EFFECT OF STYLE OF LEARNING AND THINKING ON ACADEMIC ACHIEVEMENT OF SECONDARY SCHOOL STUDENTS

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Abstract

Academic achievement is shaped by a myriad of factors, among which the cognitive processes intricately involved in learning and thinking plays a significant role. Learning and thinking is the preferred way individual's process information. Visual, auditory, and kinesthetic learning styles, as well as Kolb's experiential learning model, are commonly used frameworks. The current study sought to determine whether there is a link between academic achievement and learning-thinking style in secondary school students. The study was carried out using the survey approach. The research participants comprised pupils from Government school in Kurukshetra. It had been discovered that the learning-thinking style had significant effect on school pupils' academic achievement.

Key Words: Academic Achievement, Secondary school students, Style of learning and thinking

INTRODUCTION

It is a worldwide reality that no two people are alike. The dispositions, features, and attributes of the individuals differ. Even among students in the same class, there are disparities. Their abilities and capabilities differ from one another. Everyone possesses a unique way of thinking, learning, and working. These styles are closely tied to the functioning of different hemispheres of the brain. The term "learning style" refers to the specific educational conditions under which a student is most likely to excel (Venkataraman, 1994).In essence, learning style pertains to how individuals prefer to organize and represent information (Reed &Ouyhton, 1997). Visual, auditory, and kinesthetic learning styles, as well as Kolb's experiential learning model, serve as commonly used frameworks in this regard. These different learning styles encompass a variety of

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frameworks for how individuals absorb and process information. David A. Kolb's Experiential Learning Theory (ELT) categorizes learners into four primary styles: Diverging (feeling and watching), Assimilating (thinking and watching), Converging (thinking and doing), and Accommodating (feeling and doing). Fleming's VARK model focuses on preferred perceptual modes of learning, identifying visual, auditory, read/write, and kinesthetic learners (Fleming & Mills, 1992). The social interaction learning style emphasizes collaborative interaction and group activities, where individuals thrive in social settings and benefit from peer teaching and active listening. SOLAT test by Venkataraman (2011) categorized learning and thinking style into three types; Right Brain, Left Brain and Whole Brain. Understanding one's learning style and study habits goes beyond mere classification. It plays a pivotal role in not only how a learner acquires knowledge but also in how instructors can effectively support each student's journey (Tseng, Chu, Hwang, & Tsai, 2008). These diverse learning styles provide a comprehensive view of how individuals engage with educational content, offering educators insights to tailor teaching methods for more effective and inclusive learning experiences. Fatt (2000) viewed that students who share a learning style that aligns with the teaching methods employed by the instructor tend to retain information for a longer duration and exhibit a more optimistic outlook towards the learning process. Students sometimes do poorly in school because they lack the capacity to deal with a variety of situations.Teachers must ascertain what their students wish to learn, how it relates to their lives and work, and how they learn most effectively. According to Lohri-Posey (2003), after analyzing and evaluating students' learning styles, "not only teachers must comprehend the specific learning styles of their students, but students must also comprehend how they learn better themselves in learning". In this light, the alignment between a teacher's instructional strategies, students' learning outcome and a student's learning style becomes crucial (Akinbobola, 2011).

Academic achievement holds a profound significance in the lives of individuals, and indeed, for society as a whole. It serves as a gateway to personal growth, empowerment, and the fulfillment of one's potential. At its core, academic achievement represents the culmination of knowledge acquisition, skills development, and intellectual exploration. It paves the way for greater opportunities, both professionally and personally, by opening doors to higher education, meaningful careers, and increased earning potential. Beyond these tangible benefits, academic

achievement also fosters a sense of self-esteem and accomplishment, instilling a belief in one's abilities to tackle challenges and contribute positively to the community. Moreover, it fuels innovation, research, and progress in various fields, thereby driving societal advancements and improvements. In essence, academic achievement is not merely a personal pursuit but a collective endeavor that uplifts individuals and enriches the fabric of our society. It underscores the idea that education is a cornerstone of human development and a catalyst for a brighter, more promising future.

Recognizing the intricate connection between learning styles and academic achievement is essential for educators, students, and parents alike. Extensive research has demonstrated that adapting teaching methods to match a student's learning style can enhance their comprehension, retention, and overall academic performance. This recognition of diverse learning styles and their profound influence on academic success has spurred educational institutions and instructors to embrace more flexible and personalized teaching approaches.

LITERATURE REVIEW

Learning styles refers to the preferred ways individuals' process information. Several studies have explored the intricate relationship between learning styles and academic achievement across various educational contexts.Almasri (2022) uncovered the influence of learning styles on engagement and satisfaction in science learning simulations and highlighted the positive impact of the kinesthetic learning style on student engagement and satisfaction, while Ariastuti and Wahyudin (2022) showed the positive impact of learning styles on academic performance. Biggs & Moore (1993) opined that "learning style may be thought of as a formulation of preconceptions by an individual engaged in the activity of learning".Prihatin and Ichsan (2022) revealed the influence of visual, auditory, and kinesthetic learning methods on the memorization of the Qur'an. In contrast, Rahman and Ahmar (2017) observed no significant relationship between learning styles, gender, and academic achievement. Additionally, Vyjayanti's study (2016) did not find a significant connection between learning styles and academic achievement in secondary schools.Shah (2017) has found that a significant difference exists in learning style preference among male and female. Mohanasundaram and Kumar (2000) discovered that there was a link between school management, thinking, and learning styles. It was also discovered that students from public and private schools did not differ significantly in terms of learning styles

and thinking, namely right hemispheric, left hemispheric, and integrated. Malathi and Malini (2006) found high correlation between learning style and achievement of the students. Based on above cited literature, the current study examined the effect of learning and thinking style on academic achievement of secondary school students.

OBJECTIVES

1) To study the effect oflearning and thinking style onacademic achievement.
2) To study the effect of gender on academic achievement.

HYPOTHESES

Hypothesis 1:

Ho: There is no significant effect of learning and thinking style on academic achievement.

Ha: There is a positive and significant effect of learning and thinking style on academic achievement.

Hypothesis 2:

Ho: There is no significant effect of gender on academic achievement.

Ha: There is a positive and significant effect of gender on academic achievement.

METHODOLOGY

Descriptive survey method was used. A sample of 86 students studying in 10^{th} class of Government Senior Secondary School, MangoliJattan, Kurukshetra was randomly selected in which 43 were boys and 43 students were girls. Style of learning and thinking by Venkataraman (2011) was used and academic achievement was measured based on marks scored in first semester social science exam. Firstly, the researcher administered the SOLAT test on the students of class X. and categorized them in Right Brain, Left Brain and Whole Brain students.ANOVAand independent sample t test were used to study the difference between means.

RESULTS

There were one hundred students in total in which thirty-five students prefer their left brain; thirty seven students showed inclination towards using right brain more and twenty four students scored more in whole brain learning and thinking style dimension.

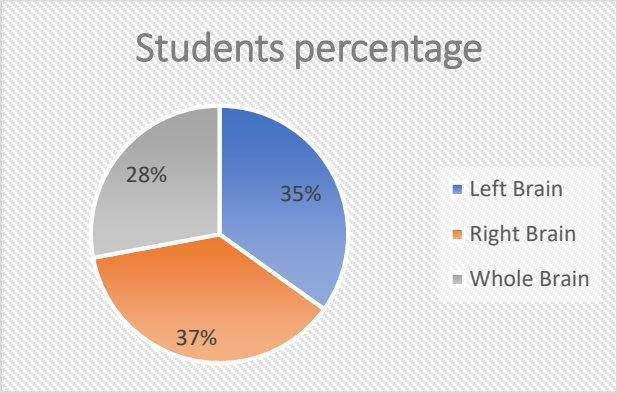

Figure 1 Percentage of Students with Learning and Thinking style preference

Hypothesis 1: Ho: There is no significant effect of learning and thinkingstyle on academic achievement.

Ha: There is apositive and significant effect of learning and thinking style on academic achievement.

Table 1ANOVA Results on the effect of Style of Learning and Thinking on Academic Achievement

	SS	Df	MS	F
Between	1,120.406	2	560.20	4.8*
Within	9,670.99	83	116.52	
Total	10,791.39	85		

- **Significant at 0.05 level**

Table shows that F-value is 4.8which is significant at 0.05 level with df=2/83 that shows there is significant effect of students' preferred learning and thinking styles on their academic performance.

Table 2 Styles of Learning and Thinking-wise t-Values for Academic Achievement

Dimensions	N	Mean	S.D.	t value with Left Brain	t value with Whole Brain
Left Brain	30	30	11.24		
Right Brain	32	32.78	12.11	0.34	2.19
Whole Brain	24	39.04	7.97	3.10**	

** Significant at 0.01level

From table2, the t-value for right andleft brain is 0.34 which is not significant. It indicates that the mean scores of achievements of students with right and left brain did not differ significantly. It may, therefore, be said that students with right and left brain were found to be equal in academic achievement. The mean score of academic achievement of whole brain students is 39.04 which are higher than those who prefer right brain with mean scores 32.78. But the t-value for right brain and whole brain groups is 2.19 which arenot significant at 0.05levels. It indicates that the mean score of academic achievement of students with right and whole brain do not differ significantly. The t-value for left brain and whole brain groups is 3.10 which are significant at 0.01 levels. It indicates that the mean score of students with left and whole brain differ significantly. It may, therefore, be said that students who prefer wholebrain academically achieve more than the students who prefer left brain.

Hypothesis 2: Ho: There is no significant effect of gender on academic achievement.

Ha: There is apositive and significant effect of gender on academic achievement.

Table 3 t-test Results on the effect gender on Academic Achievement

Group	Number of Students	Mean	Standard Deviation	SEM	t-value	P value
Girls	43	35.63	11.01	1.68	1.55	0.123
Boys	43	31.91	11.22	1.71		

From table 3, the result found out that there was no significant effect of gender,t(84)=1.55, *p=0.12,* despite girls (M=35.63, SD=11.01) attaining higher scores than boys(M=31.91, SD=11.22). It may, therefore, be said that girl and boys were found to be equal in academic achievement. So, the null hypothesis is accepted. Gender does not play any role in academic achievement.

DISCUSSION AND CONCLUSION

There are three bases of any teaching learning process: teacher, learner and curriculum. As results showed that style of learning and thinking have positive significant effect on academic achievement.The students with right and left-brain preference were found to be equal in academic achievement and students who prefer whole brain academically achieve more than the students who prefer left brain. The findings can be interpreted with the findings of the study conducted by Kopsovich (2001) study who confirmed that all students' learning style preferences

had a significant impact on their math achievement scores. The findings also suggested that providing teachers with information about students' learning styles preferences will improve student achievements and the gender does not play any role in academic achievement.Educators can use these findings to tailor teaching methods and materials to match students' learning and thinking styles, enhancing overall learning outcomes.Curriculum designers should consider diverse learning and thinking styles when developing course materials and pedagogical strategies.Students can also better adapt their learning strategies to their individual styles, potentially improving their academic success.Research outcomes highlight the need for multimodal and flexible pedagogical approaches according to students' individual style.Educators, curriculum designers, and students can benefit from this knowledge, ultimately leading to improved academic achievement.

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