International Journal of Enhanced Research in Educational Development (IJERED)
ISSN: 2320-8708, Vol. 13 Issue 6, November-December, 2025

Academic Achievement and Achievement Motivation in the Context of Hemispheric Dominance among Adolescents

Dr. Manika Prabhakar[1], Shavinder Singh[2]

[1]Asst. Prof, DAV College of Education, Abohar
[2]Research Scholar, DAV College of Education, Abohar

ABSTRACT

This study examines the relationship between academic achievement and achievement motivation with reference to hemispheric dominance among adolescent students. Academic achievement is a key indicator of educational success and is shaped by several psychological and cognitive factors. Among these, achievement motivation and hemispheric dominance play a significant role in influencing learning styles, thinking patterns, and academic outcomes. The investigation was conducted on a randomly selected sample of 100 senior secondary (10+1) students from schools of Abohar tehsil, Punjab. Hemispheric dominance was assessed using the Style of Learning and Thinking (SOLAT) scale, while achievement motivation was measured with the Achievement Value and Anxiety Inventory. Academic achievement was determined based on the percentage of marks obtained in the previous class examination. Statistical analysis involved descriptive statistics, Pearson's product moment correlation, and t-test. The findings revealed a significant positive relationship between academic achievement and achievement motivation for both right- and left-hemispheric dominant students, with comparatively stronger associations among left-hemispheric and high-achieving students. The study highlights the need for instructional practices that address individual differences in brain dominance and motivational levels.

Keywords: Academic achievement, achievement motivation, hemispheric dominance, adolescents, learning styles

INTRODUCTION

Academic achievement has consistently been regarded as the primary goal of the educational process. It reflects the extent to which learners attain desired learning outcomes and successfully master curricular objectives. In modern educational systems, academic achievement determines students' access to higher education, professional opportunities, and social mobility. Despite continuous efforts by educators and institutions, a large number of students fail to perform at expected academic levels, indicating the influence of underlying psychological and cognitive factors.

Academic achievement may be defined as the degree of proficiency attained by learners in scholastic activities, usually measured through examination scores or standardized assessments. It is not solely dependent on intellectual ability; rather, it is influenced by motivation, learning strategies, emotional factors, and cognitive processing styles. Achievement motivation, which refers to an individual's internal drive to strive for success and excellence, is widely recognized as a crucial determinant of academic performance.

Another important factor influencing learning and academic outcomes is hemispheric dominance. The human brain consists of two hemispheres that differ in structure and function. The left hemisphere is generally associated with logical reasoning, verbal expression, and analytical thinking, whereas the right hemisphere is linked with visual perception, creativity, and holistic processing. Individuals tend to rely more on one hemisphere than the other, resulting in distinct learning and thinking styles. These hemispheric preferences may influence how students approach learning tasks and academic challenges.

Although a number of studies have explored academic achievement in relation to either motivation or hemispheric dominance, research examining their combined influence remains limited. The present study attempts to address this gap by

investigating the relationship between academic achievement and achievement motivation with respect to hemispheric dominance among adolescents.

REVIEW OF RELATED LITERATURE

Previous research indicates that academic achievement is a multidimensional construct shaped by psychological, social, and cognitive variables. Achievement motivation has been consistently found to be positively associated with scholastic performance. Students with high achievement motivation tend to set challenging goals, persist in the face of difficulties, and demonstrate greater academic engagement.

Studies on brain hemispheric dominance have shown that differences in cognitive processing styles are linked with variations in academic performance. Research on hemispheric specialization suggests that left-hemispheric dominance is often advantageous in conventional classroom settings that emphasize verbal and analytical skills, whereas right-hemispheric dominance supports creativity and holistic understanding.

Some researchers have examined the interaction between hemispheric dominance and academic variables such as study habits and subject-specific achievement. Findings generally indicate that while hemispheric dominance influences learning preferences, motivation plays a crucial role in determining actual academic success. However, empirical studies simultaneously examining achievement motivation, academic achievement, and hemispheric dominance among adolescents are relatively scarce, thereby justifying the present investigation.

Need of the Study

Each learner processes information in a unique manner based on cognitive preferences and motivational orientation. Hemispheric dominance affects learning styles, while achievement motivation energizes and directs academic behavior. Understanding how these factors are interrelated can assist teachers and parents in creating learning environments that support diverse learners. The present study is significant as it provides insights into the combined influence of hemispheric dominance and achievement motivation on academic achievement among adolescents.

Statement of the Problem

The problem undertaken for the present investigation is stated as follows:

To study the relationship between academic achievement and achievement motivation with respect to hemispheric dominance among adolescents.

Objectives of the Study

1. To examine the relationship between academic achievement and achievement motivation with respect to hemispheric dominance.
1. To study the relationship between achievement motivation and low academic achievement among right- and left-hemispheric dominant students.
2. To analyze the relationship between achievement motivation and high academic achievement among right- and left-hemispheric dominant students.

Hypotheses

1. There is a significant relationship between academic achievement and achievement motivation among right-hemispheric dominant students.
1. There is a significant relationship between academic achievement and achievement motivation among left-hemispheric dominant students.
2. There is a significant difference in the relationship between academic achievement and achievement motivation of right- and left-hemispheric dominant students.
3. There is a significant relationship between achievement motivation and low academic achievement with respect to hemispheric dominance.
4. There is a significant relationship between achievement motivation and high academic achievement with respect to hemispheric dominance.

METHODOLOGY

Sample

The sample consisted of 100 students studying in class 10+1, selected through simple random sampling from senior secondary schools of Abohar tehsil, Punjab.

Tools Used

1. **Style of Learning and Thinking (SOLAT)** by D. Venkataraman was used to identify hemispheric dominance.
1. **Achievement Value and Anxiety Inventory** developed by Mehta was used to assess achievement motivation.
2. Academic achievement was measured using the percentage of marks obtained in the previous annual examination.

Statistical Techniques

The collected data were analyzed using descriptive statistics, Pearson's product moment correlation, and t-test to determine the significance of differences between correlations.

RESULTS AND ANALYSIS

Table 1

Relationship between Academic Achievement and Achievement Motivation with Respect to Hemispheric Dominance (N = 100)

Hemispheric Dominance	N	Correlation (r)	Significance Level
Right Hemisphere	48	0.46	Significant at 0.01
Left Hemisphere	52	0.58	Significant at 0.01

The results indicate a moderate to high positive relationship between academic achievement and achievement motivation for both groups, with a stronger association observed among left-hemispheric dominant students.

Table 2

Relationship between Achievement Motivation and Low Academic Achievement

Hemispheric Dominance	N	Correlation (r)	Significance Level
Right Hemisphere	24	0.32	Significant at 0.05
Left Hemisphere	26	0.41	Significant at 0.05

Table 3

Relationship between Achievement Motivation and High Academic Achievement

Hemispheric Dominance	N	Correlation (r)	Significance Level
Right Hemisphere	24	0.51	Significant at 0.01
Left Hemisphere	26	0.63	Significant at 0.01

The findings reveal that achievement motivation is more strongly related to academic achievement among high achievers, particularly those with left-hemispheric dominance.

DISCUSSION

The findings of the study clearly indicate that achievement motivation is a significant predictor of academic achievement regardless of hemispheric dominance. However, the relationship is comparatively stronger among left-hemispheric dominant students, especially those who exhibit high academic achievement. This may be attributed to the alignment of left-hemispheric processing with the verbal and analytical demands of traditional school curricula.

The significant correlations observed among right-hemispheric dominant students suggest that motivation can effectively enhance academic performance even when learning styles differ from conventional instructional approaches. These results emphasize the importance of fostering achievement motivation across all learners to maximize academic outcomes.

CONCLUSIONS

1. Academic achievement is significantly related to achievement motivation among adolescents.
1. Left-hemispheric dominant students demonstrate a stronger association between achievement motivation and academic achievement.
2. Achievement motivation plays a vital role in improving academic performance among both high and low achievers.

Educational Implications

1. Teachers should design classroom activities that engage both hemispheres of the brain.
1. Motivational strategies such as goal setting, feedback, and reinforcement should be integrated into teaching practices.

2. Parents and educators should create supportive environments that encourage academic effort and persistence.

Suggestions for Future Research

1. Future studies may be conducted on larger and more diverse samples.
1. Similar research can be extended to college and university students.
2. Experimental studies may be designed to enhance achievement motivation based on hemispheric learning preferences.

REFERENCES

[1]. Atkinson, J. W. (1964). *An introduction to motivation*. Princeton, NJ: Van Nostrand.
[2]. Bajwa, S., & Setia, S. (1994). Academic performance in relation to intelligence, self-concept and achievement motivation. *The Progress of Education, 69*(3), 61–64.
[3]. Bogen, J. E. (1969). The other side of the brain: An appositional mind. *Bulletin of the Los Angeles Neurological Society, 34*, 135–162.
[4]. Gadzella, B. M. (1995). Differences in academic achievement as a function of hemisphericity. *Perceptual and Motor Skills, 81*(1), 153–154.
[5]. Gazzaniga, M. S. (1970). *The bisected brain*. New York: Appleton-Century-Crofts.
[6]. Mehta, P. (1976). *Achievement value and anxiety inventory*. New Delhi: Manasayan.
[7]. Mohansundaram, K., & Kumar, J. (2002). Hemisphericity and achievement of higher secondary students. *The Educational Review, 106*(1).
[8]. Singh, P. (2015). Interaction effect of brain hemispheric dominance and study habits on academic achievement in mathematics. *International Journal of Applied Research, 1*(11), 746–750.
[9]. Venkataraman, D. (1994). *Style of learning and thinking (SOLAT) manual*. New Delhi: Manasayan.