

*Full Length Research paper*

# Use of library resources, study habit and science achievement of junior secondary school students

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**This study investigated combined and relative influences of use of library resources and study habit on science achievement of the junior secondary school students in Ogun State, Nigeria. Three hundred and sixty (360) students randomly selected from twelve secondary schools in Ogun State participated in the study. Three instruments were designed and used for data collection. Use of library resources and study habit combined together to significantly influence science achievement (R Square = 0.061,  $p < 0.05$ ). There is no significant difference between male and female students' use of library resources, study habit and science achievement. The school counsellors should train students on effective study techniques in order to foster science achievement.**

**Keywords:** Library resources, study habit, science achievement, junior secondary schools, Nigeria.

## INTRODUCTION

One of the urgent needs in Nigeria is how to improve the teaching and learning of science. Presently the condition of science teaching and learning is very discouraging. Salim (2000) observed that students' performance in science in public of examinations has been consistently low. Olatoye (2002) also found students' achievement in Lagos State (Nigeria) secondary schools to be generally poor. The overall percentage mean score was 31.3%. Therefore, the problem of low performance of students in the science subjects should be given priority attention. This is because there is no way a nation can develop without scientific and technological development. All the great nations of the world like the United States, Britain and Japan are also nations that have developed in science and technology. It is therefore necessary to find out the influence of certain factors on students' science achievement as this can help in proffering solution to the problem of under achievement in science.

Lance, Rodney and Hamilton-Pennell (2000) reviewed

literature on the impact of school library programme and information literacy on student achievement. They found among other things that students in schools with good library resources and full time librarians performed at high levels than students in schools with minimal or no library resources. Lonsdale (2003) reported that a good library that is adequately staffed, resourced and funded could lead to higher students' achievement regardless of the socio-economic or educational levels of the parents. A strong computer network connecting the library resources to the classrooms and laboratory has an impact on students' achievement. The quality of collection has impact on students' achievement and test scores are higher when there is higher usage of the school library.

However, Nwalo (2000) described the problem of library in Nigeria as multi-dimensional. He identified the following problems:

- 1 Scarcity of adequate books for libraries
- 2 Inadequate funding of libraries
- 3 Shortage of foreign exchange
- 4 Mutilation and stealing of library materials
- 5 Poor integration of library services in planning and
- 6 Delay in legal recognition of librarianship in Nigeria.

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Study skills are fundamental academic success. This is because a student can only recall what is in the memory. A student who does not give enough time to read may find it difficult to do well in examinations especially where the topics to be covered are many and there is limited time to prepare for examinations. Tschumper (2006) reported that the study skills of the high school students are very poor. He noted that the focus on education has shifted from teaching skills for academic success to covering all the materials in the curriculum in preparation for the mandated standardized tests.

Poor performance of students in school have been traced to poor study habit (Bradon, 1996, Olatoye, 2009, Olatoye & Ogunkola, 2008). Bradon (1996) noted that if study skills are not improved students will continue to perform poorly in tests and may not be able to realise their full potential. Students should therefore evolve good study habit skills like note-taking, time management, organizing for a test, recording assignment in assignment note books, leaving regular time to study while removing distraction that come from television or phone call during homework. Availability and use of library resources and effective study habit are therefore important pre-requisites to attaining greater achievement in science. This study therefore investigated combined and relative influence of use of library resources and study habit on students' science achievement in the Junior Secondary Schools in Ogun State.

### Research Questions

1. To what extent will the use of library resources and study habit taken together predict students' science achievement?
2. To what extent will the use of library resources alone predict students' science achievement?
3. To what extent will study habit alone predict students' science achievement?
4. What are the relationships among use of library resources, study habit and students' science achievement?
5. Is there any significant difference between male and female students'
  - i. Use of library resources
  - ii. Study habit and
  - iii. Science achievement?

## METHODOLOGY

### Research Design

This study adopted an *expost facto* research design. In such design, the independent variables have already

occurred, the researcher cannot manipulate them. This design is very suitable because this study is non-experimental and the two independent variables, study habit and use of library resources were not manipulated.

### Target Population and Sample

The target population for the study is all the Junior Secondary School students in Ogun State. Twelve secondary schools were randomly selected from the list of secondary schools in each of the four divisions of Ogun State. Random sampling technique was used to select three (3) secondary schools from each division in order to ensure each school had equal chance of being selected. Twelve schools selected from the four divisions in the State were used for the study. Thirty students were randomly selected from the Junior Secondary School III in each school. A sample of three hundred and sixty (360) students was used for the study.

### Instrumentation

Three questionnaires were designed and used to collect data. They are:

- i. Use of Library Resources Questionnaire (ULRQ)
- ii. Students' Study Habit Questionnaire (SSHQ)
- iii. Students' Science Achievement Test (SSAT)

ULRQ and SSHQ are four-point Likert-type scale. Students were asked to indicate their opinion by ticking any of 'Strongly Agree,' 'Agree' 'Disagree' and 'Strongly Disagree' in front of each statement. The ULRQ and SSHQ have 16 and 14 items respectively. Students were not asked to indicate their names on the questionnaires to make the responses anonymous. The initial versions of the instruments were given to experts for suggestions and comments before coming up with the final versions. The Cronbach alpha reliability co-efficients of 0.781, 0.701, 0.776 were obtained for ULRQ, SSHQ and SSAT respectively.

SSAT is a 50-item multiple-choice objective test with four options for an item. The items cover all the topics in the Upper Basic Education (Junior Secondary School) Integrated Science syllabus.

### Data Analysis

Data were analyzed using regression analysis for research questions 1 to 3, Pearson product-moment correlation for research question 4 and t-test for research question 5. The research questions were answered using a two-tailed test at 0.05 level of confidence.

**Table 1:** Combined influence of use of library resources and study habit on science achievement

R = 0.246 R Square = 0.061 Adjusted R Square = 0.55 Standard Error = 6.678						
<b>Analysis of variance</b>						
	<b>Sum of squares</b>	<b>Df</b>	<b>Mean square</b>	<b>F</b>	<b>p</b>	<b>Remark</b>
Regression	1029.061	2	514.530	11.537	0.000	*
Residual	15921.728	357	44.599			
Total	16950.789	359				

\*Significant ( $p < 0.05$ )

**Table 2:** Use of library resources as a predictor of students' science achievement

R = 0.164 R Square = 0.027 Adjusted R Square = 0.024 Standard Error = 6.788						
<b>Analysis of variance</b>						
	<b>Sum of squares</b>	<b>Df</b>	<b>Mean square</b>	<b>F</b>	<b>p</b>	<b>Remark</b>
Regression	457.272	1	457.272	9.925	0.002	*
Residual	16493.517	358	46.071			
Total	16950.789	359				

\*Significant ( $p < 0.05$ )

## RESULTS

### Research Question 1

To what extent will the use of library resources and study habit taken together predict students' science achievement?

In table 1, combined influence of use of library resources and study habit accounted for a low but statistically significant 6.1% of the total variance in science achievement ( $R^2 = 0.061$ ,  $p < 0.05$ ). Thus, use of library resources and study habit are important predictors of science achievement. These two independent variables are among the factors that can raise student achievement in science. The low percentage only implies that there are many other variables, not considered in this study that can still help to explain variance in science achievement. In other words, there are still many other independent variables that influence students' science achievement in schools.

### Research Question 2

To what extent will the use of library resources alone predict students' science achievement?

In table 2 above, use of library resources alone accounted for 2.7% of the total variance in science

achievement. ( $R^2 = 0.027$ ,  $p < 0.05$ ). This percentage though statistically significant is very low. Use of library resources is therefore an important variable in science achievement. The low percentage presupposes there are still many variables that can significantly predict achievement in science.

### Research Question 3

To what extent will study habit alone predict students' science achievement?

In table 3 below, study habit alone accounted for 6.0% of the total variance in students' science achievement ( $R^2 = 0.060$ ,  $p < 0.05$ ). This percentage though statistically significant is very low. The low percentage presupposes there are still many variables that can significantly predict achievement in science. The fact that the percentage is significant means it is an important predictor of science achievement.

### Research Question 4

What are the relationships among use of library resources, study habit and students' science achievement?

Each of the variables in table 4 below significantly

**Table 3:** Study habit as a predictor of students' science achievement

R = 0.246						
R Square = 0.060						
Adjusted R Square = 0.058						
Standard Error = 6.670						
<b>Analysis of variance</b>						
	Sum of squares	Df	Mean square	F	P	Remark
Regression	1022.461	1	1022.461	22.981	0.000	*
Residual	15928.328	358	44.493			
Total	16950.789	359				

\*Significant ( $p < 0.05$ )

**Table 4** Relationships among use of library resources, study habit and students' science achievement

Variable	Use of library resources	Study Habit	Science Achievement
Use of library resources	1.000		
Study Habit	0.235*	1.000	
Science Achievement	0.164*	0.246*	1.000

\*Significant ( $p < 0.05$ )

**Table 5** Comparison of male and female students' use of library resources, study habit and students' science achievement

Variable	Gender	N	Mean	Std. Dev.	Std. Error	df	t	p	Remark
Use of library resources	Male	181	30.862	8.501	0.632	358	0.700	0.450	NS
	Female	179	30.480	8.339	0.623				
Study Habit	Male	181	32.000	12.146	0.903	358	0.446	0.656	NS
	Female	179	31.899	12.982	0.970				
Science Achievement	Male	181	19.149	6.638	0.493	358	0.726	0.468	NS
	Female	179	19.665	7.109	0.531				

NS = Not Significant ( $p > 0.05$ )

correlated with every other variable. This implies that there is a significant relationship between any two variables in the table above. Thus, the higher the students' use of Library, the higher the study habit, the higher the science achievement.

### Research Question 5

Is there any significant difference between male and female students'

- i. Use of library resources,
- ii. Study habit and
- iii. Science achievement?

There is no significant difference between male and female students' use of library resources, study habit and students' science achievement. It should be noted that students' average performance in science is still below average. The mean scores of achievement of male and female students are 19.149 and 19.665 respectively. The mean scores are below average because the maximum obtainable score in the science test administered is 50.

### DISCUSSION

Use of library resources and study habit combined together to significantly predict student science achievement. Each of the independent variables also significantly predicts science achievement. The significant positive influence of library resources on students' achievement is not new. Lance, Rodney and Hamilton-Pennell (2000) reported those students' in schools with good librarian and full time library staff performed at higher level than students in schools with minimal or no library use. Lansdale (2003) corroborated this report. He found that students in schools adequately staffed, resourced and funded had higher students' achievement.

The positive relationship between library use and study habit has been reported by Dike (2004) and Abareh (1998). Use of library resources encourages good study habit skills. It is therefore logical to expect high positive relationship between study habit, use of library resources and academic achievement as reported in this study. Study habit includes students' skills for academic

activities like note-taking, consultation with teachers, time allocation for study and ability to read and cover adequately all topics required for test or examination. No doubt, students need the support of the library to carry out all these important academic activities.

Onatola (2004) considered libraries as fundamental to the design and implementation of excellent educational programme. He further explained that the level of support given to library by the government and the public, qualification, experience and personality of library staff are very important in enhancing library roles to students. Dike (2004) identified the roles of libraries to users as provision of learning resources, teaching and education function, promotion of reading and provision of information and literacy education.

There seems to be a link between library resources, reading and study habit. Library promotes reading cultures among users. Abareh (1998) observed that librarian and libraries play a vital role in promoting reading habit, which is necessary in the development of a person and nation. Reading is one of the most important means for acquisition of knowledge. It is important to education as everyone is brought into contact with a good library throughout his or her period of learning.

Low students' achievement in science has also been reported by many researchers which include Keeves (1992), Salim (2000) and Adekoya and Olatoye (2011). For example, Keeves (1992) and Olatoye (2002) also reported significant difference between male and female students' achievement in science. In those studies male students performed significantly better than their female counterparts. In this study, there is no significant difference between male and female students' science achievement.

## CONCLUSION AND RECOMMENDATIONS

Supply of books to the library should also take care of all the subject areas especially the science subjects. Provision of laboratory equipment is not enough if students do not have where they can relax and read the theoretical bases of all the topics taught in the laboratory. Every good school should have a functional library where students can have access to information and materials that can assist in completion of assignments and preparation for examinations. The school administrators should ensure provision of well-equipped library to foster academic achievement. The counsellors' also should regularly train the students on effective study techniques to enhance achievement in science.

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