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Study Habits as Correlates of Senior School Students' Achievement in Biology in Ilorin, Nigeria

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Abstract

This study was carried out to find out the correlation between senior school students study habits and their academic performance in Biology in Ilorin, Nigeria. Specifically, the study investigated the correlation between components of study habits and senior school students' performance in Biology. This study was a descriptive research of the survey type. A total of 600 Senior School II Students that were selected through simple random sampling formed the sample frame for the study. Three (3) research hypotheses were formulated and tested. The research instruments used for the study were researchers-designed questionnaire on Study Habit Inventory Questionnaire (SHIQ) and a proforma through which Students' Terminal Result (STR) were obtained. The data collected were analyzed using Multiple Regression, Pearson Product Moment Correlation Coefficient and Analysis of Variance (ANOVA) respectively to test for the hypotheses at 0.05 level of significance. The findings from the study showed that: (i) There was a significant relationship between senior secondary students study habits and their academic performance in Biology in Ilorin, Nigeria; (ii) Reading had a weak positive correlation on students' academic performance in Biology ($r = .013$; $p = 0.75$; $p > 0.05$). (iii) Time management had a strong positive correlation on students' academic performance in Biology ($r = .915$; $p = 0.04$; $p < 0.05$). (iv) Study period had a weak positive correlation on students' academic performance in Biology ($r = .029$; $p = 0.09$; $p > 0.05$). (v) There exist a significant interaction effect among reading, time management, study period and students' academic performance in Biology (Cal-f val. $0.92 > \text{Crit.-f val. } 0.81$). Based on the findings of this study, it was concluded that mental concentration, examination and time-management by students should be properly harnessed given their predictive status to students' academic performance, particularly in Biology. It is therefore recommended among others that stakeholders in education should take cognizance of the fact that there exist numerous study habits components which in turn could be correlates of learning outcome among students. Hence, there is need to introduce programmes that could help students have better studying methods so as to enhance their academic outcomes.

Introduction

Science education is important in a nations' curriculum it is a means for equipping students to live effectively in the modern age of science and technology. It is also important to the growth and

development of any nation and crucially so in Nigeria, which is at present a basic consumer of scientific technological inventions. Science is an organized body of knowledge, a method of solving problems and a search for an explanation of natural objects and phenomena (Ayeni, 2002). Abimbola (2013) also described science as a body of knowledge, a way or method of investigating and

Keywords: Study, Habits, Correlation, Students, Performance

a way of thinking in the pursuit of an understanding of nature.

Biology, one of the disciplines in the sciences is important to human beings' and to many of humans' problems. For instance, biological principles are variables in the functioning of the various parts of the body that are put into practice in Medicine. Biology is a subject that cut across every aspect of human life. Adegbite (2005) defined Biology as the basic science that deals with the study of living things. Ahmed, Ayilara, Idiaro and Sanni (2011) affirmed that the world is made up of things that are living and those that are not living.

The importance of study habits, study skills and parental involvement in children's educational affairs for improving their academic performance cannot be overemphasized. Good (1998) defined study habits as the student's way of studying whether systematic, efficient or inefficient. Also, Fielden (2004) affirmed that good study habits help the student in critical reflection of skills outcomes such as selecting, analyzing, critiquing, and synthesizing. Study habits can lead to the success and failure of students in schools. Study habits are among the methods in which a person learns and enhances his or her learning. Having good study habits is essential especially to students because it is their tool to be able to learn and acquire information.

Study habit also describes some external activities which serve to activate and facilitate the internal process of learning. Also, Nneji (2002) affirmed that study habits are learning tendencies that enable students to work privately. Study habits are routines, including, but not restricted to, the frequency of studying sessions, review of material, self-testing, rehearsal of learned material, and studying in a conducive environment. According to Crede and Kuncel (2008), study habits are a person's routine to acquire more information or review a certain topic. Adeyemo (2005) affirmed that study habit is a pattern of activity that goes beyond merely reading for pleasure. It means a well-planned and deliberate form of consistency on the part of the

student towards the understanding of academic subjects.

Salami and Aremu (2006) pointed out that research has revealed that whenever a student adopts effective study techniques, his learning skills, understanding of materials and memory processing strategies as well as general performance in both test and examinations are improved appreciably. According to Okegbile (2007), study habits are style which is systematically formed by students towards learning achievement. To Okegbile, study habit entails students' adjustment to the demands and pressure on the students to learn privately and to enhance their academic performance.

Research on the influence of study habit and students' academic performance has for long received attention from scholars and educational agencies. For instance, the National Assessment of Educational Progress (NAEP) in 1994 conducted a study to find out the relationship between study habits and academic performance of students. Findings from the study revealed a positive correlation between study habits and students' academic performance. Similarly, Onwuegbuzie (2001) conducted a study to find out the relationship between academic success and study habits and reported a positive relationship between the two variables.

The goal of many students while entering a school, college or an institution is to attain academic success, this intent may, however, be thwarted by defective study habits and techniques employed by the students. Owyuawadume (1996) affirmed that when a student is deficient in study habits and techniques, academic success may not be attained and thus, frustration occurs. Covey (2002) affirmed that the preventive measure to this unfavourable experience is to prepare students on how to succeed in their studies by developing and appreciating the habits of highly effective people.

There are numerous study habits components that determine students' academic performance in the school or at home. Though, many students do not realize that these components can improve

their academic performance. Among the components are reading, mental concentration, time management, note-taking, teacher consultation, homework and assignment, examinations, reading speed, reading comprehension, writing skills and study period procedures.

Reading is one of the components of the study habit that has to do with learner's success. The essence of reading is to get the whole meaning of the content. Reading with the intent to understand should be a major aim of every student. Time management is an aspect of study habits that enables the student to plan carefully so as to cover the academic task ahead and also help to organize one's time for academic work. Before students begin to think about the process of studying, a timetable must be developed.

The issue of academic performance has been a major problem confronting the education sector. Determining students' academic performance underlies several abilities, such as memory, previous knowledge or aptitude as well as psychological factors such as motivation, interests, temperaments or emotions, to name a few (Deary, *et al.*, 2004).

Researchers and educators have no doubt that academic performance in school is determined by many factors. These factors are as complex and varied as those that influence all aspects of children's development.

Research conducted by Gidado (2000), Dawa, Adamu, & Olayomi (2005) attributed students' poor performance to different variables such as intelligence, personality traits, lack of basic facilities, shortage of qualified and good teaching staff, lack of motivation, study habits, school environment, student-teacher ratio, lack of availability of students' textbook and study materials among others. Despite the numerous *numbers* of attempts to improve scientific knowledge specifically in Nigeria, the performance of students in senior secondary schools examinations especially Biology is very appealing.

Because of the importance of study habits in determining the academic performance of learners in schools, this study investigated the

study habits as correlation of senior school students' achievement in Biology in Ilorin metropolis, Nigeria.

Purpose of the Study

This study investigated the study habits as correlation of senior school students' achievement in Biology in Ilorin, Nigeria. Specifically, the study aimed at finding out:

1. The relationship between students' study habits and student's achievement in Biology
2. If reading, time management and study period as components of study habits have correlation on student's achievement in Biology.

Research Questions

In this study, answers were sought to the following research questions:

1. What is the relationship between students' study habits and their academic achievement in Biology?
2. What is the correlation of reading, time management and study period as components of study habits and secondary school students' academic achievement in Biology?

Research Hypotheses

The following research hypotheses were formulated and tested for this study.

1. There is no significant relationship between secondary school students' study habits and their academic achievement in Biology.
2. Reading, time management and study period as components of study habit has no significant correlation on secondary school students' academic achievement in Biology.
3. There is no interaction effect among reading, time management, study period and the academic achievement of students in Biology.

Research Method

This is a descriptive research of the survey type. The target population consisted of all Senior School two science students in three local governments in Ilorin, Kwara State, Nigeria. Six hundred (600) senior school II science students were sampled for the study using simple random sampling. Two research instruments were used. The Study Habit Inventory Questionnaire (SHIQ) and the Students Terminal Result (STR) proforma. The proforma was used to obtain the students terminal results as contained in the school record. The research instrument was validated by experts in the field of Biology education. The reliability coefficient of the instrument was determined using Pearson Product Moment Correlation statistics and a reliability index of 0.72 was obtained. The researchers administered the questionnaire in person; wait for them to be filled and collected before leaving the sampled schools. Data were analysed using SPSS version 20.

Results

Three research hypotheses were tested as presented in Tables 1 to 5.

HO₁: *There is no significant relationship between students study habits and their academic performance in Biology.*

As shown in Table 1, Time management has the highest predictive relationship ($\beta = 0.117$; $t = 0.90$; $p < 0.05$). The study habits with the least predictive relationship are study period ($\beta = 0.000$; $t = 0.01$; $p > 0.05$), and reading ($\beta = 0.057$; $t = 0.630$; $p > 0.05$) respectively. In summary time management emerged as the key predictor of the extent to which students' study habits correlates with their academic performance in Biology. Therefore, there was a significant relationship between students study habits and their academic performance in Biology. Hence, we reject the hypothesis.

The data on table 2 shows a multiple correlation coefficient ($R = 0.378$, $R^2 = 0.152$). The multiple R of 0.378 indicates the extent to which all the predictors (reading, time management and study period) correlate with outcome variable (academic performance). The adjusted R^2 value of 0.112 shows that 11.2% of the variables in academic performance are due to the collective correlation of all the predictive variables.

HO₂: *Reading, time management and study period as a component of study habit has no significant correlation on students' academic performance in Biology.*

In Table 3, reading has a weak positive correlation on students' academic performance in Biology. ($r = .013$, $p = 0.75$) since the p -value

Table 1: Regression Coefficient Showing the Predictive Relationship of Selected Study Habits Components on the Academic Performance of Senior School Biology Students in Ilorin

Model	B	Beta	T	Sig
Constant	26.907		.819	.043
Reading	3.113	.057	.630	.529
Time Management	2.249	.117	.907	.045
Study Period	-.004	.000	-.001	.199

Table 2: Model Summary of the Independent Variables

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate
1	.378	.176	.112	15.681

(0.75) is greater than 0.05, reading had no significant correlation with students' academic performance in Biology. Time management had a strong positive correlation on students' academic performance in Biology. ($r = .915$, 0.04) since the p-value (0.04) is less than 0.05 , time management had a significant correlation on students' academic performance in Biology. Study period had a weak positive correlation on students' academic performance in Biology. ($r = .029$, $p = 0.09$) since the p-value (0.09) is greater than 0.05 , study period had no significant correlation on students' academic performance in Biology. Therefore, there is a strong positive correlation between time management and students' academic performance in Biology. Hence, hypothesis two is rejected. There is a significant correlation.

H_{03} : There is no significant interaction effect of reading, time management, study period and the academic performance of students in Biology.

The result shows [$F =_{(7,592)} = 0.922$, $p = .818$] at 0.05 alpha level of significance. This indicates that study habits components (reading, time management, study period) are significant predictors of academic performance of students in Biology, since the cal. F-value is greater than

the cri. F ($.922 > .818$). Hence, null hypothesis 3 which states that there is no significant interaction effect of reading, time management, study period and the academic performance of students in Biology is hereby rejected.

Summary of Major Findings

The results indicate the following:

1. Academic performance of senior school Biology students in Ilorin affected with their study habits.
2. Time Management was a key predictor of students' academic performance in Biology in secondary schools in Ilorin.
3. Time management had stronger positive correlation with the academic performance of senior school Biology students in Ilorin compared to reading, and study period.
4. There was no significant correlation between reading, and study period and academic performance of secondary school students in Biology in Ilorin.
5. There were significant interaction effects of reading, time management, study period and academic performance of secondary school students in Biology in Ilorin.

Table 3: Pearson Product Moment Correlation Coefficient Computation on the Correlation between Reading, Time Management and Study Period and Students' Academic Performance in Biology

Performance	Pearson correlation	Sig	No
Reading	.013	.756	600
Time management	.915	.041	600
Study period	.029	.097	600

Table 4: ANOVA Showing Interaction effect among Selected Students' Study Habits Components and their Academic Performance in Biology in Ilorin

Model	Sum of Squares	Df	Mean Square	F-value	Cri. F-value
Regression	888.849	7	128.407	.922	.818
Residual	145566.345	592	245.889		
Total	146465.193	599			

Discussions

The results of the study revealed that there existed a positive significant relationship between students' study habits and their academic performance in Biology. Time management was a key predictor of students' academic performance in Biology. This is because the model accounted for 11.2% of the variability in time management was statistically significant. This suggests that the amount of time students used in studying will determine the academic outcome. This is in line with the findings of Atkinson (2003) who observed that time allocation or management for what to study enabled students to plan carefully so as to cover the academic task ahead and also help in organizing one's time for academic work. Before students can begin to think about the process of studying, a timetable or plan must be developed. The study also revealed that the number of hours a student spent learning at home was relative to their educational level. Also, the findings of Akagah (2011) revealed that time management explained the bulk of the variables that predicted students' study habits and their academic performance.

The study also revealed that there exist a significant correlation between students study habits components and their academic performance in Biology. There was a strong positive correlation between time management and students' academic performance in Biology. This is in line with the study of Zakariyau (2014) that showed a significant relationship between study habits components like mental concentration, note-taking and time management and academic performance of the students in mathematics.

Conclusion

The formation of effective study habits in students is an outcome of the amount of time spent in studying. The findings concluded that the better the study habits, the higher the academic performance of students and that poor study habits will result in a

poor academic performance whereas good study habits will result in good academic performance. The study established that significant relationship existed between students study habits and their academic performance in Biology and that time management was a predicting variable with respect to students' academic performance in Biology in Ilorin. The study also concluded that a high positive correlation coefficient existed between time management and academic performance of students in Biology.

Recommendations

Based on the findings of this study, the following recommendations have been made:

1. Stakeholders in education should take cognizance of the fact that there exist numerous study habits components which in turn could be correlate of academic outcome among students. Hence, there is need to introduce programmes that could help students have better studying methods especially time management so as to enhance their academic outcomes.
2. Students should intensify more efforts in developing themselves on good study habits and study skills so as to make learning easy, have better understanding of content knowledge and allow them to recognize the methods or approached that can be used to handle different topics in Biology.

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