

Original Research Article

Study Habits and Academic Performance of Science Education Undergraduates in Rivers State University Nigeria

ABSTRACT

Aims: This study investigated study habits and academic performance of science education undergraduates in Rivers State University.

Survey Design: Descriptive survey design was adopted.

Place of Study: Department of Science Education, Faculty of Education Rivers State University, Port Harcourt, Nigeria between May and November, 2021

Methodology: The sample comprised 182 science education undergraduates from first year to final year. The instruments were Science Undergraduates Study Habits Inventory and Cumulative Grade Point Average. The study habits inventory was subjected to face and content validation by two lecturers in Department of Science Education and one lecturer in Measurement and Evaluation and reliability coefficient established by Alpha Cronbach method to be 0.76. Mean and standard deviation were used to answer research questions while hypotheses were tested at 0.05 level of significance using independent t-test and Spearman's Rank Order Correlation Coefficient.

Results: Results of this study showed that science education undergraduate exhibit bad study habits. Also, there was no significant difference between male and female undergraduates' study habits while a significant difference between first and final year undergraduate study habits was found. Further evidence revealed a significant relationship between study habits and academic performance of science education undergraduates.

Conclusion: It was recommended that lecturers should expose undergraduate mostly the first year undergraduates to good study habits and provision be made for inclusion of study habits as a topic in the general studies course for first year students.

Key words: *study habits, science education, undergraduates, academic performance*

1. INTRODUCTION

The ultimate aim of teaching and learning is to utilize available resources and achieve optimum understanding of concepts by students and improved academic performance in examinations. Students have a greater role to play in this process by taking time to study lessons taught in the class room in addition to information from other academic materials and ensure that the information is stored in such a way that it can be easily retrieved from the memory when necessary. The practices adopted by students during studying when repeated over a period of time constitute the study habits. Several definitions have been offered to the term "study habit". Azikiwe (1998) [1] for instance, define study habits as regular tendencies and practices that one depicts during the process of gaining information through learning while [2] consider study habits as approaches a learner employs during his personal study time in order to achieve mastery of the subject. Study habit is consistent in nature and portrays habitual practices for studying which can be good or bad and effective or ineffective [3].

Good or effective study habits facilitate retention of concept and enable students to spend their time more productively and efficiently while bad or ineffective study habits inhibit understanding of concepts. Good study habits complement the effort of a good teacher and assist students to learn more, gain mastery of topics and ensure good performance in examinations. Without good study habits, effective study cannot

be achieved and the effort of qualified teachers and available learning materials will be rendered futile. In support of this assertion, [4] maintained that students who fail to develop good habits are bound to face various problems and possibly develop negative attitude to study which may lead to poor performance. [5], however, outlined the following bad study habits such as inadequate time allocation for studies, delay or non-completion of homework and assignments, defective examination strategies, defective note-taking, poor concentration, and lack of teacher consultation

Based on the relevance in teaching learning process, of students' study habits have been identified in different studies. For instance, [2] assessed study habits of students from 1st, 2nd, and 3rd year in Rajdhani college, Delhi University and determine how study patterns differs with percentage marks scored by students, where they live, and effect of change of environment. The results of the study showed that most of the students do not ideally follow effective study habits. Further evidence from the findings revealed that the average time spent by majority of the students in self-study per week is less, majority of students do not revise their lecture same, students sometimes collaborate in the assignments even if they are marked as individuals, and change of environment affects the grades of the students which accounts for the reason why majority of the first year students have their first semester percentage is low. Numan and Hasan (2017) [3] for instance, investigated the effect of study habits on test anxiety and academic achievement of undergraduate students in university of Lahore using 198 undergraduates as sample. Findings of the study revealed a significant positive relationship between study habits and academic achievement. Test anxiety was negatively correlated with academic achievement and study habits. Further evidence showed that students having effective study habits experienced low level of test anxiety and performed better academically than the students having ineffective study habits while male undergraduate displayed better study habits and excel more academically than boys.

Ogoemeka (2013) [6] investigated study habits skills components as predictors of academic performance among teacher's trainee in Nigeria. Findings revealed a positive correlation between study habit skills and academic performance. Further evidence, indicated that homework and assignment were potent predictors of the academic performance of the students. The study also revealed that the best predictor variable of the academic performance of the second-year students was study period procedures while it was homework and assignment for the third-year students. Significant sex differences in five, out of the eight study habit components skills, all in favour of females was also found. Bulent, Hakan& Aydin (2015) [7] carried out a study to determine the effect of undergraduates' study skills on academic achievement and significances in terms of gender and Department of undergraduates studying in three different departments of school of education Yildiz Technical University, Istanbul, Turkey. Results of the study revealed a positive correlation between study skills and academic achievement. Significant differences in terms of gender and departments were established. Kaur & Pathama (2015) [8] examined study habits and academic performance among the late adolescents' college students of home science in Plampur, Himachal Pradesh. The results suggested significant relationship between academic achievement and study habits. High achieving adolescents were found to perform better in comprehension, task orientation and recording than the low achieving adolescents. The factors affecting the study habits were age, family, income and education which were significantly related. Siahi & Miyo (2015) [9] examined relationship between study habits and academic performance of students in a case study carried out at Spice higher secondary school in India. The results of the study revealed a positive relationship between study habits and academic achievement.

Chand (2013) [10] explored study habits of secondary school students in relation to type of school and type of family in India and discovered that there was no significant difference between the different study habit components of secondary school students from nuclear and joint family. Government secondary school students were significantly better in-home environment and planning of subjects than their counterparts in private schools while private secondary school students were significantly better than their counterpart in government school on preparation for examination. There was no significant difference between government and private secondary school students on reading and note taking, concentration, and school environment components of study habit. Aryal, Shrestha, Subba & Subba, (2016) [4] in their study on developing study habits inventory for secondary level students in Nepal found noticeable similarities and differences in various issues related to study habits among Nepalese government and private schools such as studying in silent and interruption free room while most of the Nepalese students spend two to three hours daily for house related works.

Sakirudeen, (2017) [11] investigated the relationship between study habits and academic performance of secondary school students in mathematics in Uyo Local Education Council of Akwa Ibom State, Nigeria and found a significant relationship between note taking, students' use of library, time allocation for study and students' academic performance in mathematics. Santha, Kumari and Chamundeswari (2015) [12] investigated achievement, motivation, study habits and academic achievement of students at secondary school level. The results of the study showed a significant correlation between achievement, motivation, study habits and performance of students. Central and matriculation board school students were found to be significantly better in achievement motivation and study habits compared to state board school students. Significant difference was found between students in different categories of schools and gender pertaining to achievement motivation, study habits and academic achievement. Girls in all three systems of education were found to be significantly better in achievement motivation and study habits compared to boys in the same school.

Charles–Organ (2015) [13] focused on gender influence on study habits of mathematics students' achievement in senior secondary schools in Port Harcourt Local Government Area of Rivers State. Findings of the study revealed a significant positive relationship between students' study habits and their performance in mathematics. It was further discovered that female students tend to have better study habits than their male counterparts. Agbaje & Alake (2014) [14] investigated students' variables as predictors of secondary school students' academic achievement in science subjects in Ikwerre Local Government Area of Ekiti State and found that students' variables which include study habits, attitude and interest of students in science subjects are better predictors of students' performance in science subjects while gender had no influence on students' performance.

1.6 Significance of the Study

The results of this study will assist lecturers in science education to have better understanding of the study habits of science education undergraduates. The knowledge of these habits and their effects on performance will further provide basis for lecturers to fashion out appropriate academic support and guidance to improve their habits and enhance understanding of concepts. Science undergraduates stand the chance of benefiting from this support and guidance to improve their performance in examination to meet the demands of their parents and the society.

Statement of the Problem

The recurrent poor performance of students in science subject in certificate examinations in Nigeria has been a major source of concern to stakeholders in the education sector considering the relevance of science and technology in the development of the nation. Students' academic performance in science subjects is greatly influenced by the quality of science teaching which involves the application of acquired proficiencies in knowledge by science teachers and blending these proficiencies with appropriate teaching strategies to foster students' understanding of concepts. However, recent trend in universities and colleges of education shows that science undergraduates who are prospective secondary school science teachers perform below average in Cumulative Grade Point Average (CGPA) which is counterproductive to the realization of the goals and objectives of science teacher education in Nigeria (National Policy on Education, 2013). Attempts aimed at providing solution to this problem have triggered a lot of researches which focused on study habits of undergraduates without considering science education undergraduates. Informed by the need to fill this gap in knowledge, this study investigates science education undergraduates' study habits and relates it to academic performance in Rivers State University.

1.3 Purpose of the Study

This study was carried out to investigate study habit and academic performance of science education undergraduates in Rivers State University. Specifically, the study tends to provide answers to the following questions:

1.4 Research Questions

The following questions were developed to guide the research:

1. What are the study habits of science education undergraduates in Rivers State University?
2. What are the study habits of male and female science education undergraduates in Rivers State University?
3. What is the relationship between study habits and academic performance of science education undergraduates in Rivers State University?

1.5 Hypotheses

The following null hypotheses were formulated to answer the research questions.

- H0₁.** There is no significant difference between the study habits of male and female science education undergraduates in Rivers State University.
- H0₂** There is no significant relationship between study habits and academic performance of science education undergraduates in Rivers State University.

2. METHODS AND MATERIALS

The study adopted descriptive survey design which went further to correlate study habits and academic performance of science education undergraduates in Rivers State University. The population and sample were 148 science education undergraduates comprising of 58 male and 90 female undergraduates in the Department of Science Education. The instruments were "Science Undergraduates Study Habit Inventory" (SUSHI) and Undergraduates Cumulative Grade Point Average (CGPA) adapted from Osa-Edoh, G. I. & Alutu (2012) [15], Congos (2010) [16] and modified by the researchers. The inventory considered frequency of the use of study habits on a four-point scale - Always(A), Frequently(F), Sometimes(S), and Rarely(R). The instrument was validated by two Science Education lecturers and one Measurement and Evaluation Lecturer while the reliability coefficient was determined by Alpha Cronbach method to be 0.83. Mean and standard deviation were used to answer research question and hypotheses tested at 0.05 level of significance using z-test. Items with mean response of 2.5 and above in the questionnaire were accepted and considered as study habit while those below were rejected.

3. Results

3.1 Research Question 1

What are the study habits of science education undergraduates in Rivers State University?

From Table 1, science education undergraduates have the following bad habits with mean response of 2.5 and above: study without following plan of activities 3.21, have no time allocation to studies 2.93, review lecture notes during test and examinations only 3.10, observe no breaks at intervals to recall what has been studied 3.40, rarely underline main points in textbook 2.74 and never set questions and answer them while studying 2.92, lack concentration while studying 2.56, easily distracted during studies 2.83. Furthermore, the good study habits were: take notes in class and during studies at home 2.64, and study in quiet and conducive place 2.59.

Table 1. Mean response and standard deviations of the study habits of science education Undergraduates on study habits in Rivers State University.

S/N	Study habits	Mean	SD	Decision
1	Study without following plan of activities	3.21	0.30	Accepted
2	Have no time allocation to studies	2.93	0.56	Accepted
3	study both difficult and simple topics in chemistry.	2.00	1.34	Rejected
4	Review lecture notes during test and examinations only	3.10	0.33	Accepted
5	Have no goal what should be covered in a study session	2.23	1.2	Rejected
6	Observe no breaks at intervals to recall what has been studied	3.40	0.45	Accepted
7	Rarely underline main points in textbook and while studying.	2.74	0.34	Accepted
8	Study without checking can be remembered.	2.30	0.41	Rejected
9	take notes in class and during studies at home	2.64	0.65	Accepted
10	Never set questions and answer them while studying.	2.92	0.61	Accepted
11	Lack concentration while studying	2.56	0.57	Accepted
12	Easily distracted during studies	2.83	0.32	Accepted
13	Be serious with Studies only during examinations	2.31	0.33	Rejected
14	study in the library always	2.18	0.42	Rejected
15	study in a quiet and conducive environment	2.59	0.56	Accepted

3.2 Research Question 2

What are the study habits first and final year science education undergraduates in Rivers State University?

From Table 2 both first and final year science undergraduates take notes in class and during studies at home 2.75 and 2.56, study in a quiet and conducive environment 2.69. Only first year science undergraduates study without

following plan of activities 3.56, have no time allocation to studies 3.40, review lecture notes during test and exams only 3.48, have no goal what should be covered in a study session 2.57, rarely underline main points in textbook and while studying 2.93, never set questions and answer them while studying 3.21, lack concentration while studying 2.62, easily distracted during studies 2.95. However, only final year undergraduates' study both difficult and simple topics 3.40, Observe no breaks at intervals to recall what has been studied 2.48, Study without checking can be remembered 2.74.

Table 2. Mean response and standard deviations of 1st and final year science education undergraduates on study habits in Rivers State University.

s/n	Study habits	1 st year			4 th year		
		Mean	SD	Decision	Mean	SD	Decision
1	Study without following plan of activities	3.56	0.65	Accepted	2.40	0.64	Rejected
2	Have no time allocation to studies	3.40	0.34	Accepted	1.89	0.54	Rejected
3	study both difficult and simple topics.	1.66	0.56	Rejected	2.54	0.66	Accepted
4	Review lecture notes during test and exams only	3.48	0.87	Accepted	2.39	0.56	Rejected
5	Have no goal what should be covered in a study session	2.57	0.52	Accepted	2.22	0.39	Rejected
6	Observe no breaks at intervals to recall what has been studied	2.48	0.72	Rejected	3.78	0.98	Accepted
7	Rarely underline main points in textbook and while studying	2.93	0.43	Accepted	2.34	0.78	Rejected
8	Study without checking can be remembered.	2.01	0.63	Rejected	2.74	0.54	Accepted
9	Take notes in class and during studies at home	2.75	0.26	Accepted	2.56	0.61	Accepted
10	Never set questions and answer them while studying.	3.21	0.43	Accepted	2.34	0.34	Rejected
11	Lack concentration while studying	2.62	0.52	Accepted	2.37	0.28	Rejected
12	Easily distracted during studies	2.95	0.41	Accepted	2.47	0.63	Rejected
13	Be serious with Studies only during examinations	2.33	0.96	Rejected	2.93	0.45	Rejected
14	study in the library always	1.65	0.32	Rejected	2.54	0.27	Accepted
15	study in a quiet and conducive environment	2.69	0.63	Accepted	2.48	0.43	Accepted

3.3 Research Question 3

What is the relationship between undergraduate study habits and academic performance?

From Table 3, the mean CGPA and study habits of science undergraduates in Rivers State University are: 0.82 and 2.32, 1.64 and 2.61, 2.53 and 2.82, 3.49 and 2.53 respectively.

Table 3: Science education undergraduate' study habits and academic performance

S/N	CGPA	No. of undergraduates	% of undergraduates	Mean CGPA	Mean Study Habits
1	0.0 - 1.00	30	16.48	0.82	2.32
2	1.10 - 2.00	40	57.14	1.64	2.61

3	2.10 - 3.00	110	2.98	2.45	2.82
4	3.1 - 4.0	5	2.75	3.49	2.53

3.5 Hypothesis 1

There is no significant difference in study habits between male and female science education undergraduates in Rivers State University.

Table 4: z-test analysis of study habits of male and female science education undergraduates' in Rivers State University.

From the table above, the calculated value of $z = 6.514$ is greater than the table value. Therefore, the null hypothesis which states that there is no significant difference in study habits between male and female science education undergraduate in Rivers State University is rejected. This implies that there is a significant difference in study habits between male and female science education undergraduate in Rivers State University.

Level	N	\bar{X}	Sd	df	St.error	t-cal.	t-crit	Sig.level	decision
Male	72	2.72	0.3842	180	0.0672	6.514	1.960	0.05	Rejected
Female	110	2.13	0.3200						

3.7 Hypothesis 2

There is no significant relationship between study habits and academic and academic performance of science education undergraduates in Rivers State University.

Table 5: Spearman's Rank Order Correlation Coefficient (rho) analysis of study habits and academic performance of science undergraduates.

From Table 5 the calculated value of $\rho = 0.8364$ is greater than the table or critical value. Therefore, the null hypothesis which states that there is no significant relationship between study habits and academic performance of science education undergraduates in Rivers State University is rejected. This infers that there is a significant relationship between study habits and academic performance of science education undergraduates in Rivers State University.

Variable	Scores					Df	$\sum d^2$	rho cal.	rho crit.	Decision
Performance	2.32	2.61	2.82	2.53	3.27	180	6	0.8364	0.1946	Rejected
Study habit	0.82	1.64	2.53	3.49	4.23					

3. RESULTS AND DISCUSSIONS

Evidence from the results of this study revealed that science education undergraduates study without having plan of activities, have no time allocation to studies, review lecture notes during test and examinations only, observe no breaks to recall what has been studied, rarely underline main points in textbook and while studying, never set questions and answer them while studying, lack concentration while studying, and are easily distracted during studies. These habits are bad or poor study habits (Table 1). These findings corroborate the results of [2] where similar bad study habits were discovered among secondary school students in A teacher with bad study habit cannot properly guide students to develop good study habits. These bad study habits are negative indicators of the quality of our prospective secondary school Science teachers.

Gender consideration in this study revealed a significant difference in study habits between male and female science education undergraduates (Table 4). Male science education undergraduates exhibit better study habit than their female counter parts. This finding agrees with the results of [6] where sex differences in five, out of the eight study habit components skills, all in favour of females was found but disagree with that of [13] who found that female students tend to have better study habits than their male counterparts as well as the report of [3] ([17] that females exhibit better study habits and excel more academically than their male counter parts.

There was a significant relationship between study habits and academic performance of science education undergraduate (Table 5). The results of this study corroborate the results of other studies on the effect of study habits on academic performance of undergraduates by [6], [3] and of [7] where positive correlation between study habit skills and academic performance was found in their separate investigations into study habits and academic performance of graduate teacher's trainee. The agreement of the results of this study with other studies infers that study habit is a potential predictor of academic performance of science education undergraduates.

Conclusion

Evidence from the results of the study revealed that science education undergraduates exhibit bad study habits. Significant difference in study habits were found in relation to gender (male and female) and class level (first and final year) while there was significant relationship between study habits and academic performance of science education undergraduate

Recommendations

Based on the findings of this study, the following recommendations were made.

1. Provision should be made for inclusion of study habits as a topic in the general studies course for first year students.
2. Undergraduate should be motivated to develop good study habit.
3. Regular counseling should be offered to undergraduate on study skills strategies in order to boost their study habits and enhance their academic achievement.

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