students.

Hypothesis 2: There will be no significant difference in curiosity among learning disabled elementary school students in relation to gender.

Table 2: Curiosity of Learning Disabled Elementary School Students in relation to Gender

Variable	Gender	N	Mean	SD	SE	t-value
Curiosity	Boys	53	76.60	17.19	3.47	-0.09
	Girls	47	76.90	17.47		

Table No. 2 shows the mean scores of boys and girls learning disabled elementary school students which are found to be 76.60 and 76.90, and standard deviation is 17.19 and 17.]47 respectively. At the 0.05 level of significance, the calculated t-value is -0.09 which falls below the critical value 1.96, suggesting that the difference is not statistically significant. This indicates that there is no significant difference in curiosity among boys and girls learning disabled elementary school students. Therefore, it can be said that both boys and girls have a similar level of curiosity. So, the null hypothesis is accepted.

The findings of the current study align with those reported by Gupta and Agarwal (2014); Singh (2015); Devi (2017); Aggarwal and Zarabi (2018); and Chauhan and Jain (2020) who also revealed that no significant difference between boys and girls with respect to curiosity. On the other hand, the findings contradict those of Sharma (2018) and Singh and Equbal (2023), who observed a significant difference in the curiosity levels of boys and girls.

Hypothesis 3: There will be no significant relationship between visual perception ability and curiosity among learning disabled elementary school students.

Table 3: Correlation between Visual Perception Ability and Curiosity among Learning Disabled Elementary School Students

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Variables	N	Value of 'r'
Visual Perception Ability and Curiosity	100	0.318

Table No. 3 depicts that a correlation value of 0.318 between visual perception ability and curiosity among learning disabled elementary school students ,which is significant at the 0.01 level when compared to the table value. This indicates that there is positive and significant relationship between visual perception ability and curiosity among learning disabled elementary school students. Thus, the null hypothesis is not accepted.

The findings indicate that students with better visual perception ability tend to show higher curiosity scores. This result is supported by the studies of Mussel (2022); Singh and Equbal (2023), which found a significant relationship between curiosity, cognitive ability, and problem-solving skills. Likewise, the study by Cruys et al. (2012) highlighted that curiosity is closely associated with the semantic information gain measure.

Educational Implications

The findings of the present study have several important educational implications. The results revealed no significant difference exists in visual perception ability and curiosity between boys and girls learning-disabled elementary school students. This indicates that both genders possess similar levels of visual perception ability and curiosity. Therefore, both should be given equal opportunities for exploration and participation in classroom activities. Teachers should create an inclusive learning environment that encourages all students regardless of gender to express their ideas, ask questions, and engage in problem-solving and creative thinking.

Furthermore, the study found a positive and significant relationship between visual perception ability and curiosity among learning-disabled students. This suggests that enhancing visual perception skills may lead to improved curiosity and learning performance. Teachers can incorporate visual aids, models, charts, and interactive materials into daily classroom activities to strengthen visual processing. Such practices not only make learning more engaging but also help learning-disabled students develop better understanding and interest in academic tasks.

In addition, the results highlight the need for special educators and school psychologists to design appropriate intervention programs that foster both curiosity and visual perception skills. Training workshops and awareness programs can help teachers and parents understand the role of visual perception in learning and curiosity development. Curriculum planners should also consider integrating experiential and activity-based learning strategies that stimulate curiosity and support cognitive growth among learning-disabled children.

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