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Research Paper

Exploring Learning Outcome among Secondary School Students: A Comparative Study of Psychological and Behavioral Factors

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ABSTRACT

The purpose of this study was to explore the relationship between study habits, locus of control, and learning outcomes among secondary school students, and to establish the influence of these factors on learning outcomes. The objectives of this study were to (1) evaluate the extent of study habits, locus of control, and learning outcomes among students, (2) evaluate the extent of study habits, locus of control, and learning outcomes among students according to gender, location, and type of school, (3) establish the relationship between study habits, locus of control, and learning outcomes, and (4) establish the predictive influence of study habits and locus of control on learning outcomes. The study employed a descriptive survey design. The study was conducted on 152 class IX students selected through stratified random sampling from government, private, and government-aided schools of Birbhum District, West Bengal. Standardized instruments were employed to assess study habits and locus of control, while the students' performance was considered as an indicator of learning achievement. Statistical methods such as mean, standard deviation, t-test, one-way ANOVA, correlation, and multiple regression analysis were employed to analyze the data. The findings revealed that the data satisfied the assumption of normality. There were no significant differences in study habits, locus of control, and learning outcomes between gender and location, and between location and gender. Significant differences existed between school types in locus of control and learning outcomes. There was a small positive correlation between study habits and learning outcomes, and a small negative correlation between locus of control and learning outcomes. The regression analysis indicated that study habits positively predicted learning outcomes, and locus of control negatively predicted learning outcomes.

Keywords: *Study Habits, Locus of Control, Learning Outcome, Secondary School Students*

Academic achievement at the secondary school level is one of the most important outcomes of the schooling process. It reflects not only students' mastery of subject content but also their ability to manage learning demands, adapt to academic challenges, and prepare for future educational stages. In the Indian education system, secondary education—especially at the Class IX level—marks a significant transition. At this stage, students encounter a more demanding curriculum, greater examination pressure,

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and higher expectations for independent learning. Performance during this period often determines students' academic confidence, choice of academic streams, and continuation into higher secondary education. Therefore, understanding the factors that explain academic achievement among secondary school students is both educationally and socially important.

Academic achievement is influenced by more than intellectual ability alone. Research in education and psychology has consistently shown that students' learning behaviors, attitudes, and psychological beliefs play a critical role in shaping academic outcomes. Even students with similar cognitive abilities may show wide differences in achievement due to variations in how they study, how motivated they are, and how they perceive control over their academic success. As a result, researchers have increasingly focused on non-cognitive factors such as study habits, self-concept, locus of control, and learning strategies to explain differences in academic performance.

Among these factors, study habits have emerged as one of the most consistent predictors of academic achievement at the secondary school level. Study habits refer to the regular patterns and strategies students use while studying, such as planning study time, maintaining concentration, revising lessons, taking notes, and preparing for examinations. Effective study habits enable students to use their time productively and engage more deeply with learning materials. Numerous studies have reported a positive relationship between study habits and academic achievement, showing that students who follow organized and disciplined study routines tend to achieve higher academic scores than those with poor study practices (Bhat & Bhat, 2018; Nirmala & Rao, 2014; Odiri, 2015).

The importance of study habits is closely linked to how students approach learning tasks. Students who actively plan their studies, revise regularly, and use effective strategies are more likely to understand concepts rather than rely on rote memorization. Research has shown that strategic and active learning approaches enhance students' thinking skills and academic outcomes (Asefi & Imani, 2018). This suggests that study habits are not merely mechanical routines but reflect students' engagement with learning and their ability to regulate their own academic behavior.

In the Indian context, the role of study habits becomes particularly important due to the examination-oriented nature of schooling. Students often face heavy syllabi, time pressure, and high expectations from teachers and parents. Under such conditions, effective study habits help students cope with academic stress and perform better in examinations. Studies conducted in Indian schools have confirmed that students with better study habits show significantly higher academic achievement at both secondary and higher secondary levels (Kumar, 2018; Singh, 2011; Mishra, 2022). These findings highlight the need to focus on students' learning behaviors as a key area for academic improvement.

In addition to behavioral factors, psychological factors also play an important role in shaping academic achievement. One such psychological construct is locus of control. Locus of control refers to students' beliefs about the causes of their academic success or failure. According to Rotter (1966), individuals with an internal locus of control believe that outcomes depend largely on their own effort and ability, whereas individuals with an external locus of control attribute outcomes to luck, fate, or external forces beyond their control.

Students' locus of control influences their motivation, persistence, and approach to learning. Students with an internal locus of control are more likely to take responsibility for their studies, persist in the face of difficulties, and adopt effective learning strategies. A comprehensive review of research on locus of control and academic achievement found that students with an internal locus of control generally demonstrate higher academic performance and more positive learning behaviors (Findley & Cooper, 1983). These students tend to believe that effort leads to improvement, which encourages sustained engagement with academic tasks.

However, empirical findings related to locus of control are not always uniform. Some studies suggest that locus of control has a direct effect on academic achievement, while others indicate that its influence may be indirect and mediated through study habits and learning strategies. For example, research has shown that locus of control interacts with study habits in explaining academic achievement, suggesting that students' beliefs about control shape how they study and engage with academic tasks (Bassey et al., 2019). This indicates that psychological and behavioral factors are closely interconnected and should be examined together rather than in isolation.

Goal orientation and study strategies further strengthen this interaction between psychological and behavioral factors. Students who are goal-oriented and use effective study strategies tend to perform better academically (Kalechstein et al., 1989). Such students are more likely to plan their learning, monitor their progress, and adjust strategies when faced with academic challenges. These findings support the view that academic achievement is the result of a combination of motivation, belief systems, and learning behaviors.

Another important factor influencing academic achievement is self-concept. Students' perceptions of their own abilities affect their confidence, motivation, and willingness to engage in academic tasks. Research has shown that self-concept, along with study habits, plays a significant role in determining academic achievement among secondary school students (Mangal & Mangal, 2017). Students who believe in their academic abilities are more likely to adopt positive study behaviors and persist in learning.

The Indian secondary education system presents a diverse institutional context, particularly in terms of differences between government and private schools. These schools differ in infrastructure, teaching practices, parental involvement, and academic support systems. Such differences may influence students' study habits, motivation, and beliefs about control over academic outcomes. Comparative studies have indicated that institutional context can shape students' academic behaviors and achievement patterns (Sherafat & Murthy, 2016; Sharma & Sharma, 2023). Understanding these contextual influences is essential for developing effective educational interventions.

Gender differences in academic achievement have also been widely discussed in educational research. While access to secondary education for girls has improved significantly in India, differences in learning behaviors and academic performance continue to be examined. Some studies suggest that girls demonstrate better study habits, while others report minimal gender differences. These mixed findings highlight the importance of empirical examination within specific contexts rather than relying on general assumptions (Sarwar et al., 2009).

The present study seeks to explain academic achievement among secondary school students by focusing on study habits and locus of control as key explanatory variables. By examining these factors together, the study aims to provide a more comprehensive understanding of academic achievement than studies that focus on a single determinant. This integrated approach recognizes that students' beliefs about control influence how they study, and in turn, how they perform academically.

LITERATURE REVIEW

The review of related literature for this present study was organized into two major themes: (1) Study Habits and Academic Achievement, and (2) Psychological Factors (Locus of Control, Self-Concept, and Related Variables) and Academic Achievement. This thematic organization helps in understanding how behavioral and psychological factors individually and jointly influence students' academic performance at the secondary school level.

Study Habits and Academic Achievement

Study habits have been widely recognized as a significant behavioral factor influencing students' academic achievement. Study habits include activities such as planning study time, maintaining regularity in learning, concentrating during study, revising lessons, and preparing systematically for examinations. Several empirical studies have consistently reported a positive relationship between effective study habits and academic achievement among secondary school students. Bhat and Bhat (2018) examined the relationship between study habits and academic achievement among secondary school students and found that students with good study habits performed significantly better academically. Their findings emphasized that disciplined study routines contribute to better understanding of subject matter and improved examination performance. Similar results were reported by Nirmala and Rao (2014), who found that secondary school students with effective study habits achieved higher academic scores compared to those with poor study habits.

Studies conducted in different educational contexts have further supported this relationship. Odiri (2015) reported a significant positive correlation between study habits and academic achievement among secondary school students, highlighting that effective time management and regular study were strong predictors of academic success. Olaitan and Omomia (2014) also found that students' academic achievement was closely linked to their study habits, suggesting that consistent and organized learning behaviors enhance academic outcomes.

Indian studies have provided strong empirical support for the role of study habits in academic achievement. Kumar (2018) found that study habits significantly influenced academic achievement among secondary school students, emphasizing that students who planned their studies and revised regularly showed higher achievement levels. Similarly, Singh (2011) reported that higher secondary students with better study habits achieved significantly higher academic scores, indicating that study habits play a crucial role across different levels of schooling. It was highlighted by earlier studies that the role of learning strategies and study orientation in academic performance. Sarwar et al. (2009) compared high and low academic achievers and found that high achievers demonstrated more effective study orientation and learning strategies. These findings suggest that academic achievement is not only influenced by the amount of time spent studying but also by the quality and effectiveness of study practices.

Recent studies have extended this understanding by examining study habits alongside attitudes toward learning. Mishra (2022) reported that positive study habits and favorable learning attitudes significantly contributed to academic achievement among secondary school students in India. Similarly, Sherafat and Murthy (2016) found that students with better study habits performed significantly better academically, regardless of whether they were in secondary or senior secondary classes.

The literature under this theme clearly indicates that study habits are a strong and consistent predictor of academic achievement. These findings suggest that study habits are modifiable behaviors that can be improved through proper guidance, training, and supportive learning environments.

Psychological Factors and Academic Achievement

In addition to study habits, psychological factors such as locus of control, self-concept, goal orientation, and self-control have been widely studied in relation to academic achievement. Among these, locus of control has received considerable attention as an important psychological determinant of students' academic performance.

Rotter (1966) conceptualized locus of control as individuals' beliefs about whether outcomes are determined by their own efforts (internal locus of control) or by external forces such as luck or fate (external locus of control). Students with an internal locus of control are generally more motivated, persistent, and responsible for their learning. A comprehensive review by Findley and Cooper (1983) concluded that internal locus of control is positively associated with academic achievement, as such students are more likely to believe that effort leads to success.

Empirical studies have supported this theoretical perspective. Bassey et al. (2019) examined academic locus of control, study habits, and academic achievement among secondary school students and found that locus of control significantly influenced academic achievement, particularly when combined with effective study habits. Their findings suggest that psychological beliefs and behavioral practices interact to shape academic outcomes.

Self-concept is another important psychological variable related to academic achievement. Mangal and Mangal (2017) found that self-concept, along with study habits, significantly influenced academic achievement among secondary school students. Students with a positive self-concept tended to demonstrate better study behaviors and higher academic performance. These findings highlight that students' perceptions of their own abilities affect their motivation and engagement with learning.

Goal orientation and learning strategies have also been linked to academic achievement. Kalechstein et al. (1989) reported that students with clear academic goals and effective study strategies performed better academically. Such students were more likely to regulate their learning, monitor progress, and adapt strategies when facing academic challenges. This suggests that psychological motivation and strategic behavior together contribute to academic success.

Indian studies have further explored psychological dimensions related to academic achievement. Praveen (2010) found a significant relationship between self-control and academic achievement among secondary school students, indicating that students with

higher self-control demonstrated better academic performance. Similarly, Barman and Mahanta (2022) reported that locus of control and self-concept significantly influenced academic achievement among secondary school students, reinforcing the importance of psychological factors in academic success. Parental encouragement has also been examined as a related psychological and social factor. Shriwastava (2025) found that parental encouragement, along with study habits, significantly influenced students' academic achievement. This suggests that psychological factors do not operate in isolation but are shaped by family and social environments.

This theme demonstrates that psychological factors such as locus of control, self-concept, goal orientation, and self-control play an important role in academic achievement. These factors influence how students perceive learning, respond to challenges, and adopt study behaviors.

Demographic Variables, School Type, and Context in Academic Achievement

Academic achievement among secondary school students is also shaped by demographic factors and the broader institutional context in which learning takes place. Variables such as gender, school type (government and private), and school management influence students' learning opportunities, study behaviors, and psychological development. In the Indian education system, these contextual factors are particularly important due to wide variations in resources, teaching practices, and socio-economic backgrounds across schools.

Gender differences in academic achievement and study habits have been examined in several studies, though findings remain mixed. Some research suggests that female students demonstrate better study habits and more disciplined learning behaviors, while other studies report minimal or no significant gender differences in academic achievement. Sarwar et al. (2009) found that high academic achievers, regardless of gender, exhibited better study orientation and learning strategies than low achievers, indicating that effective study behaviors may be more important than gender alone. These findings suggest that gender differences in achievement may be mediated by study habits and motivation rather than biological or inherent factors.

School type and management play a significant role in shaping students' academic experiences in India. Government and private schools differ substantially in terms of infrastructure, teacher availability, class size, academic monitoring, and parental involvement. Sherafat and Murthy (2016), in their study of secondary and senior secondary students in Mysore City, reported significant differences in academic achievement linked to study habits across different school settings. Their findings suggest that institutional support and learning environment influence how students develop and apply study habits.

Similarly, Sharma and Sharma (2023) examined study habits of higher secondary school students in relation to locale and school context and found that institutional environment affected students' learning behaviors. Schools with better academic support systems and structured learning environments tended to foster more effective study habits among students. This highlights the importance of school management practices in shaping students' academic behaviors and outcomes.

Indian studies have also emphasized the role of family background and parental support in academic achievement. Shriwastava (2025) found that parental encouragement significantly

influenced students' academic achievement when combined with effective study habits. This finding is particularly relevant in the Indian context, where parental involvement varies widely across socio-economic groups and school types. Students studying in private schools often receive greater academic support at home, which may positively influence their study habits and achievement levels.

Psychological factors such as locus of control and self-concept are also shaped by institutional and social contexts. Barman and Mahanta (2022) reported that students' locus of control and self-concept varied across educational settings and significantly influenced academic achievement. Supportive school environments and positive teacher–student interactions were found to strengthen students' internal locus of control and academic confidence.

Furthermore, Praveen (2010) highlighted that self-control, an important psychological attribute, was significantly related to academic achievement among secondary school students. The development of self-control is influenced by both school discipline practices and family environment, indicating that academic achievement is deeply embedded within broader social and institutional contexts. The demographic variables and school management context do not operate independently but interact with students' study habits and psychological characteristics. Differences in school type, management practices, and parental support shape students' learning behaviors, motivation, and beliefs about academic control. These findings underline the importance of examining academic achievement within the specific socio-institutional context of Indian secondary schools.

Synthesis, Research Gap, and Rationale

The synthesis of existing literature clearly indicates that academic achievement among secondary school students is shaped by a combination of behavioral, psychological, and contextual factors. A substantial body of research has consistently established study habits as a strong and reliable predictor of academic performance. Across diverse educational contexts, students who demonstrate effective study behaviors—such as regular study schedules, proper time management, revision practices, and strategic learning—tend to achieve higher academic outcomes. These findings suggest that study habits are practical, learnable, and modifiable behaviors that play a direct role in enhancing academic achievement. At the same time, psychological factors, particularly locus of control, self-concept, self-control, and goal orientation, have been shown to influence students' motivation, persistence, and approach to learning. Students with an internal locus of control and a positive academic self-concept are more likely to take responsibility for their learning, persist in the face of academic challenges, and engage more meaningfully with academic tasks. Together, these studies underline the importance of both behavioral practices and psychological beliefs in shaping students' academic success.

Despite the strong empirical support for both sets of factors, a critical examination of the literature reveals important gaps. A large proportion of existing studies have examined study habits and psychological variables independently, often treating them as isolated predictors of academic achievement. While such studies have provided valuable insights, they offer a fragmented understanding of how these factors operate together in real learning environments. Very few studies have attempted to examine the combined or relative influence of behavioral and psychological factors within a single analytical framework. This limitation is particularly evident in studies conducted at the secondary school level in the

Indian context, where students' learning behaviors and psychological orientations are deeply influenced by institutional structures, family background, and socio-cultural expectations.

Another notable gap in the literature relates to the limited attention given to contextual and demographic variables alongside psychological and behavioral factors. Although some studies have explored gender differences, school type, or parental influence, these variables are often examined separately rather than integrated into a comprehensive model of academic achievement. In the Indian education system, where government and private schools differ significantly in terms of resources, management practices, and academic support, ignoring institutional context may lead to an incomplete understanding of student achievement. Moreover, Class IX students, who are at a crucial transitional stage of schooling, remain relatively underrepresented in empirical research compared to higher secondary or college-level students.

The methodological approaches adopted in earlier studies also reveal a gap. Many studies rely primarily on descriptive or correlational analyses, which, while useful, do not adequately capture the relative predictive strength of different variables. There is a clear need for analytical approaches that not only examine relationships but also assess the extent to which behavioral and psychological factors explain variations in academic achievement when considered together. Such an approach can help identify which factors have a stronger influence and therefore deserve greater emphasis in educational interventions.

In light of these gaps, the present study is both timely and necessary. By integrating study habits as a behavioral factor and locus of control as a psychological factor within a single empirical framework, the study seeks to provide a more holistic explanation of academic achievement among secondary school students. Furthermore, by examining these factors across demographic variables and school management types, the study responds to the need for context-sensitive research within the Indian education system. The rationale of the present study lies in its potential to generate evidence-based insights that can inform classroom practices, school-level interventions, and policy decisions aimed at improving academic achievement. By moving beyond fragmented analyses and adopting an integrated perspective, the study aims to bridge existing research gaps and contribute meaningfully to the understanding of academic achievement at the secondary school level.

Therefore, the objective of this study were as follows.

1. To compare study habits, locus of control, and academic achievement of secondary school students across gender, location and school type.
2. To examine the relationship between study habits, locus of control, and learning outcome among upper primary school students.
3. To analyze the predictive influence of psychological (locus of control) and behavioral (study habits) factors on academic achievement of Class VIII students.

METHODOLOGY

The present study had used a descriptive survey research design on the above variables of study habits, locus of control, and learning outcome among upper primary school students, besides scanning differences along the dimensions of gender and type of school. Upper primary students studying in government, government-aided, and private schools of Birbhum District of West Bengal constituted the population of this study.

The sample for the study consisted of a total of 152 upper primary school students selected by stratified random sampling. The basis for stratification was the type of school and gender, to provide a proportional sampling of the students from different groups. The final sample included 61 students from private schools, 68 students from government schools, and 23 students from government-aided schools for adequate representation across the institutional types.

Table 1: Descriptive Statistics of Study Variables (N = 152)

Variable	Min	Max	M	SD	Skewness	Kurtosis
Study Habit	114	218	171.76	18.54	-0.13	0.53
Locus of Control	52	124	89.31	16.70	0.07	-0.16
Learning Outcome	42	121	79.38	19.38	0.11	-0.60

The table 1 shows the descriptive statistics of Study Habit, Locus of Control, and Learning Outcome taken together suggest that the data tends to be normally distributed and amenable to parametric analysis. The mean score on Study Habit is 171.76 with a standard deviation of 18.54, which suggests that students tend to exhibit moderate to high study habits. The skewness of –0.13 is slightly negative, suggesting that the distribution is slightly skewed but not significantly so. The kurtosis of 0.53 suggests that the distribution is slightly peaked but still within acceptable limits. For Locus of Control, the mean is 89.31 and the standard deviation is 16.70, which indicates moderate dispersion of scores around the mean. The skewness of 0.07 is almost zero, and this is an indication of perfect symmetry in the distribution. The kurtosis of –0.16 is slightly flat, but the variation is very minimal. For Learning Outcome, the mean is 79.38 and the standard deviation is 19.38, which indicates a reasonable spread of scores for academic performance of the students. The skewness of 0.11 is slightly positive, and the kurtosis of –0.60 is slightly flat. However, both are within acceptable limits.

Since all the values of skewness and kurtosis are within the acceptable limits of ±1, it can be said that there is no deviation from normality. Thus, the assumption of normality is met, and parametric tests such as t-test, ANOVA, correlation, and regression analysis can be used in the study.

Findings of the Study

Table 2: Independent Samples t-Test Comparing Study Habit, Locus of Control, and Learning Outcome by Location and Gender (N = 152)

Variable	Category	Group	Mean	SD	t	p
Study Habit	Location	Rural (n = 81)	172.80	17.45	0.74	.459
		Urban (n = 71)	170.56	19.76		
	Gender	Boys	169.71	16.94	-1.52	.132
		Girls	174.28	20.19		
Locus of Control	Location	Rural (n = 81)	89.96	17.34	0.51	.608
		Urban (n = 71)	88.56	16.04		
	Gender	Boys	87.49	15.78	-1.50	.136
		Girls	91.56	17.63		
Learning Outcome	Location	Rural (n = 81)	81.02	18.55	1.12	.266
		Urban (n = 71)	77.51	20.25		
	Gender	Boys	79.55	19.41	0.12	.907
		Girls	79.18	19.48		

The table 2 highlights independent samples t-test was employed to investigate the differences in Study Habit, Locus of Control, and Learning Outcome according to location (rural-urban) and gender. The findings showed that there were no statistically significant differences between rural and urban students on Study Habit, t = 0.74, p = .459. Although rural students (M = 172.80, SD = 17.45) scored slightly higher than urban students (M = 170.56, SD = 19.76), the difference was not statistically significant. Likewise, no significant difference was found for gender on Study Habit, t = -1.52, p = .132. Although girls (M = 174.28, SD = 20.19) scored marginally higher than boys (M = 169.71, SD = 16.94), the difference was not statistically significant.

Regarding Locus of Control, the findings showed that there were no significant differences according to location, t = 0.51, p = .608, or gender, t = -1.50, p = .136. Although rural students (M = 89.96) and girls (M = 91.56) scored slightly higher than their counterparts, the differences were not statistically significant. Likewise, Learning Outcome did not show any significant difference based on location, t = 1.12, p = .266, or gender, t = 0.12, p = .907. Although rural students (M = 81.02, SD = 18.55) performed marginally better than their urban counterparts (M = 77.51, SD = 20.25), and boys (M = 79.55) and girls (M = 79.18) performed equally well, the differences were statistically insignificant. Finally, the results indicate that location and gender are not significant factors in determining study habits, locus of control, and learning outcomes among the students.

Table 3: One-Way ANOVA Comparing Study Habit, Locus of Control, and Learning Outcome across School Types (N = 152)

Variable	School Type	n	Mean	SD	F (2,149)	p	Significant Post Hoc (Tukey)
Study Habit	Govt. School	61	173.38	19.44	1.32	.271	None
	Private	68	172.21	19.37			
	Govt. Aided	23	166.13	12.04			
Locus of Control	Govt. School	61	75.23	11.20	70.07	.000	Govt < Private; Govt < Aided
	Private	68	99.65	13.01			
	Govt. Aided	23	96.09	11.39			
Learning Outcome	Govt. School	61	86.98	22.84	11.90	.000	Govt > Private; Govt > Aided; Private > Aided
	Private	68	76.96	13.42			
	Govt. Aided	23	66.39	15.85			

The table 3 showed that there were no significant differences in Study Habit among different types of schools, F(2,149) = 1.32, p = .271. Although the scores of Study Habit for Government school students (M = 173.38, SD = 19.44) were slightly higher than those of Private (M = 172.21, SD = 19.37) and Government-Aided school students (M = 166.13, SD = 12.04), the differences were not significant. This finding implies that students from different types of schools have relatively similar study habits.

However, there were significant differences in Locus of Control among different types of schools, F(2,149) = 70.07, p < .001. The Tukey post hoc test showed that the scores of

Government school students (M = 75.23, SD = 11.20) were significantly lower than those of Private (M = 99.65, SD = 13.01) and Government-Aided school students (M = 96.09, SD = 11.39). This finding implies that there are large differences in locus of control orientations among students from different institutional settings.

Likewise, Learning Outcome revealed a significant difference among the types of schools, F (2,149) = 11.90, p < .001. Tukey post hoc analysis revealed that Government school students (M = 86.98, SD = 22.84) scored significantly higher than Private (M = 76.96, SD = 13.42) and Government-Aided school students (M = 66.39, SD = 15.85), and Private school students also scored significantly higher than Government-Aided school students. The findings from the study indicate that, despite the consistency in study habit among the types of schools, there are significant differences in locus of control and learning outcomes.

Table 4: Relationship among Study Habit, and Learning Outcome

Correlation

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Study Habit	1										
2. Comprehension	.662**	1									
3. Concentration	.686**	.496**	1								
4. Task Orientation	.462**	.250**	.230**	1							
5. Study Sets	.351**	.049	.202*	.292**	1						
6. Interaction	.422**	.073	.111	.219**	.110	1					
7. Drilling	.437**	.084	.259**	.070	.128	.386**	1				
8. Support	.717**	.321**	.300**	.057	-.004	.244**	.222**	1			
9. Recording	.563**	.286**	.352**	.274**	.109	.394**	.352**	.345**	1		
10. Language	.191*	.172*	.067	.176*	.098	.051	.256**	-.030	.108	1	
11. Learning Outcome	.195*	-.009	.028	.258**	.229**	.234**	.240**	.020	.348**	.090	1

**significant at 0.01 level
*Significant at 0.5 level

The correlation analysis between Study Habit factors and Learning Outcome indicates some selective but significant correlations. The total Study Habit score has a small but significant positive correlation with Learning Outcome (r = .195, p < .05), which indicates that students who have better study habits tend to have slightly better academic performance. Although the correlation is small, it indicates that general study habits are positively related to learning outcomes.

Among the individual dimensions, Recording has the highest positive correlation with Learning Outcome (r = .348, p < .01). This suggests that students who are actively involved

in note-taking and recording of information have a tendency to perform better in academics. Likewise, Task Orientation (r = .258, p < .01), Drilling (r = .240, p < .01), Interaction (r = .234, p < .01), and Study Sets (r = .229, p < .01) have moderate and significant positive correlations with Learning Outcome. These results suggest that goal-oriented and systematic study, practice, engagement, and preparation techniques are very important for improving academic performance. Conversely, Comprehension (r = –.009), Concentration (r = .028), and Support (r = .020) do not have significant correlations with Learning Outcome. Language has a weak and non-significant correlation (r = .090).

Table 5: Relationship among Locus of Control, and Learning Outcome

Variables	1	2	3	4	5
1. Locus of Control	1				
2. External – Chance/Fate	.889**	1			
3. External – Environment	.870**	.798**	1		
4. Internal Locus of Control	.891**	.652**	.601**	1	
5. Learning Outcome	-.163*	-.188*	-.218**	-.070	1

**significant at 0.01 level
*Significant at 0.5 level

The correlation analysis reveals that there are strong links between the dimensions of Locus of Control. The total Locus of Control is very highly correlated with External – Chance/Fate (r = .889, p < .01), External – Environment (r = .870, p < .01), and Internal Locus of Control (r = .891, p < .01), suggesting that these dimensions make a significant contribution to the overall construct. Moreover, the two external dimensions are strongly correlated with each other (r = .798, p < .01), implying that there is conceptual similarity between attributing outcomes to chance/fate and environmental factors. Internal locus of control is moderately positively correlated with both external dimensions (r = .652 and r = .601, p < .01), suggesting that students tend to possess mixed attributional tendencies.

In terms of Learning Outcome, the total Locus of Control has a negative and significant correlation (r = –.163, p < .05), suggesting that those who score higher on the overall locus of control tend to score slightly lower on learning outcomes. On the dimensions, the External – Environment dimension has the strongest negative correlation with Learning Outcome (r = –.218, p < .01), followed by External – Chance/Fate (r = –.188, p < .05). This implies that those who tend to see their academic outcomes as being the result of external factors like environment, luck, or fate tend to have lower learning outcomes. On the other hand, Internal Locus of Control has a negative but non-significant correlation with Learning Outcome (r = –.070, p > .05), suggesting that there is no significant relationship between the two.

Regression

Table 6: Multiple Regression Analysis Predicting Learning Outcome from Study Habit and Locus of Control (N = 152)

Predictor	B	SE B	β	t	p	95% CI for B
Constant	61.367	16.536	—	3.711	< .001	[28.691, 94.043]
Study Habit	0.203	0.083	.194	2.444	.016	[0.039, 0.366]
Locus of Control	-0.188	0.092	-.162	-2.042	.043	[-0.369, -0.006]

Model Summary:
$R = .253$, $R^2 = .064$, Adjusted $R^2 = .051$, $F(2, 149) = 5.098$, $p = .007$

Multiple regression analysis was used to determine if Study Habit and Locus of Control are significant predictors of Learning Outcome. The overall model was significant, $F(2, 149) = 5.098$, $p = .007$, meaning that the two variables together are significant predictors of learning outcome. The overall model produced an R of .253, with an R^2 of .064 and an adjusted R^2 of .051. This indicates that the two variables together account for 6.4% of the variance in learning outcome. Although the result is statistically significant, the variance explained is small, suggesting that other factors are also at play in influencing learning outcomes.

Looking at the individual predictors, Study Habit was found to be a significant positive predictor ($B = 0.203$, $\beta = .194$, $t = 2.444$, $p = .016$). This means that for every unit of increase in the study habit score, there is a corresponding increase of 0.203 units in the learning outcome, while controlling for locus of control. The confidence interval (0.039 to 0.366) does not include zero, thus further affirming its significance. This result implies that good study habits are important contributors to good academic performance.

On the other hand, Locus of Control was discovered to be a significant negative predictor ($B = –0.188$, $\beta = –.162$, $t = –2.042$, $p = .043$). The negative sign shows that a positive relationship exists between locus of control scores (as measured in this study) and learning outcomes, such that higher locus of control scores are related to lower learning outcomes. The confidence interval (–0.369 to –0.006) also excludes zero, thus verifying the finding's significance. The findings suggest that while both predictors are significant in learning outcome, the positive contribution of study habit is slightly greater than the negative contribution of locus of control. Nevertheless, the overall explanatory power of the model is not strong.

DISCUSSION

The current study investigated the relationship between study habits, locus of control, and learning outcomes among class IX students, and also explored the differences based on gender, location, and type of school. The results of the study have significant implications for understanding the relative importance of behavioral and attributional variables in determining academic achievement at the secondary level of education. One of the most important findings of the current study is that study habit was found to be a significant positive predictor of learning outcome. The correlation analysis indicated a small but significant positive relationship between overall study habit and learning outcome, and the regression analysis also supported the fact that study habit is a significant predictor of academic achievement. However, it is important to note that although the result is statistically significant, the magnitude of the result is small, and the overall model accounted for only 6.4% variance. This indicates that although study habit is an important predictor, it is not the only predictor of academic achievement.

The current result is in line with previous research that showed the significant impact of structured study behavior on academic achievement. Research carried out by Bhat and Bhat (2018), Kumar (2018), Odiri (2015), and Nirmala and Rao (2014) showed that organized study behavior, time management, and disciplined learning have a significant positive impact on academic achievement. More recent research conducted by Mishra (2022), Sharma and Sharma (2023), Arya and Sharma (2023), Singh (2025), and Shriwastava (2025) in India further supports that organized study behavior and parental support have a significant positive impact on academic achievement in students.

Contrary to traditional expectations, locus of control had a small but significant negative relationship with learning outcome, and it was identified as a significant negative predictor in the regression analysis. This suggests that higher scores on the locus of control scale (as measured in this study) were associated with slightly lower learning outcomes. The external dimensions of chance/fate and environment were negatively correlated with learning outcome, suggesting that students who view academic outcomes from an external perspective tend to perform slightly lower.

This finding partially supports the traditional theoretical stance of Rotter (1966), who defined locus of control as a determinant of expectancy and behavior. Nevertheless, the empirical literature has presented mixed findings. A thorough review by Findley and Cooper (1983) suggested that the relationship between locus of control and academic achievement is frequently weak or inconsistent.

At the dimensional level, the current study revealed that recording, task orientation, drilling, interaction, and study sets were significantly related to learning outcome. This confirms the views of Kalechstein et al. (1989) and Sarwar et al. (2009), who suggested that goal-oriented strategies and active engagement approaches are more directly related to academic achievement than passive or unstructured learning.

Likewise, Bassey et al. (2019) and Praveen (2010) reported that the role of locus of control in achievement is less significant when behavioral factors such as study habits are considered. The current results are consistent with this view, as while locus of control is statistically significant, its predictive power is less than that of study habits, and its contribution to explained variance is small. What is particularly noteworthy is that internal locus of control was not significantly related to learning outcome, indicating that the mere belief in one's control over events is not a direct precursor to better academic performance unless accompanied by sound study habits.

Analysis of demographic variables also provided some more information. There were no significant differences in study habit, locus of control, and learning outcome on the basis of gender and location. This indicates that rural-urban context and gender are not significant in differentiating students in terms of these variables at the secondary level. These results are in line with the findings of Kaur and Pathania (2015), and Olaitan and Omomia (2014), who found that there were minimal differences in study habits between genders when students were placed in similar academic settings.

Significant differences were found among different types of schools. Though there were no significant differences in study habit among government, private, and government-aided schools, there were large differences in locus of control and learning outcome. Government school students scored significantly lower on locus of control than private and aided school students. This result is in line with Barman and Mahanta (2022), who proposed that the institutional environment has an impact on students' self-perception and control orientation.

More importantly, the results showed that the learning outcomes of students in government schools were significantly better than those in private and government-aided schools. This result contradicts the common perception that attending a private school is a guarantee for better academic performance. It implies that contextual variables like teacher responsibility, examination-orientedness, or motivational contexts could play different roles in different

settings. The role of similar contextual variables has been stressed by Singh (2011) and Yadav (2020), who argued that well-disciplined academic settings and reflective activities can contribute to better performance despite inequalities in resources.

The results obtained from the study make it abundantly clear that study habits are a more reliable and consistent predictor of learning outcome than locus of control among secondary school students. Although the results show some statistical significance, their practical utility is less compared to well-structured behavioral engagement. The low value of R^2 also indicates that academic performance is a complex phenomenon that is affected by other variables like quality of teaching, parental support, intelligence, and socio-economic background.

The study therefore highlights the importance of educational interventions that focus on the development of procedural study skills, task orientation, and active learning strategies. Enhancing behavioral competencies could be more directly beneficial for improving academic outcomes than efforts to simply change students' psychological beliefs about control.

CONCLUSION

The current study investigated the relationship between study habits, locus of control, and learning outcomes among Class IX students, including variations according to gender, geographical location, and type of school. The results of the study offer valuable information regarding the factors that affect learning outcomes at the secondary level of education. The most significant implication of the study is that study habits positively and significantly affect learning outcomes. Students who adhered to proper study habits, organized themselves properly, practiced consistently, and remained task-oriented performed well in their academic activities. Although the overall impact was small, study habits were identified as a significant predictor of learning outcomes. This suggests that proper and disciplined learning behavior helps significantly in enhancing learning outcomes.

Locus of control, on the other hand, had a small negative correlation with the learning outcome. Those who had the tendency to trace their learning outcomes to external sources like luck or environment performed slightly lower. Internal locus of control had a small correlation with academic performance. This indicates that mere beliefs about control will not help in enhancing performance unless it is accompanied by proper study habits.

The study also found that gender and location (rural or urban) had no significant influence on study habits, locus of control, and learning outcomes. Boys and girls, as well as rural and urban students, performed in a similar manner. However, differences were found in the case of school types. Students from government schools performed better in learning outcomes than students from private and government-aided schools.

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Conflict of Interest

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