



ORIGINAL CONTRIBUTION

## Relationship of Study Skills and Academic Achievement of University Students

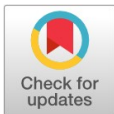
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**Abstract**— The topic of research was the relationship between study skills and academic achievement of university students. The study's research questions were; (i) what types of study skills are possessed by the university students? (ii) How do study skills vary among students in terms of gender, specialization, and levels of study? (iii) Is there any relationship between study skills and academic achievement of university students? The current study followed the non-experimental method and cross-sectional research design and was conducted at the university level. The undergraduate students were targeted in this research. Since most studies are conducted at the school level, the sample of study incorporated 400 BS students by using a stratified random sampling technique. The researcher will use the unique combination of study skills and academic achievement of university students, and a questionnaire was developed as the instrument of the survey. The questionnaire consisted of two sections: demographics and study skills. The study skills contained 40 items with a 4-point Likert scale. The validity and reliability  $r(0.813)$  of the questionnaire was checked by conducting a pilot study on 50 students. The collected data were analyzed by using descriptive statistics and a t-test. The results showed that students usually used study skills, and there is no significant relationship found between study skills and academic achievement of students.

**Index Terms**— Study Skills, Academic Achievement, University Students, Learning Environment

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### Introduction

In all over the world, learning has been discovered to be a highly complex problem, specifically in the education and psychology fields. Factors affecting the performance of students in terms of academic achievement have been the concern of researchers, psychologists, and teachers to [Wahyuni et al. \(2020\)](#). One of the important factors influencing academic achievement is study habits. Whether students study systematically and efficiently is called study habits. The result of good study habits is positive academic achievement, while inefficient or poor study habits result in academic failure (Research Clue, 2014).

According to [Bawa \(2020\)](#), the student's academic achievement can be positively or negatively affected depending upon the learning environment. One of the factors affecting the environment can be finances. Financial constraints can be a deteriorating factor in the academic achievement of students. But the important factor is the study habits of the students, which affect their academics ([Sarirah & Chaq, 2019](#); [Tus et al., 2020](#)). Habits, like not taking notes, not attending classes, not preparing their assignments, can harm the academic achievement of the student ([Tus et al., 2020](#)). So good study habits can lead to better academic achievement ([Cresencio, 2018](#); [Okeke & Ukoh, 2020](#)). These habits include planning/ placing a definite timetable and taking organized notes ([Bozkurt et al., 2020](#)). Study habits

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have been studied in Nigeria as well (Almulla et al., 2018; Sinmileoluwa et al., 2020). For example, lack of academic motivation, low self-esteem, poverty, and poor study habits have emerged as important factors of academic achievement (Nuthana et al., 2009).

The research study carried out by Morahan-Martin (1999) discovered different study habits in male and female students. Male students take different courses like logic and science whereas female students take simpler subjects. So they make the male and female students adopt different study habits. So better academic achievement requires students to schedule their time, prepare a plan for their study, and so on. So simply better academic performance is the function of proper skills and habits. It is necessary to investigate its nature as study habits are important functions in learning.

Failing to recognize good study habits is one of the important factors in low academic achievement. Therefore, good study habits play an important role in the process of learning, which is reflected in the academic achievement of students (Ehsan & Sultana, 2020; Sajeevanie, 2018). Keeping in view its importance, this study was conducted to find out if there is a relationship between students' study habits and their academic performance.

### **Research Questions**

The underlying were research questions of the research study; **Q1.** What types of study skills are possessed by university students?

**Q2.** How do study skills vary among students in terms of gender, specialization, and levels of study?

**Q3.** Is there any relationship between study skills and academic achievement of university students?

### **Research Objectives**

1. To find out the study habits of university students.
2. To study the variance of study habits among students in terms of gender, specialization, and levels of study.
3. To find out the relationship of study skills with academic achievement of university students.

### **Significance of the Study**

This study will be helpful for administrators, faculty, teachers, and students and also beneficial for all undergraduates' students of universities. This study will guide the administrators, teachers, and students to improve the wellbeing and levels of interpersonal relationships among students; academic stress must be reduced to the barest minimum. Our educational institutions should take into account basic human differences in their studying, thinking, etc., to seek better means of individualized instruction for more effective studying.

### **Review of Literatur**

#### **Research Hypothesis**

It is hypothesized that:  $H_1$ : There are zero study skills possessed by the university students

$H_2$ : There is no significant variation among university students in terms of gender, specialization, and levels of study

$H_3$ : There is no profound connection between study skills and academic achievement of university students

Study skills have been elaborated in many research projects. In many research studies, motivational techniques, skills of time management, skills of note-taking, skills of organization, and skills of study habits have been discussed as common study skills (Allen, 2003). These study skills can be effectively used by the students for a deeper understanding of their learning (Reza et al., 2017). In this way, they become skilled and able to perform a learning activity effectively Cottrell (2003b,a). consequently, students are independent learners.

#### **Components of Study Skills**

Some of the major components of study skills are discussed in the following paragraphs.

##### **Textbook Reading:**

Reading a textbook requires understanding different material in various ways (Kress & van Leeuwen, 2020). It provides the capacity for students to become independent or dependent in processing the material (Lai et al., 2019). For instance, for reading comprehension, cognitive ability is the ability to integrate text information with listeners' or readers' knowledge (Hosseini et al., 2013).

### **Taking Notes:**

Taking notes by the students in the classroom is a common skill used by the students. Noting down the main points of a piece of paper is the characteristic of this skill (Clinton, 2019). Some problems are associated with this skill. For example, students may not understand the material while taking notes. Furthermore, it may become a source of frustration for students. These problems can be overcome through the planning of getting much from teaching sessions (Kerka, 2006). In this way, the students can make corrections and get a lot from classroom discussions (Helyer, 2015).

### **Preparing a test:**

Preparing a test by the students is an important stage of academic achievement. Students. Preparing for the test requires material and mental preparation, which are important for effective preparation (Darling-Hammond & Hylar, 2020). This enables the students to come across emotional experiences, which can have an important effect on the performance of students in a test (Seli & Dembo, 2019).

### **Concentration:**

The quality of concentration is one of the most strenuous tasks in performing studies. It is the quality of keeping the mind on what one reads or studies (Clinton, 2019). The inability of students to concentrate on their studies can lead to distraction and reduce their learning abilities (Shim & Lee, 2020). Lack of concentration is one of the main hurdles in the academic process (Parks-Stamm et al., 2010).

### **Time Management:**

Time management is referred to as the techniques of planning, management, and efficient time usage (Hassanbeigi et al., 2011). Lack of time management can lead to many problems on the part of students (Mendezabal, 2013). It indicates that students do not assign much time to studies (Hassanbeigi et al., 2011). Specifically, the problem is more when the material is not in the native language (Harboe & Mullen, 2007).

### **Research Design**

The current study followed the non-experimental method and cross-sectional research design that was endeavoring to study the relationship among variables. A self-made questionnaire was applied in a survey among students to examine the relationship of independent variables to the dependent variable.

### **Population**

The population of this study encompassed students from all departments in the University of Haripur.

### **Sample**

The sample of study incorporated 400 BS students from all departments in the University of Haripur. The stratified random sampling technique was used to select the students from all departments, i.e., 227 male and 173 female students were selected.

### **Research Tool**

A questionnaire was adopted from the website [www.uhcl.edu/consrlling](http://www.uhcl.edu/consrlling) services, which were freely available on the internet. By reviewing the study skills inventory (SSI) comprised of 64 items. These skill areas were concentration, information processing (IP), Motivation, Self-Testing (ST), Study Aids (SA), Test Strategies (TS), Time Management (TM), and Writing. These areas were explored to know the study habits of students. The four-point Likert scale was used, i.e., Never to Always.

The questionnaire contained two sections, first is related to demographic information of students that comprised of gender, CGPA for assessing academic achievement, semester, and department. The second section included close-ended items that evaluate the study habits of students.

### Pilot Testing

The pilot testing allowed the researcher to make the tools reliable before administering the actual sample of the study to produce better results. The questionnaire was piloted on a non-sample of the study among 30 students. The Cronbach Alpha reliability Coefficient ( $r$ ) was used to check the reliability of the research instrument. The SSI questionnaire  $r$  (0.813) showed strong reliability and was ready to collect the data from the actual sample.

### Data Collection

The researcher personally visited each department of the university and collected the desired information from the sampled respondents. Clear instructions were prepared for the respondents, and they were asked to feel free in their responses as data will be kept confidential and only be used for research purposes.

### Data Analysis

The collected data were analyzed by using SPSS. The following statistical analysis was used to achieve the objectives of the research.

### Description of Statistical Analysis:

The descriptive statistics, Pearson correlation, and t-test were used.

### Results and Discussion

The questionnaire and a test were constructed, which were then used for data collection. The collected data were then analyzed in the following tables.

### Data Analysis

Table I  
Descriptive Statistics for the Use of Study Skills by the Students

	<i>N</i>	Mean	<i>SD</i>
Time Management	400	1.7495	.70298
Concentration	400	1.9470	.63372
Study Aids	400	1.8450	.64172
Test Strategies	400	2.0120	.65661
Information Processing	400	1.9565	.64253
Motivation	400	1.9930	.64993
Self-Testing	400	2.0200	.68963
Writing	400	1.9165	.64589
Valid N (Listwise)	400		

The table I depicts descriptive statistics in which the time management (Mean = 1.7495,  $SD$  = 0.70298) means that students usually use time management strategies, concentration (Mean = 1.9470 and  $SD$  = 0.63372) means that students usually concentrate, study aids (Mean = 1.8450, and  $SD$  = 0.64172) means that students usually follow study aids, test strategies (Mean = 2.0120, and  $SD$  = 0.65661) means that students usually follow test strategies, information processing (Mean = 1.9565, and  $SD$  = 0.64253) means that students usually process information, motivation (Mean = 1.9930, and  $SD$  = 0.64993) means that students usually motivate, self-testing (Mean = 2.02 and  $SD$  = 0.69) means that students usually use self-test of themselves and writing (Mean = 1.9165, and  $SD$  = 0.65) means that students usually focus on writing. The highest mean for self-testing (2.0200) and the lowest is for time management (1.7495).

Table II  
Correlation between Time Management and CGPA of Students

		CGPA	Time Management
CGPA	Pearson Correlation	1	-.028
	Sig. (2-tailed)		.580
	N	400	400
		CGPA	Concentration
CGPA	Pearson Correlation	1	-.006
	Sig. (2-tailed)		.905
	N	400	400
		CGPA	Study Aids
CGPA	Pearson Correlation	1	.065
	Sig. (2-tailed)		.196
	N	400	400
		CGPA	Test Strategies
CGPA	Pearson Correlation	1	.087
	Sig. (2-tailed)		.083
	N	400	400
		CGPA	Information Processing
CGPA	Pearson Correlation	1	.048
	Sig. (2-tailed)		.339
	N	400	400
		CGPA	Motivation
CGPA	Pearson Correlation	1	.111*
	Sig. (2-tailed)		.026
	N	400	400
		CGPA	Self-Testing
CGPA	Pearson Correlation	1	.025
	Sig. (2-tailed)		.623
	N	400	400
		CGPA	Writing
CGPA	Pearson Correlation	1	-.005
	Sig. (2-tailed)		.927
	N	400	400

The results illustrated that there is a negative non-significant relationship found between time management and CGPA ( $r(400) = -0.028, p = 0.580 > (0.05)$ ). The results illustrated that there is a negative non-significant relationship found between concentration and CGPA ( $r(400) = -0.006, p = 0.905 > (0.05)$ ). The results illustrated that there is a positive non-significant relationship found between study aids and CGPA ( $r(400) = 0.065, p = 0.196 > (0.05)$ ). The results showed that there is a positive non-significant relationship found between test strategies and CGPA ( $r(400) = 0.087, p = 0.083 > (0.05)$ ). The results demonstrated that there is a positive non-significant relationship found between information processing and CGPA ( $r(400) = -0.048, p = 0.339 > (0.05)$ ). The results demonstrated that there is a positive significant relationship found between motivation and CGPA ( $r(400) = 0.111, p = 0.026 < (0.05)$ ). The results revealed that there is a positive non-significant relationship found between self-testing and CGPA ( $r(400) = 0.025, p = 0.623 > (0.05)$ ). The results revealed that there is a negative non-significant relationship found between writing and CGPA ( $r(400) = -0.005, p = 0.927 > (0.05)$ ).

Table III  
Descriptive Statistics for the Use of Study Skills by the Students

Gender	N	Mean	SD	SE	Mean	t-test	Sig.
TM	Male	227	1.7709	.67708	.04494	.698	.486
	Female	173	1.7214	.73663	.05600		

Not Significant at 0.05 level.

The table III showed the comparison between male and female regarding the use of time management in which male ( $N = 227, Mean = 1.7709, SD = 0.67708$  and  $SE Mean = 0.04494$ ) has use more time management than female ( $N = 173, Mean = 1.7214, SD = 0.73663$  and  $SE Mean = 0.05600$ ) as depicted by  $t$ -value (0.698) and  $p$ -value (0.486 > (0.05) which found non-significant.

Table IV  
Comparison between Males and Females Regarding the Concentration on Studies

Gender	N	Mean	SD	SE	Mean	t-test	Sig.
CM	Male	227	1.9040	.67793	.04500	-1.559	.120
	Female	173	2.0035	.56752	.04315		

Not Significant at 0.05 level.

The table IV exhibited the comparison between male and female regarding the concentration in which male ( $N = 227$ , Mean = 1.9040,  $SD = 0.67793$  and  $SE$  Mean = 0.04500) has less concentration on studies than female ( $N = 173$ , Mean = 2.0035,  $SD = 0.56752$  and  $SE$  Mean = 0.04315) as depicted by  $t$ -value (-1.559) and  $p$ -value ( $0.120 > (0.05)$ ) which found non-significant.

Table V  
Comparison between Males and Females Regarding the use of Study Aids

Gender	N	Mean	SD	SE	Mean	t-test	Sig.
SA	Male	227	1.7789	.67253	.04464	-2.375	.018
	Female	173	1.9318	.58962	.04483		

Not Significant at 0.05 level.

The table V revealed the comparison between male and female regarding the use of study aids in which male ( $N = 227$ , Mean = 1.7789,  $SD = 0.67253$  and  $SE$  Mean = 0.04464) has less use of study aids than female ( $N = 173$ , Mean = 1.9318,  $SD = 0.58962$  and  $SE$  Mean = 0.04483) as depicted by  $t$ -value (-2.375) and  $p$ -value ( $0.018 < (0.05)$ ) which found significant.

Table VI  
Comparison between Males and Females Regarding the use of Test Strategies

Gender	N	Mean	SD	SE	Mean	t-test	Sig.
TS	Male	227	1.9744	.71139	.04722	-1.311	.190
	Female	173	2.0613	.57522	.04373		

Not Significant at 0.05 level.

The table VI presented the comparison between male and female regarding the use of test strategies in which male ( $N = 227$ , Mean = 1.9744,  $SD = 0.71139$  and  $SE$  Mean = 0.04722) has less use of test strategies than female ( $N = 173$ , Mean = 2.0613,  $SD = 0.57522$  and  $SE$  Mean = 0.04373) as showed by  $t$ -value (-1.311) and  $p$ -value ( $0.190 > (0.05)$ ) which found non-significant.

Table VII  
Comparison between Males and Females regarding the use of Information Processing

Gender	N	Mean	SD	SE	Mean	t-test	Sig.
IP	Male	227	1.9639	.67465	.04478	.263	.793
	Female	173	1.9468	.59957	.04558		

Not Significant at 0.05 level.

The table VII demonstrated the comparison between male and female regarding the use of information processing in which male ( $N = 227$ , Mean = 1.9639,  $SD = 0.67465$  and  $SE$  Mean = 0.04478) has use information processing more than female ( $N = 173$ , Mean = 1.9468,  $SD = 0.59957$  and  $SE$  Mean = 0.04558) as portrayed by  $t$ -value (0.263) and  $p$ -value ( $0.793 > (0.05)$ ) which found non-significant.

Table VIII  
Comparison between Males and Females regarding the Motivation

Gender	N	Mean	SD	SE	Mean	t-test	Sig.
MA	Male	227	2.0247	.66606	.04421	1.117	.265
	Female	173	1.9514	.62762	.04772		

Not Significant at 0.05 level.

The table VIII presented the comparison between male and female regarding the motivation in which male ( $N = 227$ , Mean = 2.0247,  $SD = 0.66606$  and  $SE$  Mean = 0.04421) has more motivation than female ( $N = 173$ , Mean = 1.9514,  $SD = 0.62762$  and  $SE$  Mean = 0.04772) as illustrated by  $t$ -value (1.117) and  $p$ -value ( $0.265 > (0.05)$ ) which found non-significant.

Table IX  
Comparison between Males and Females regarding the Self-Testing

Gender	N	Mean	SD	SE	Mean	t-test	Sig.
SM	Male	227	2.0167	.70011	.04647	-.108	.914
	Female	173	2.0243	.67762	.051522		

Not Significant at 0.05 level.

The table IX exhibited the comparison between male and female regarding the self-testing in which male ( $N = 227$ , Mean = 2.0167,  $SD = 0.70011$  and  $SE\ Mean = 0.04647$ ) has use less self-testing than female ( $N = 173$ , Mean = 2.0243,  $SD = 0.67762$  and  $SE\ Mean = 0.05152$ ) as depicted by  $t$ -value (-0.108) and  $p$ -value ( $0.914 > (0.05)$ ) which found non-significant.

Table X  
Comparison between Males and Females Regarding the use of Writing Skills

W	N	Mean	SD	SE	Mean	t-test	Sig.
MA	Male	227	1.9181	.66929	.04442	.055	.955
	Female	173	1.9145	.61575	.04681		

Not Significant at 0.05 level.

The table X showed the comparison between male and female regarding the use of writing skills in which male ( $N = 227$ , Mean = 1.9181,  $SD = 0.66929$  and  $SE\ Mean = 0.04442$ ) has more writing skills than female ( $N = 173$ , Mean = 1.9145  $SD = 0.61575$  and  $SE\ Mean = 0.04681$ ) as depicted by  $t$ -value (0.055) and  $p$ -value ( $0.955 > (0.05)$ ) which found non-significant.

## Discussion

The current study investigated the relationship between study skills and academic achievement of university students. For this purpose, a self-made questionnaire with a four-point Likert scale was used by reviewing relevant literature on study skills. The different statistics were used to achieve the desired objectives of the research. The descriptive statistics showed study skills used by university students. Most of the male, as well as female students, used varied study skills, but they showed self-testing study skills mostly used by them. The results found relevant with Lawrence (2014); Md Rahim & Meon (2013); Nair & Kulkarni (2020) who investigated the relationship between study skills and academic performance of students. They found that many students included both males and females, used various study skills that helped them in their learning process.

In addition, the descriptive statistics also found that overall, students 'usually' used study skills, and these results found consistent with (Arora, 2016; Hashemian & Hashemian, 2014; Kamoru & Ramon, 2017; Maiyo & Siah, 2015; Odiri, 2015) who also verified that students used study habits but they proposed the time frame of using these skills. The results of these studies depicted that students do not use study skills regularly, but instead, they usually use them.

The current study's correlation results showed no noteworthy relationship between time management and academic achievement, concentration with CGPA, study aids with CGPA, test strategies with academic achievement, information processing with CGPA, self-testing with CGPA, and writing with academic achievement. These results were found non-significant and other researchers like Alimohamadi et al. (2018); Fahiminia et al. (2016) also support the evidence. Many of the study habits factors that were analyzed in SPSS were found non-significant with the academic achievement of students.

In contrast to the aforementioned results, the correlation between motivation and academic achievement was found statistically significant. These results are in line with Garner-O'Neale & Harrison (2013), who in their study illustrated that motivation is the factor that is significantly correlated with the academic achievement of students. The motivation was related to both extrinsic as well as intrinsic.

The  $t$ -test was applied to observe any gender difference but results depicted that all study skills except 'study aids' were found statistically non-significant. It means that males and females use study skills in the same range except for study aids which are mostly used by female students. The results found consistent with Nolan (2015); Nwosu et al. (2018), who other than correlation, used a  $t$ -test to draw a comparison of male and female students about the usage of study skills, and they found that there is no significant difference in gender.

The linear regression found the non-significant effect of study skills on the academic achievement of students. The results were in contrast with Khan (2016); Torabi et al. (2014), who found a significant effect, but Ahmed et al. (2018); Abdullahi et al. (2018) investigated the impact of study skills on the academic achievement of students. The results demonstrated a non-significant impact of study skills on the academic achievement of students.

## **Conclusion**

Based on the findings of the study, the following conclusions can be made: It can be concluded that most of the students were likely to assess their performance. This habit may be developed in the online teaching and learning process during COVID-19 (Finding 5.2.1).

There was no significant relationship found between time management and CGPA, concentration and CGPA, study aids and CGPA, test strategies and CGPA, self-testing and CGPA, writing, and CGPA. This is due to the pandemic that has a serious effect on the study skills of students. Most of the students were relaxed from studies due to the closure of all institutions (Findings 5.2.2 to 5.2.5 and 5.2.8 to 5.2.9).

In contrast to the aforementioned conclusion, the findings showed a significant relationship between information processing and CGPA and motivation with CGPA. These results were found significant due to the consistency in studies of BS students. The online teaching during pandemic regularly engaged students in their studies that may promote their motivation and information processing (Findings 5.2.6 and 5.2.7).

There was no significant difference between males and females regarding time management, concentration on studies, test strategies, information processing, motivation, self-testing, and writing. Both male and female students were using these study habits on the same frequency (Findings 5.2.10 to 5.2.11 and 5.2.13 to 5.2.17).

There was a significant difference between male and female students using study aids. Female students were using more study aids comparatively than the male because they have shown keen interest in studies and used varied aids that may help them in their studies (Finding 5.2.12). The motivation was the single factor that significantly affected academic achievement than other study habits. It can be concluded that students' motivation may be triggered by their teachers or parents that have significantly affected their performance (Finding 5.2.18).

## **Recommendations**

The following recommendations were drawn based on the conclusion of the study. It may be recommended that teachers provide such facilities that promote students' study habits. It will give them benefits for effective teaching and learning process.

It may be suggested that teachers use varied teaching techniques that promote good study habits. Most of the studies concluded that good study habits have a significant relationship with the academic achievement of students than those with poor study habits.

Home assignments and quizzes may be used for promoting the information processing skills of students. The use of positive reinforcement may lead to enhance students' motivation for studies.

It may be recommended that authorities provide additional support and guidance in improving the study habits of students. Therefore, university personnel should devise additional programs to strengthen the students' study skills. It is suggested that university authorities may provide support and initiative such programs that aid students in acquiring learning skills.

Motivation was the single factor that promoted the academic performance of students. So, it is recommended that university teachers may use varied positive reinforcement in the classroom as well as incentives may be given to students that build-up study habits in students.

Teachers and parents may be collaboratively working together to develop students' study habits that promote their academic performance.

## **Limitations and Future Research Directions**

This study has the limitation of being conducted at the university level. It is suggested that future researches may employ the relationship between self-concept and study habits. Moreover, the research may include that how study habits can affect the cognitive skills of students at various levels.



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