

Learning Styles and Study Habits: A Way to Academic Success

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ABSTRACT

The aim of the present investigation was to examine the relationship between various learning styles and study habits and their impact on academic success. A sample of 200 students was selected randomly from the two govt. and two private Schools of Delhi. Study Habit Inventory developed by Mukhopadhyay and Dr. D.N. Sansanwal (1985) was administered. This inventory includes nine components namely -comprehension, concentration, task orientation, study sets, interaction, drilling, supports, recording and language. Learning Styles Inventory prepared by Rita Dunn, Kenneth Dunn and Gary E (1989) was also applied. This is a self-reported tool consisting of 90 statements. This inventory has four major aspects- i) Their immediate environment (sound, light, temperature, seating design). ii) Their own emotionality (motivation, persistence, responsibility). iii) Their sociological performance (learning alone or in different sized groups). iv) Their physiological characteristics (perceptual strengths represented by auditory, verbal, tactile, kinesthetic and sequenced characteristics. It was found that coefficient of correlation between learning style and study habit of adolescent was significant and positive.

Keywords: Lerner, Learning Styles, Study Habits, Academic Success

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INTRODUCTION

Learning styles refer to the preferred methods individuals use to perceive, process, and retain information. While there are several models of learning styles, one of the most well-known is the model proposed by Neil Fleming (1987). VARK categorizes learners into four main types: visual, auditory, reading/writing, and kinaesthetic learners. Visual learners can optimize their study routine by incorporating visual aids and engaging in visual learning techniques. Auditory learners can benefit from strategies involving sound and speech, such as participating in discussions and recording lectures. It is essential to note that these learning styles are not mutually exclusive, and individuals often exhibit a combination of preferences. Therefore, adopting a multimodal approach to studying that incorporates various techniques can be beneficial for overall learning and comprehension. By recognizing and implementing effective study habits aligned with their learning style, individuals can unlock their full potential and achieve academic success.

Environmental stimulus dimension This dimension refers to the preference for specific environmental factors that contribute to learning. Some students may have a preference for a quiet and well-organized study environment, while others may thrive in a more dynamic and interactive setting. Environmental stimuli include factors such as lighting, noise levels, temperature, and overall ambiance. Some students may perform better in a quiet library, while others may prefer studying in a bustling coffee shop. Identifying one's environmental stimulus preferences can help create an optimal study environment that promotes concentration and productivity.

Emotional stimulus dimension The emotional stimulus dimension focuses on how emotions impact learning. Some students may find that they learn best when they are motivated, engaged, and enthusiastic about the subject matter. These

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individuals may thrive when learning is associated with positive emotions and rewards. On the other hand, some students may prefer a calm and focused state of mind to absorb information effectively. Identifying emotional stimulus preferences can guide students in cultivating the right mindset and emotional state for optimal learning.

Sociological stimulus dimension The sociological stimulus dimension refers to the preference for social interaction and collaboration in the learning process. Some students may excel in group study sessions, where they can discuss concepts, exchange ideas, and benefit from peer feedback. These individuals thrive in a social learning environment and enjoy cooperative learning activities. In contrast, other students may prefer individual study sessions, where they can work independently and concentrate on their own thoughts. Understanding sociological stimulus preferences can help students choose study methods that align with their social learning preferences.

Physical stimulus dimension The physical stimulus dimension considers the impact of physical sensations on learning. This dimension includes factors such as the use of tactile materials, movement, and physical engagement in the learning process. Some students may benefit from using hands-on manipulatives, conducting experiments, or engaging in physical activities to enhance their understanding of concepts. Others may prefer

more traditional learning methods, such as reading or writing. Recognizing physical stimulus preferences can guide students in selecting study materials and activities that align with their preferred mode of physical engagement.

It is important to note that individuals may have preferences across multiple dimensions, and there is often overlap between different learning styles. Recognizing these dimensions and understanding one's preferences can assist students in developing effective study strategies that cater to their unique learning styles and optimize their learning experience.

Proponents of the use of learning styles in education recommend that teachers assess the learning styles of their students and adapt their classroom methods to best fit each student's learning style. Although there is ample evidence for differences in individual thinking and ways of processing various types of information, few studies have reliably tested the validity of using learning styles in education.

Study Habits

'Study habits' are generic rather than specific in terms of their importance. It has very long reached effect deep into the life of individuals. While one can and usually does presume a delta point in the life of an individual whereby the study habits get fixed by certain age, possibly such patterns get fixed only in over behaviors like study sets, drilling etc. The covert behaviors, like concentration, comprehension, task orientation change with each important changes in the life stages.

Too many students, studying means underlining an expensive textbook with a see-through yellow marker while half-listening to someone's stereo down the hall. Or, if there is an exam the next day, studying means drugging yourself with coffee or spending the entire night trying to cram into your head all the material that should have been learned gradually over the previous eight weeks. Such study habits generally result in enough learning to keep you off academic problems. And because they are reinforced in this way, they are maintained. But they constitute the least efficient way of learning.

Learning is the input, processing, and storage of information, which can then be retrieved after some later time. Lackadaisical reading to the tune of a distant stereo results in little processing and hence little storage. How many times have you discovered, after reading ten pages to a book, that you have almost no idea of what they said? And last-minute cramming involves so much input in so little time that the processing and storage functions of the brain become overworked and inefficient. As a result, the information is stuffed in every way, and when it has to be retrieved, it is difficult to find and even more difficult to organize. In short, neither of these techniques works very well. In both of them, too much time is spent doing too little work.

Numerous studies have explored the relationship between learning styles and study habits, aiming to understand how individuals with different learning styles can develop effective study strategies. While the concept of learning styles has faced some criticism and debate within the educational community, the following research provides valuable insights into the topic.

Pashler et al. (2009) concluded that there is limited evidence supporting the idea that matching instructional methods to students' learning styles enhances learning outcomes. They argued that the emphasis should be on using evidence-based instructional strategies rather than tailoring instruction to specific learning styles.

However, the authors acknowledged that there is still a need for further research to explore the individual differences in learning and identify effective instructional practices.

Willingham et al. (2015) examined the relationship between learning styles and academic performance. Their findings revealed that students who believed in matching instruction to their learning style did not perform better academically compared to those who did not hold this belief. The study suggested that the concept of learning styles may not have a significant impact on actual learning outcomes.

Riener and Willingham (2010) investigated the effects of learning style preferences on learning and retention. They found that presenting information in students' preferred learning style did not lead to improved learning or retention compared to presenting information in a non-preferred style. The study concluded that focusing on effective study strategies, such as active engagement, retrieval practice, and elaboration, is more important for learning than catering to specific learning styles.

Rogowsky et al. (2015) conducted a study focusing on study habits and their impact on academic performance. The research found that certain study strategies, such as summarizing information and self-testing, were associated with better academic outcomes. However, the study did not specifically explore the relationship between learning styles and study habits, highlighting the need for further research in this area.

In conclusion, while research suggests that the concept of learning styles may not have a direct impact on learning outcomes, the importance of effective study habits and strategies cannot be overlooked. Adopting study techniques that promote active engagement, retrieval practice, and elaboration has been consistently associated with improved academic performance. Instead of solely relying on learning styles, it is recommended to focus on evidence-based study techniques that suit individual preferences and strengths.

METHOD

A sample of 200 students was selected randomly from the two govt. and two private Schools of Delhi. Study Habit Inventory developed by Mukhopadhyay and Dr. D.N. Sansanwal (1985) was administered. This inventory includes nine components namely -comprehension, concentration, task orientation, study sets, interaction, drilling, supports, recording and language. Learning Styles Inventory prepared by Rita Dunn, Keneth Dunn and Gary E (1989) was also applied. This is a self-reported tool consisting of 90 statements. This inventory has four major aspects-. i) Their immediate environment (sound, light, temperature, seating design). Their own emotionality (motivation, persistence, responsibility). Their sociological performance (learning alone or in different sized groups). iv) Their physiological characteristics (perceptual strengths represented by auditory, verbal, tactile, kinesthetic and sequenced characteristics.

Objectives of the Study

The study has been able to achieve the following objectives.

- To compare the study habits of students according to gender.
- To study the learning styles of adolescent students with respect to their gender.
- To compare the learning style of government and private school students.

- To compare the study habits of government and private school students.
- To find a relationship between learning style and study habits of adolescent students.

Hypotheses of the Study

The following hypotheses are formulated to empirically validated the above objectives:

Ho₁: There is no significant difference in the study habits of boys and girls.

Ho₂: There is no significant difference in the learning style of boys and girls based on:

- Environmental stimulus dimension
- Emotional stimulus dimension
- Sociological stimulus dimension
- Physical stimulus dimension

Ho₃: There is no significant difference between government and private school students' learning style.

Ho₄: There is no significant difference between government and private school students' study habits.

Ho₅: There is no significant relationship between learning style and study habits of students.

RESULT ANALYSIS

Table 1. Mean, SD and df of boys and girls on variable -Study Habits

Variable	Compared Groups	N	Mean	S.D.	df	t-value	Level of significance
Study Habits	Boys	100	18.94	3.61	198	2.08	*Significant
	Girls	100	21.04	4.24			

Table no.1 reveals that the mean score on study habits of boys and girls is 18.94 and 21.04 respectively. The calculated 't' value is 2.08 which is higher than the table value. So, the null hypothesis that there is no significant difference in study habits of boys and girls is rejected and an alternate hypothesis is accepted. Therefore, it may be concluded that boys and girls differ significantly in their study habits.

Ho₂: There is no significant difference in the learning style of boys and girls based on:

- Environmental stimulus dimension
- Emotional stimulus dimension
- Sociological stimulus dimension
- Physical stimulus dimension

Table 2 : Mean, SD and significance of 't' of boys and girls based on Environmental stimulus dimension of learning styles.

Variable	Compared Groups	N	Mean	SD	t- value	Significance
Environmental Stimulus	Boys	100	20.19	3.62	2.02	*Significant
	Girls	100	23.23	4.89		

Table no. 2 shows the mean comparison of boys and girls on environmental stimulus dimension of learning style. The calculated t-value 2.02 is less than the tabulated t-value (1.96), which depicts that there is a significant difference between adolescent students of 9th class boys and girls on environmental stimulus of learning

style. The table further reveals that adolescent students of 9th class girls achieved higher mean score (23.23) as compared to adolescent students of 9th class boys on environmental stimulus of learning styles. It means girls are can more easily grasp the new concepts in comparison to boys.

Table 3: Mean, SD and significance of 't' of boys and girls based on Emotional stimulus dimension of learning styles.

Variable	Compared Groups	N	Mean	SD	df	t- value	Signif icance
Emotional Stimulus	Boys	100	27.45	3.98	198	3.12	*Sig.
	Girls	100	24.89	4.56			

The above table no.3 shows the mean comparison of adolescent students of 9th class boys and girls on emotional stimulus of learning style. The calculated t-value 3.12 exceeds the tabulated t-value (2.57) at 0.01 level of significance which depicts that there is a significant difference between adolescent students of 9th class boys and girls on emotional stimulus dimension of learning styles. The table further reveals that 9th class boys achieved higher mean score (27.45) as compared to adolescent students of 9th class girls on emotional stimulus of learning styles.

Table 4: Mean, SD and significance of 't' of boys and girls based on Sociological stimulus dimension of learning styles.

Variable	Groups	N	Mean	SD	df	t- value	Signif icance
Sociological Stimulus	Boys	100	23.7	4.16	198	1.86	Insign ificant
	Girls	100	25.8	4.82			

The above table no. 4 shows the mean comparison of adolescent students of 9th class boys and girls on sociological stimulus of learning style. The calculated t-value 1.86 is less than the tabulated t-value (1.96) at 0.05 level, which depicts that there is no significant difference between 9th class boys and girls on sociological stimulus of learning style. The table further reveals that 9th class girls achieved higher mean score (25.8) as compared to 9th class boys on sociological stimulus dimension of learning styles.

Table 5: Mean, SD and significance of 't' of boys and girls based on Physical stimulus- dimension of learning styles.

Variable	Group	N	Mean	S.D.	df	t- value	Level of significance
Physical Stimulus	Boys	100	28.96	4.489	198	3.98	*Sig.
	Girls	100	26.789	5.23			

Table no.5 reveals the mean comparison of adolescent students of 9th class boys and girls on physical stimulus of leaning styles. The calculated t-value 3.98 exceeds the tabulated t-value (2.57) at 0.01 level of significance which depicts that there is a significant difference between adolescent students of 9th class boys and girls on physical stimulus of learning styles. The table further reveals that adolescent students of 9th class boys achieved higher mean score (28.96) as compared to adolescent students of 9th class girls on physical stimulus dimension of learning style.



Table 6: Mean, SD and significance of 't' of boys and girls on total learning style

Variable	Groups	N	Mean	SD	df	t-value	Significance
Total Learning Style	Boys	100	42.91	6.56	198	2.99	**Sig.
	Girls	100	36.93	5.89			

The above Table 6 shows the mean comparison of adolescent students of 9th class boys and girls on composite score of learning styles. The calculated t-value 2.99 exceeds the tabulated t-value (2.57) at 0.01 level of significance which depicts that there is a significant difference between adolescent students of 9th class boys and girls of learning styles. The table further reveals that adolescent students of 9th class boys achieved higher mean score (42.91) as compared to adolescent students of 9th class girls on composite score of learning styles.

Therefore, the elements of learning style – Environmental stimulus, Emotional stimulus, Sociological stimulus, and Physical stimulus have significant impact on the learning abilities of adolescent students of 9th class boys and girls.

Ho₃: There is no significant difference between government and private school students' learning style.

Table 7: Mean, SD and significance of 't' of private and govt. school students on learning style.

Variable	Type of school	N	Mean	S.D	df	t-value	Level of Significance
Learning style	Government	100	22.03	3.56	198	2.59	*Significant
	Private	100	27.06	3.9			

It is clear from Table7 that there exists significant difference in mean scores of government and private school students on learning style. The mean score of learning style among government school was 22.03 and the mean score of learning style of private was 27.06. As shown in the table the computed t-ratio of the sample was 2.59, which is significant at 0.01 level of significance. Thus, the third hypothesis, there is no significant difference between government and private school students' learning style is rejected.

Ho₄: There is no significant difference between government and private school students' study habits.

Table: 8 Mean, SD and significance of 't' of private and govt. school students on study habits.

Variable	Type of school	Mean	S. D	t-value	Level of Significance
Study habit	Government	14.68	1.75896	1.99	Significant*
	Private	17.56	4.9866		

From table no. 8, significant difference exists in mean scores of governments and private school students on their study habit. The mean score of study habit among government school students was 14.68 and the mean score of study habit of private school students was 17.56. As shown in the table the computed t-ratio of the sample 1.99 which is not significant at 0.05 level. Thus, the hypothesis stated that there is no significant difference between government and private school students' study habits is rejected.

Ho₅: There is no significant relationship between learning style and study habits of adolescent students.

Table 9: Relationship between study habit and learning styles of adolescent students of 9th class.

Variable	Coefficient of correlation	Level of significance
Study Habits & Learning style	0.68	significant

Table no.9 reveals that coefficient of correlation between learning style and study habit of adolescent students of 9th class is .68 which is positive and significant at 0.05 level of significance so the hypothesis "There is no significant relationship between study habit and learning styles of adolescent students" is rejected.

CONCLUSIONS

The results of this study showed significant relationships between the students' learning styles, study habits, and performances in online learning, and have offered an insight into the mode of delivery. The design of effective courses for adolescent students of 9th class is most likely to be in connection with the characteristics and preferences of the learner, as it is in the classroom. It was seen that the learners usually show characteristics of assimilators in online synchronous settings.

It was found that there is a significant correlation between the two study habits and learning style. (Tyagi H 2014). Considering that it is difficult to control concentration in online synchronous settings, it is deemed necessary for the instructors and the environment designers to take special measures in this respect. The planning of work is not an easy task for adolescent students of 9th class to perform. At this point, instructors can announce their syllabus which may provide support for these students at the beginning of the terms. Hence, learning performances can be enhanced with measures to easily bring forward study habits for adolescent students of 9th class. In this study, home environment and planning of work, reading, and note taking habits do not have a significant correlation with academic achievement in online synchronous settings. It is quite difficult to apply note taking habits due to the nature of the online synchronous setting. At this point, it may be proper for instructors to highlight the course records and to direct the students to watch these records.

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