INFLUENCE OF GOOD STUDY HABITS ON THE ACADEMIC PERFORMANCE OF STUDENTS IN MATHEMATICS IN SENIOR SECONDARY SCHOOLS IN OGUN STATE, NIGERIA

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Abstract

Study habits play a very important role in academic life of students. Academic success or failures of students depend on their study habits. This study examines the influence of good study habits on the academic performance of students in mathematics in senior secondary schools in Ogun state, Nigeria. Survey research design was adopted for the study. The sample was made up of 350 respondents consisting of 150 males and 200 females. Two instruments for data collection were Study Habits Inventory (SHI) with reliability of 0.74and Mathematics Performance Test (MPT) with reliability of 0.82. Three hypotheses were tested. The result of the findings showed that, there is a positive significant relationship among the students' study habits of attending classes ($r = 0.077, p < .05$), reading books ($r = 0.086, p < .05$), visiting the library ($r = 0.260, p < .05$) and their performance in mathematics. Findings from the study also showed that, students' study habits significantly predict their performance in mathematics. Results also showed that there is significant difference between male and female students' performance based on their study habits. It is therefore recommended among others that school management should collaboratively guide students on how to develop good study habits, thereby enhancing their academic success.

Key words: Study habits; Performance; Mathematics; Students.

Introduction

Mathematics is the science of numbers and their operations (Adedayo, 2015). It is an important subject that requires a credit pass for further learning in higher institutions. Mathematical skill is required in daily activities, regardless of educational background and social status of individual. The benefit of mathematics is not only limited to knowledge in computation but more importantly, it makes thinking more rational and critical (Adedayo, 2015). An effective and efficient way of building mathematical knowledge among students is by encouraging good study habits among them. Once a student has learned a concept from his teacher, the teacher should ask him to explain the same to fellow students. So, in the process, all the students will be able to express their doubts on the topic and clear those doubts through discussions in a group (Abisola & Kudirat, 2017). Learning outcomes in mathematics have become a phenomenon of interest to stakeholders in education and this has accounted for the reason why scholars having been working on the factors that affects students' performance in the subject (Ewumi, 2012). The extent of preparation and study habit developed and used by students, go a long

way to determine their academic performance (Ebele&Olofu,2017). Study habit is the adopted way and manner a student plans his reading, after classroom learning so as to attain mastery of the subject (Boiling, 2000).

Mathematics is a very important subject in any society (Salman, 2012). There can be no question about the importance of mathematics both in general and specific education. The need for Mathematics increases because of technological advancement. Mathematics is among the core subjects at both Junior and Senior Secondary School levels of our educational system. According to the National Policy on Education (F.R.N., 2004) "the core subjects are the basic subjects that enables students to offer Arts and Sciences in Higher Education". International Association for Evaluation of Educational Achievement (I.A.E.E.A, 1998), has associated the learning of mathematics with basic preparation for adult life. Similarly, the Nigerian nation recognizes this association between mathematics and preparation for adult life when the (F.R.N. 2004) included the inculcation of permanent and functional numeracy as one of the general objectives of primary education.

Study habits can be grouped into two categories; good study habits and bad study habits. Good study habits according to Boiling (2000) are positive or productive study habits. They are those study habits which have the tendency to improve students' performance. On the other hand, bad study habits according to Crede&Kunnel (2012) are negative or non-productive study habits which are counterproductive to students' performance. Good study habits are good asset to learners because it helps the learners to attain mastery in the subject and then result to excellent performance while the opposite becomes constraint to learning & achievement which in turn leads to failure (Boiling ,2000). Good study habits help students to; attend classes very often and do so on time, submit their assignment on time, read or prepare very well for tests and examinations, take down notes and develop the points independently, ask relevant questions in class; thereby having good grades at the end of the term or session (Crede, M &Kunnel, 2012). Furthermore, Boiling (2000) asserts that good study habit through planning helps learners to prepare ahead, and accomplish their academic goals. Good study habits include being organized, keeping good notes, reading of textbooks, listening in class, and studying every day (Verma, 2016).The habits of attending classes, reading books, visiting the library and preparation for examinations are four indicators of good study habit (Akpan & Salome, 2015; Eamin, Akanda, & Haque, 2013; Khong, *et.al.* 2016; Ogunduyilemi, 2018).Study habits have been linked with academic performance in studies such as Elliot, McGregor & Gable (2017), Meter (2001), and Ossai (2014). In these studies, it was found that good study habits contribute to high academic performance while poor study habits lead to poor academic performance.

Reading is regarded as a habit when it is repeatedly carried out. Krashen (2016) defined reading habits, as how often, how much, and what students read. Reading habits is often considered in terms of the amount of materials being read, the frequency of reading as well as the average time spent on reading (Wagner, 2012). Reading habit is a habit that can be cultivated by reading regularly Krashen (2016). It is therefore, believed that reading habit may be developed in individual when reading is repeatedly carried out voluntarily. Krashen (2016) believed that reading habit and interests could be nurtured at an early age. Bignold (2013) indicated that, the habit of reading improved learners reading skills. Hence,

reading whether it is for learning or leisure is important since, it broaden students' experiences and knowledge (Green, 2012).

Study habit of visiting library has been described as an important students' habit that may influence their performance. An academic library is a place where students can search for more information that they need for their studies (Palani, 2012). Library plays an important role in improving students' academic performance. It is therefore important for the students to cultivate good study habits, which will equip them for excellent performance in their academic work through the use of a school's library (Dadzie, 2015). Habit of class attendance is also a study habit that can determine student performance in a subject. This is so, because it allows students interaction with resources such as; teachers, review of notes, demonstrations and so on (Crede,Roch, &Kieszczynka, 2010) . Arulampakam, Naylor and Smith (2012) stated that missing class has an adverse effect on students' performance. Studies in the past have also measured the differences in academic performances of studentsbased gender (Robert, Wooster and Chen, 2009 and Egwualu&Umeora, 2017). Blumner and Richards (2011) investigated the relationship between study habits and gender among students of Pennsylvania University. The result revealed, that there is no significant difference in the performance of the students based on their gender. (Richardson, 2013) investigated the gender gap in study habits of students. The result revealed a significant difference between the study habits and students' performance. It is on these premises that this study examines the influence of study habits on the academic performance of students in mathematics in senior secondary schools in Ogun state, Nigeria.

Purpose of the study

The main purpose of the study is to influence of study habits on the academic performance of students in Mathematics. Moreover, the study seeks to establish the gender effects of study habit on students' performance in Mathematics.

Hypotheses

The following hypotheses were formulated at 0.05 level of significance

1. There is no significant relationship among study habits (attending classes, reading books, visiting the library and preparation for examinations) and students' academic performance in Mathematics.
2. Attending classes, reading books, visiting the library and preparation for examinations will not significantly predict students' academic performance in Mathematics
3. There is no significant difference between male and female students' academic performance in Mathematics based on their study habits.

Methods

This study adopted a descriptive research of survey type. The sample for the study was drawn from public senior secondary school two (SSS2) students offering Mathematics in Ikenne and Ijebu East local government areas of Ogun- State, Nigeria. A multi-stage sampling technique was used in this

study (i.e cluster sampling and simple random sampling). Cluster sampling was used to select seven secondary schools in the Local Government Areas while Simple Random Sampling Technique was used to select the respondents. Sample was made up of three hundred and fifty (350) respondents consisting of one hundred and fifty (150) males and two hundred (200) females. Fifty students were randomly selected from each school.

Instrument for data collection

Study Habits Inventory (SHI)

This questionnaire was an adapted version of Bakare's (1977) Study Habits Inventory (SHI). The SHI contains forty (40) items. Each item of this instrument measures students' study habit in mathematics. It has two parts. Part A is made up of the demographic information of the respondents, while the second part of the instrument has four sections to cover each of the four study habits; Attending classes, reading books, visiting the library and preparation for examinations. Each section was made up of ten items. The reliability of the instrument was determined using Cronbach Alpha reliability statistics which yielded reliability coefficient of 0.74. The items are structured on four Likert scale of Strongly agreed (SA) with 4 points, agreed(A) with 3 points, disagreed(D) with 2 points and strongly disagreed (SD) with 1point statement. The score ranges from 40- 160.

Mathematics performance (MPT)

Mathematics performance test is 40 items that was designed by the researchers to measure students'

performance in mathematics. The items were taking from Senior Secondary Certificate Examination (SSCE) past questions. The ATTS multiple choice items have four options lettered A-D. The tests items were constructed in such a way to reflect the three categories of cognitive tasks of knowledge, comprehension and application. A reliability coefficient of 0.82 was obtained using the Split halve method. Descriptive statistics (Mean and Standard deviation) and inferential statistics (Pearson Product Moment Correlation, Multiple Regression Analysis and independent t-test) were used to test the stated hypotheses. Each item is assign one mark for a corrected answer with the highest score of 40 and lowest score of 0.

Results

The descriptive statistics of the findings with respect to the scores obtained by the students in the independent variables (attending classes, reading books, visiting the library and preparation for examinations) and students' performance in science are shown in Table1.

Table 1: Descriptive statistics of the independent and dependent variables

Variables	N	Mean	S. D
Attending class	350	15.75	1.856
Reading books	350	13.34	1.553
Visiting library	350	12.93	1.604
Preparation for examination	350	11.62	1.509
Students' performance	350	59.52	8.608

The mean and standard deviation of students' study habits are recorded as shown in table: Attending classes (Mean=15.75, σ=1.856), reading books (Mean=13.34, σ=1.553), visiting the library(Mean=12.93, σ=1.604) , preparation for examinations (Mean=11.62, σ=1.509) and students' performance (Mean=59.52, σ=8.608) respectively. The result shows that habit of attending classes has the highest mean score, while habit of reading for examination has the lowest mean score.

Hypothesis one

There is no significant relationship between study habits (Attending classes, reading books, visiting the library and preparation for examinations) and students' performance in mathematics.

Table 2: Correlation Matrix of students' study habits in mathematics with their performance scores

Variables	Student's performance	Attending classes	Reading books	Visiting the library	Preparation for examinations
Student's performance	1				
Attending classes	0.260*	1			
Reading books	0.086*	0.195*	1		
Visiting the library	0.077*	0.011	0.339*	1	
Preparation for examinations	0.020	0.008	0.288*	0.675*	1

* = significant at 0.05 level

The correlation between the study habits and students' performance is shown in table 2. Data in table 2 revealed a positive significant relationship among the students' study habits of Attending classes (r = 0.077,p< .05), reading books (r = 0.086,p< .05), visiting the library (r = 0.260,p< .05)) and their performance in mathematics. The table reveals non-significant positive relationship between students' habit of preparation for examination and their performance in mathematics (r = 0.020,p< .05).

Hypothesis two

Attending classes, reading books, visiting the library and preparation for examinations will not significantly predict students' performance in mathematics.

Table 3: Summary of the regression analysis

Model	Sum of Square	Df	Mean Square	F	Significant
Regression	369.225	4	92.314	74.944	.000
Residual	424.962	345	1.232		
Total	794.217	349			
R= 0.682					
R-square= 0.47					
Adjusted R- square=0.459					
Standard error of estimate= 1.110					

Significant at 0.05 level

Results in table 3 shows the prediction of students' study habits (attending classes, reading books, visiting the library and preparation for examinations) on their performance in mathematics. The table revealed that students' study habits contributed 47 % of the total variance in performance of students in mathematics ($R - Square$ = 0.47,p< .05). This percentage is significant. Therefore, the study habits listed above are important factors that performance of students in mathematics.

Hypothesis three

There is no significant difference between male and female students' performance based on their study habits.

Table 4: *t*-test Analysis on Gender Difference in Students' performance in mathematics based on study habit

Gender	N	Mean	S.D	Df	T	P-value	Remark
Female	200	14.24	1.865	348	2.099	0.037	Significant
Male	150	13.76	2.368				

*Significant at 0.05 level

Table 4 revealed a significant difference between male and female students' performance in Mathematics based on their study habits (t =2.099, df= 348; p<0.05). This implies that the hypotheses which stated that there is no significant difference between male and female students' performance based on their study habits is rejected and then concludes that there is significant difference between male and female students' performance based on their study habits in favour of the female students.

Discussion

The finding of the study reveals positive relationships among the identified study habits (attending classes, reading books, visiting the library and preparation for examinations) and students' performance in mathematics. This result is in agreement with the findings of Blummer& Richards (2011) that study habits have a significant positive relationship on the student's performance in mathematics. The result that study habit of regular class attendance had a positive correlation with student performance in mathematics gave credence to findings of Adegoke, Salako & Ayinde (2013) that reported that class attendance has a significant correlation performance of students. Also, the positive correlation between study habit of reading and students' performance, confirms the opinion of Nnenna &Ebi- Bulami (2014) who found out that learners achieve more when they become more consistent in reading and reasoning. Findings from the study also shown that students' study habits significantly predict their performance in mathematics. This result corroborate the finding of Chamundeswari (2014) that study habits play an important role in influencing academic success of students in mathematics. Results also showed that there is significant difference between male and female students' performance based on their study

habits in favour of the female students. This finding confirmed the result of Gladys (2015) that, there is significant difference between study habits of male students and female students on their performance in mathematics. The finding also confirms the result of Ossai (2014) that female students are better in study habits.

Conclusion

This study examines the influence of study habits on the academic performance of students in mathematics in senior secondary schools in Ogun state, Nigeria. The study revealed that Students' academic performance in mathematics was directly affected by their study habit. The finding of the study also reveals positive relationships among the identified learning style (attending classes, reading books, visiting the library and preparation for examinations) and students' performance in mathematics. Results also established a significant difference between male and female students' performance based on their study habits.

Recommendations

The following recommendations were made:

(i) The school management should collaboratively guide students on how to develop good study habits, thereby enhancing their academic success.
(ii) Teachers should be constantly observing the learners in order to identify their study habit.
(iii) Teachers should encourage students to visit the library to read additional materials stocked in the library.
(iv) Parents and guardians should encourage their children to set up schedules for study.

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