

Study Habit of Higher Secondary Level Students and its Relation with their Academic Achievement

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Abstract

The present study was conducted to analyze study habits of higher secondary level students with respect to gender, residential zone and school type and also to investigate its relation with students' academic achievement. 803 students, who have just passed Madhyamik Examination were randomly selected from fourteen (14) Bengali medium schools under three categorical variables namely gender (boys & girls), residential zone (urban, rural & semi urban) and school type (Government, Government aided & self-financed). Study Habit Inventory (SHI) was prepared and used for the said purpose. In the present study no significant difference was observed among the students in their study habits with respect to gender ($t = 0.640$, $p = .522$), residential zone ($F = 1.469$, $p = 0.231$) and school type ($F = 0.058$, $p = 0.944$). It was also found that there was no significant interaction effect of gender, residential zone and school type on students' study habit ($F = 0.389$, $p > 0.05$). Significant positive correlation ($r = 0.234$, $p < 0.01$) was found between study habits of the students and their academic achievement. Also, study habit of the students was found to be a significant predictor of their academic achievement as the overall regression procedure resulted in a $R = 0.234$, $R^2 = 0.055$, $F = 46.295$, $p < 0.01$. It is quite evident that good study habit is necessary for students' academic achievement as well as lifelong learning process.

Keywords: Higher secondary students, Study habit, Academic achievement.

Introduction

Among the correlates of academic achievement, study habit is one of the important research variables to the psychologists and educationists. Students learn in different ways. Some students read a topic or book several times to understand it, some students read different subjects according to the fixed routine, some students read only in the night, some students learn more only when they read lying on the bed and some students learn more through interaction with others. Again, some may learn when they are in mood to do so. It is also seen that some students learn better through drilling. Therefore, we notice different kinds of study behaviours among students. In fact, study habit is very important characteristic of all human beings who are 'being educated' and 'are educated'. As much study habit is important for higher academic achievement of students as well as it is important for their fruitful use of leisure time [(Mukhopadhyay & Sansanwal (1983)]. Many research works were carried out on study habits of students, its relationship with their academic achievement and study habit as predictor of academic achievement. Lawrence (2014) concluded that Government school students had high level of study

habits than other school students and stated to pay direct attention to the creation and implementation of strategies for improving study habits among students. Salve (2014) in a comparative study obtained that higher secondary level students of Arts, Science & Commerce streams differed significantly in their habits. Siahi (2015) observed a positive and significant relationship between study habits and academic achievement. Singh & Manipal (2015) found significant relationship between Government and private, male and female secondary school students' study habits and academic achievement. Verma (2015) investigated the relationship between study habit and achievement of higher secondary school students and reported that there was a strong impact of study habit on academic achievement of the students. Kumud & Rajesh (2016) also observed the similar findings in case of secondary school students. Looyeh *et al.* (2017) observed a significant correlation between academic performance and study habits. Again, Capuno *et al.* (2019) concluded that students' attitudes and study habits were significant factors for their performance in mathematics. Singh (2019) found no significant difference between male and female students on different measures of study habit coming from urban and rural background on different measures of study habit. Uche (2020) revealed that group study habit and note taking were significantly related to students' academic achievement in chemistry. Enekwechi & Ezeanya (2021) focused on study habit as predictor of secondary school students' achievement in chemistry and also argued that giving regular assignments and project works could improve their study habits. Gahir, Sahu & Sahoo (2022) in their study observed that study habit was positively related in enhancing the academic achievement of both boys and girls at secondary level. Gupta & Khanuja (2022) found significant difference in study habits of higher secondary students. Das & Vidyamritananda (2023) in their study observed that there was no significant difference between boys and girls in their study habits. This study also revealed that there was no significant difference between the lower middle class and middle class in their study habits, but a significant difference was noticed between the lower middle class and upper middle class as well as between the middle class and upper middle class in their study habits. Muhammad *et. al.* (2023) showed that study habits significantly predicted academic achievement and concluded that environmental conditions had an impact on study habits of the students. Fernando & Sydney (2023) in their study showed that study habits were vital to pupil's academic achievement and also no relationship was found between age and study habits. Vishwanatha & Begum (2023) stated that the students who had good study habits had higher academic achievement and vice versa.

The researchers were aware of the fact that there might have some other variables namely general intelligence, learning environment, parental encouragement in children's academic activities, socio-economic status, time spent for studies, method of teaching, availability of teaching-learning materials, students' aptitudes, attitude towards school, intrinsic & extrinsic motivation etc. which were regarded as correlates of academic achievement of the secondary level students. But in the present study the researchers conceived the influence of study habit for the sample drawn through the process of randomization. The researchers, thus, decided to further investigate in to the relationship of academic achievement (the criterion variable) of secondary level students with their study habit (predictor variable). In the present study academic achievement scores indicate total scores obtained by the students in Madhyamik Examination, 2023 following normal classroom instructions and syllabi as prescribed by the West Bengal Board of Secondary Education for languages, sciences and social sciences. On the other hand, study habits scores indicate total scores obtained by the students in nine different study behaviours namely comprehension, concentration, task orientation, sets, interaction, drilling, supports, recording and language.

Objectives of the study

1. To compare study habits of the students with respect to gender, residential zone and type of school.
2. To study the relationship between academic achievement of the students and their study habit.
3. To develop a regression equation of academic achievement on study habit.
4. To study interaction effect, if any, on the basis of students' residential zone, school type and study habit.

Hypotheses of the study

H₀₁: There are no significant differences in students' study habit scores in respect to

- A. Gender
- B. Residential Zones
- C. School type

H₀₂: There is no significant relationship between students' study habit and academic achievement.

H₀₃: Students' study habit cannot significantly predict their academic achievement.

H₀₄: There is no significant interaction effect of gender, residential zone and school type on study habit of the students.

Sample

All the students of class XI of West Bengal were selected as population for the present study. From the list of recognized Bengali medium secondary schools in West Bengal 14 schools (10 schools for final study and 4 schools for pilot study) were selected randomly from Kolkata, Howrah, Hooghly and Burdwan districts. On the basis of institutional approval, the researchers selected 803 students following random sampling method.

Table 1: Demographic characteristics of the sample

Categorical Variables	Sub-category	No. of Sample
Gender	Boys	436
	Girls	367
Residential Zone	Urban	496
	Rural	207
	Semi-urban	100
School Type	Government	24
	Government aided	767
	Private	12
	Total (N)	803

Tool used

A Study Habit Inventory (SHI) was adapted in regional language following the original scale prepared by Mukhopadhyay & Sansanwal (1983). The study habit inventory (SHI) comprising of 52 test items with corresponding responses arranged in a 5-point Likert type scale with options like 'always', 'frequently', 'some times', 'rarely', 'never'. A student had to indicate his/her position simply by ticking cross(x) in any one of the cells. The test responses were scored and total marks obtained by the students

in Madhyamik Examination, 2023 were also collected from the respective School authorities and considered as their academic achievement score.

Techniques followed

Pilot Survey

A sample comprising 200 students of class XI (Boys-120, Girls-80) were selected from 4 Bengali medium secondary schools. The pilot survey was conducted with the following objectives:

- Rectification of instructions before finalization.
- Determination of appropriateness of the selected tool.
- Determination of Internal Consistency and Reliability Coefficients of the test items.

Internal consistency

Internal consistency of the Study Habit Inventory(SHI) was checked by correlating the scores of each sub-test with the total test scores.

Table 2: Relationship between sub test areas and total test scores of the students (N=200)

Sub test areas	Values of 'r'
Comprehension	0.813*
Concentration	0.593*
Task Orientation	0.621*
Interaction	0.633*
Drilling	0.558*
Supports	0.629*
Recording	0.494*
Language	0.562*

Note: * Significant at 0.01 level of significance.

Reliability

The reliability coefficient of the whole Study Habit Inventory was determined using split half method as suggested by the original author. The reliability coefficient is 0.83 which is fairly high indicating appreciable score consistency and thereby the reliability of the adapted version.

Statistical technique adopted

Data analysis was carried out with the help of descriptive statistics, independent sample t-test, Pearson Product Moment Correlation, One way & Two way ANOVA and regression analysis using Software Packages for the Social Sciences(SPSS) version 20.0. Also the graphical representations of descriptive statistics were done using SPSS version 20.0.

Scoring Procedure

The test responses were scored in accordance with the principles and directions given in the original test manual. 4,3,2,1,0 & 0,1,2,3,4 were the respective scores of the positive and negative items for the responses of "Always", "Frequently", "Sometimes", "Rarely" & "Never" respectively.

Norms of the test

In the present study, the percentile norms were developed for the adapted version of Study Habit Inventory (SHI) through determination of P₂₅ and P₇₅ of the scores obtained by 803 students. For the present Study Habit Inventory, the percentile points were calculated as: P₂₅ = 121 and P₇₅ = 143. From the calculated percentile points, three criteria were determined to classify the students under three categories of their study habit. The percentile points calculated for Study Habit Inventory are presented in Table 4.

Table 4: Percentile range and corresponding study habit scores

Scale	Sample distribution	Study Habit Scores	No. of Students	Level of Study Habit
Study Habit Inventory	Upper 25% (above P ₇₅)	Above 143	186	High
	Middle 50% (P ₂₅ – P ₇₅)	121-143	426	Moderate
	Lower 25% (below P ₂₅)	Below 121	191	Low
Total			803	

Analysis and interpretation

Descriptive Statics

The raw scores on study habit obtained by the sample, N=803 were arranged in frequency distributions. The mean, median, mode and standard deviation were computed. The statistics have been shown in Table 3.

Table 3: Descriptive Statistics

Independent Variable	Mean	Median	Mode	Range	Standard Deviation
Study Habit	131.57	132.00	127.00	105.00	15.61

The descriptive statistics in Table 3 for study habit of 803 students reveals that the mean, median and mode are almost same. So, the distribution was found to be nearly normal. Frequency graph of the study habit scores of the students (N=803) has been given in Figure 1.

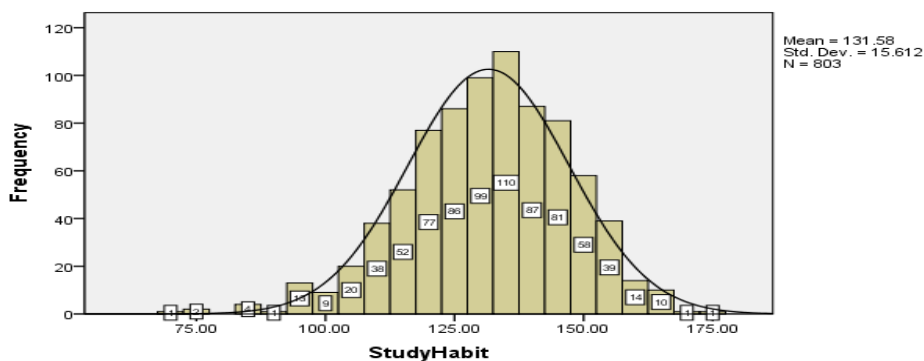


Figure 1: Frequency graph of study habit scores

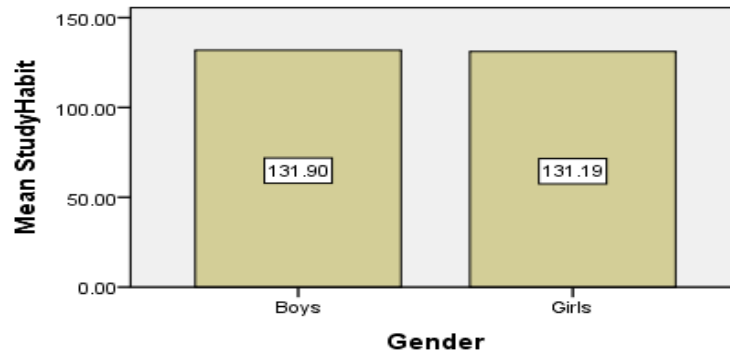
Testing of Null Hypothesis H_{01-a}:

Table 5: Result of independent sample t-test

Testing of Hypothesis	Dependent Variable	Independent Variables	N	Mean	Standard Deviation	t-value	df	Remark
H_{01-a}	Study Habit	Boys	436	131.8991	15.47096	0.640	801	P value not significant at 0.05 level(p=0.522)
		Girls	367	131.1907	15.79000			

From the above table(Table-5), the result of independent sample t-test reveals that the calculated t-value (0.640) for H_{01-a} is not significant at 5% level(p=0.522). So, there exists no 'significant' difference between boys (Mean=131.90) and girls (Mean=131.19) in their study habit. The null hypothesis, **H_{01-a}** is accepted. This result is also presented graphically in Figure 2.

Figure2: Mean study habit scores in relation to gender



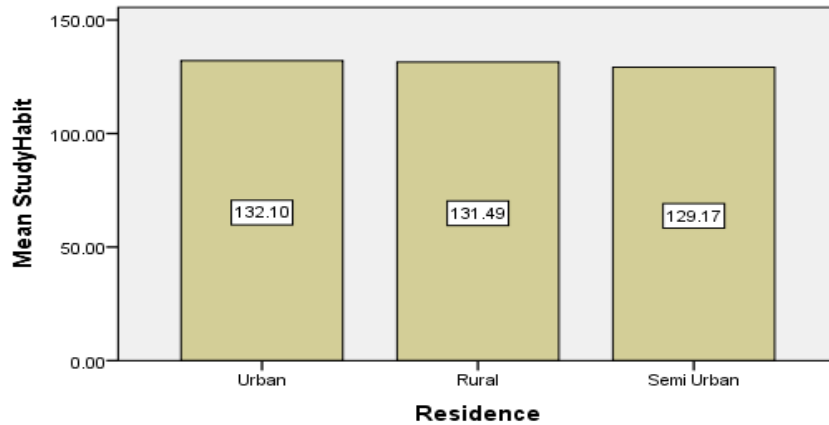
Testing of Null Hypothesis H_{01-b}:

Table 6: Result of One way ANOVA based on Residential Zone

Testing of Hypothesis	Sources of Variance	Sum of Squares	df	Mean Square Variance	F	Remark
H_{01-b}	Between Groups	715.007	2	357.504	1.469	P value not significant at 0.05 level (p=0.231)
	Within Groups	194755.185	800	243.444		
	Total	195470.192	802			

The result of one way ANOVA(Table 6) reflects that, the calculated value of F (1.469) for H_{01-b} is not significant at 5% level (p=0.231). The null hypothesis **H_{01-b}** is, therefore, accepted. So, it can be interpreted that, there is no 'significant' difference among the students of urban (Mean=132.09), rural (Mean=131.49) and semi urban (Mean=129.17) regions with respect to study habit. This result is also represented graphically in Figure 3.

Figure 2: Mean Study Habit Scores in relation to residential zones



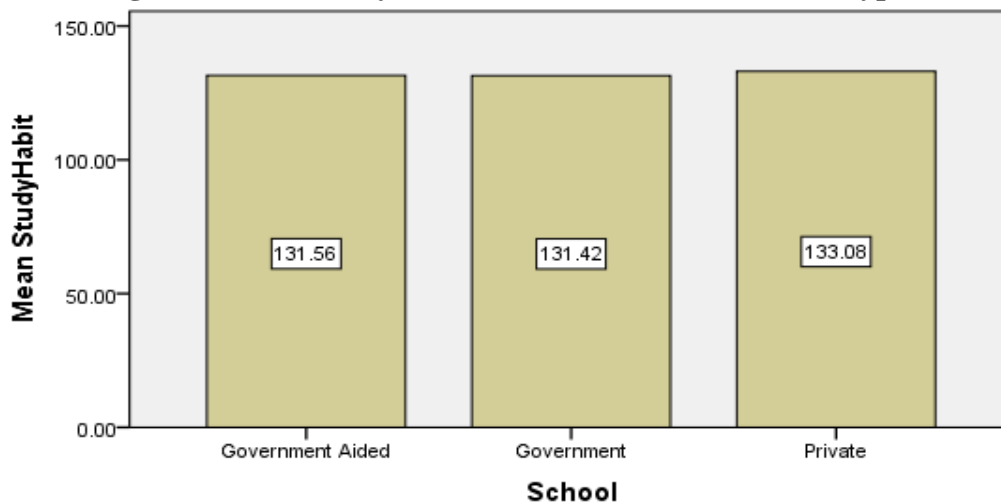
Testing of Null Hypothesis H_{01-c}:

Table 7. One way ANOVA result based on School Type

Testing of Hypothesis	Sources of Variance	Sum of Squares	df	Mean Square Variance	F	Remark
H _{01-c}	Between Group	28.159	2	14.079	.058	p value not significant at 0.05 level (p=0.944)
	Within Group	195442.033	800	244.303		
	Total	195470.192	802			

The result of one way ANOVA (Table 7) indicates that the calculated value of F (.058) for H_{01-c} is not 'significant' at 5% level (p=0.944). The null hypothesis H_{01-c} is, therefore, rejected. So, it can be interpreted that, there is no 'significant' difference among the students of Government (Mean=131.42), Government aided (Mean= 131.56) and private (Mean=133.08) schools with respect to study habit. Also this result is presented graphically in Figure 4.

Figure 4: Mean study habit scores in relation to school type



Testing of Null Hypothesis H₀₂:

Table 8. Relationship between Study Habit and Academic Achievement.

Testing of Hypothesis	Method	N	'r'	Sig.
H ₀₂	Pearson Product Moment Correlation	803	0.234	0.000*

*Significant at 0.01 level of significance

The result of the relationship between study habit of the students and their academic achievement (Table 8) reflects that, the correlation coefficient between the scores of study habit and academic achievement (r=0.234) is significant at 0.01 level of significance. The null hypothesis H₀₂ is, therefore, rejected and the alternative hypothesis is accepted. So it can be interpreted that there is a positive & significant relationship between study habit of the students and their academic achievement. Therefore, study habit of secondary level students plays a positive role in their academic achievement.

Testing Null Hypothesis H₀₃:

Table 9: Model Summary of Regression Analysis

Model	R	R square	Adjusted R Square	F	Sig.
1	0.234	0.055	0.053	46.295	0.000*

* Significant at 0.01 level of significance

From Table 9 it is clear that overall regression model resulted in R² of 0.055, F(1,801)=46.295, p=0.000 statistically predicts academic achievement of the students. Now the results of regression analysis for the prediction of academic achievement of the students (N=803) is summarized in Table 10.

Table 10: Results of Regression Coefficients with predictor variable

Predictor Variable	B value	't'	Sig.
Study Habit	1.688	6.804	0.000*

Intercept = **268.642**

*Significant at 0.01level of significance.

Substituting the value of B from Table 10 in the equation $Y = ax + b$, the regression equation for prediction of academic achievement(Y) of the students from study habit (x) takes the form as given below:

$$Y = 1.688x + 268.642$$

In view of this result of significant prediction of academic achievement (criterion variable) by study habit (predictor variable), the null hypothesis H₀₃ is rejected and the alternative hypothesis viz. 'Study habit of the students significantly predicts their academic achievement ' is accepted.

Testing of Null Hypothesis H₀₄:

Table 11. Summary of Factorial Analysis of Variance (ANOVA)

Sources	Type III Sum of Squares	df	Mean Square	F	Sig.
Main Effect					
Gender (A)	50.927	1	50.927	0.208	0.649
Residence (B)	346.750	2	173.375	0.707	0.493
School (C)	76.536	2	38.268	0.156	0.856
First order Interaction Effect					
Gender*Residence (A x B)	353.361	2	176.680	0.720	0.487
Gender*School (A x C)	499.107	2	249.554	1.018	0.362
Residence*School (B x C)	718.361	4	179.590	0.732	0.570
Second order Interaction Effect					
Gender*Residence*School (A x B x C)	190.938	2	95.469	0.389	0.678
Error	192990.745	787	245.223		

Main Effects

The main effects shown in Table 11 of the categorical variables namely gender (A), residence (B) & school type (C) on study habit of the students are reported below:

First Main Effect (A)

The result reflects that the calculated value of $F(1,787) = 0.208$ and $p = 0.649$. So, the first main effect of gender on study habit is not significant at 0.05 level of significance.

Second Main Effect (B)

The second main effect of residence on study habit is not significant at 0.05 level of significance as the calculated values of $F(2,787) = 0.707$ & $p = 0.493$.

Third Main Effect (C)

The third main effect of school on study habit is not significant at 0.05 level of significance as the finding reflects the calculated values of $F(2,787) = 0.156$ & $p = 0.856$.

Interaction Effects

The interaction effects will be shown as first order interaction effects [(A x B), (A x C) & (B x C)] and second order interaction effect [A x B x C].

a) First order interaction effect (A x B)

Table 11 reveals a non-significant interaction effect between gender (A) and residence (B) on study habit of the students. For this, the $F(2,787)$ value was found to be 0.720 which is not significant at 0.05 level of significance ($p = 0.487$).

b) First order interaction effect (A x C)

Table 11 indicates a non-significant interaction effect between gender (A) and school (C) on study habit of the students. For this, calculated $F(2,787)$ value = 1.018 which is not significant at 0.05 level of significance ($p = 0.362$).

c) First order interaction effect (B x C)

Table 11 indicates a non-significant interaction effect between residence (B) and school (C) on study habit of the students. For this, calculated $F(4,787) = 0.732$ which is not significant at 0.05 level of

significance ($p=0.570$).

d) Second order interaction effect (A x B x C)

Table 11 indicates a non significant interaction effect among gender (A), residence (B) and school (C) on study habit of the students. For this, the $F(2,787)$ was found to be 0.389 which is not significant at 0.05 level of significance ($p=0.678$).

These results (Table 11) indicate that H_04 is accepted and so it can be concluded that, there is no significant interaction effect of gender, residence and school type of the students on their study habit.

Conclusion

Statistical analysis of academic achievement and study habit scores of the higher secondary level students reveals that study habit acts positively to favour students' academic achievement. The researchers found a positive & significant correlation ($r=0.234$, $p=0.000$) between study habit of the students and their academic achievement. But this finding does not get support from the study of Lawrence (2014) where the researcher found that there was no significant relation between study habits and academic achievement of higher secondary students. In the present study, study habit of the students was found to be a significant predictor ($R^2=0.055$) of their academic achievement. Also in the present study, the differences among the scores of study habit of the students with respect to three categorical variables namely gender, residential zone and school type were found to be statistically insignificant. These findings get supports from the studies conducted by Jafari et al.(2019), Gahir et al.(2022), Maiyo (2015), Uche (2020), Singh & Mahipal (2015), Vishwanatha & Begum(2023), Gupta & Khanuja (2022), Looyeh et al.(2017), Kumud & Rajesh (2016), Santos & Villarín (2023), Singh (2019), Enekeuchi & Ezeanya (2021) and Verma (2015). Development of good study habit among the school students is very much essential. It is because the entire school education prepares the foundation of higher education. As such in order to develop a good study habit among the secondary school students, importance should be given on teachers' initiative to facilitate teaching-learning session, motivating students to take important class notes and engage in library works, providing students with learning materials, fixing routine for covering various school subjects before examination, fixing target for completing academic tasks within the stipulated time period, making students engaged in discussion with peers and teachers, drilling, providing congenial environment for study in home and school, developing habit for studying news papers, magazines etc., enhancing concentration on finishing assigned tasks, comprehension of the subject matter, enhancing language proficiency and studying the same topic until and unless the learner is able to comprehend the topic. The present study suggests that, higher secondary level students need good study habit to be successful in academic subjects.

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