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Influence Of Gender On Hours Of Supervised Library Use On Students' Performance In Senior Secondary Schools In Imo State.

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Abstract

In this study, the researcher examined the influence of gender on hours of supervised library use on students' performance in senior secondary schools in Imo State. Four objectives, four research questions were posed and four hypotheses formulated in the study. The study was carried out using quasi-experimental design which involved pre-test, treatment and post-test of non-equivalent group method. The population of the study was 94,963 Senior Secondary School Students (SS1-SS3) from 275 public secondary schools in Imo State. The sample size for the study comprised of 127 senior secondary II students drawn from three senior public secondary schools in Imo State. Purposive and cluster sampling techniques were used. Two instruments were used for collecting data for the study. The instruments were: English Language Achievement Test (ELAT) and Mathematics Achievement Test (MAT). The reliabilities of the instruments were established using Kuder Richardson formula 20 (KR-20) which yielded reliability coefficients of 0.73 and 0.71 for ELAT and MAT respectively. Research questions were answered using mean and standard deviation while two-way Analysis of Covariance (ANCOVA) was used to test the hypotheses at 0.05 level of significance. It was revealed hours of supervised library use increased the achievement of male students more than the female students in English Language but not significantly different; hours of supervised library use increased the achievement of male students more than the female students in Mathematics significantly and there is no significant interaction effect of gender and hours of supervised library use on the achievement mean scores of the students both in English Language and Mathematics. Based on the findings, it was recommended among others that since hours of supervised library use have been found to enhance the quality of achievement in English Language and Mathematics for male students, teachers should be encouraged to employ it more in the teaching of the subjects. By so doing, the achievement of students in these subjects could be enhanced. Also gender should not be a determining factor in students' achievement since it does not have a significant interaction effect on the achievement of students in these core subjects.

Keywords: Library Use, Gender, Male, Female, English Language, Mathematics, Supervision, Achievement.

Introduction

The school library is indeed the cultural and information centre of the child, where the student will be able to gain access to information materials that will enable him to develop intellectually, socially, emotionally and mentally. The school library is a library within the school environment where students and their teachers have access to books and other resources (Akanwa, 2013).The school library is crucial in the teaching and learning processes. School library usage provides students the necessary learning support and equips them with essential skills they need to succeed academically. Through research, technology, and information problem solving, school library excites students about the learning process and stimulate their curiosity. Yusuf (2014) stressed that availability of a print rich environment and digital resources lead to more free voluntary reading that promotes students' potential for comprehensive knowledge, language ability and grammatical and spelling competence.

Efforts are made to enhance the use of the library by students. Bamidele (2015) opined that the librarian can develop reading and library use plan by involving a series of lectures under library orientation and user instruction programme. Ullah and Ameen (2014) submit that hours of supervised library use aid the library users to become independent learners in utilizing library resources. Furthermore, some libraries in Nigeria according to Unuabo and Oseghale (2018) have started providing extended hour of library service in recent years, although their findings revealed that shift work had made it difficult for staff on extended hours' duty to attend social events, take care of family issues and they also face difficulties in getting home after their working hours. Darch cited in Saka (2010) reported that extended hours of library services may be a novel idea in Nigeria but they are not new in many parts of the world. Commenting on the role of adequate supervision of library use, Madukoma, Onuoha, Omeluzor and Ogbuiyi (2013) report that adequate supervised use of library and orientation was introduced in academic institutions to ensure that students have the intellectual ability and skill to access and retrieve information as well as construct a frame work for learning.

In Nigeria, gender has been found to be inversely related to the level of use of library resources. The explanation of this is that there exists a greater tendency to use resources available in a library among males than females, hence gender and

students'performance.Gender is a sociological construct. It refers to state of being male (boy) or female (girl).Gender is a set of characteristics distinguishing between males and females, particularly in the case of man and woman which, depending on the context, may vary from sex to social role to gender identity (Bland, 2013). According to Okeke (2004), gender is a social or cultural construct, characteristics, behaviour and roles that vary from place to place or culture to culture. It is not like sex, which is biologically determined and universal too.

For a long time, gender was listed by researchers as one of the factors that influenced the academic achievement of the child (Gupta, Sharma & Gupta, 2012). Hence, there has been a lot of debate on whether gender really affects academic achievement. Some researchers believed that boys often out-perform their girls' counterparts in most subject areas, while some conclude the other way round (Abubakar&Oguguo, 2011). But current trends show that the gap that once existed between genders is fast closing (Abubakar&Bada, 2012). This suggests that women are getting more exposed to educational activities more than ever.

The arbitrary assigning of roles and expectations to different sex (male and female) within the society has given rise to such misconception of perceiving science as masculine and of male domain only. Oludipe (2012) observed that in Nigeria, certain vocations and professions have traditionally been regarded as men's (Medicine, engineering and architecture, etc.) and others as women's (nursing, catering, typing, etc.). Similarly, Nzewi (2010) inferred that the socio-cultural upbringing of females within most Nigerian homes tends to shape the girl-child away from science and science related disciplines. For instance in most homes what is regarded as complex and difficult tasks are allocated to boys whereas girls are expected to handle the relatively easy and less demanding tasks. Consequently, fewer females opt for science subjects thereby creating some differences in the number of males and females in science discipline in favour of the males. Nevertheless, Chang (2013) reported that although there is a decrease in the gap in gender difference in pupil performance in subjects, female representation in subjects involving calculation like sciences is still low in comparison with their male counterparts.

The issue of closing gender gap in school has remained elusive. In recent times gender related issues in science education have continued to receive serious attention judging from the number of studies done to that effect. Babajide (2010) opined that science subjects which include Physics and Chemistry are given masculine outlook by educational practitioners. In addition to this, the study by Casem and Oliva(2013) shows that academic achievement in some subjects depends on gender. Although some researchers (Olota, 2015; &Njoku, 2010) indicated that male and female pupils performed equally well, it is not clear how gender will influence learning when the different strategies are used in teaching, hence the need to include gender in this study. However, this present study wants to validate these studies or otherwise by examining the effects of hours of supervised library use on students' performance in senior secondary schools. Gender was considered as a moderating variable in this study, as the researcher compared the achievement of male and female students. That is, the research found out the influence and interaction effect of gender with hours of supervised library use and students' academic achievement in English Language and Mathematics.

Objectives of the Study

The general purpose of the study was to ascertain influence of gender on hours of supervised library use on students' performance in senior secondary schools in Imo State. Specifically, the study sought to:-

1) determine the influence of gender on the English Language mean achievement scores of students exposed to four hours supervised library use and two hours supervised library use;

2) examine the interaction effect of gender and hours of supervised library use on the mean achievement scores of the students in English Language;

3) determine the influence of gender on the Mathematics mean achievement scores of students exposed to four hours supervised library use and two hours supervised library use; and

4) examine the interaction effect of gender and hours of supervised library use on the mean achievement scores of the students in Mathematics.

Hypotheses

The following null hypotheses were formulated and tested at 0.05 level of significance.

Ho$_1$: The achievement mean scores of male and female students that had four hours supervised library use and two hours supervised library use at post test in English Language is not significantly different.

Ho$_2$: The treatment by gender interaction effect of achievement in English Language is not significant.

Ho$_3$: The achievement mean scores of male and female students that had four hours supervised library use and two hours supervised library use at post test in Mathematics is not significantly different.

Ho$_4$: The treatment by gender interaction effect of achievement in Mathematics is not significant.

Review of Empirical Studies

Akande and Bamise (2017) evaluated the use of school library materials and services available in promoting students' academic motivation in selected Secondary Schools in Osun State, Nigeria. They discovered in the study that although majority of the respondents (53.5%) use the library weekly; 36.5% daily and 10.4% monthly, the students that used the library daily were predominantly boys (49.2%) while most of those who used the library weekly were females (71.1%).

Gbemi's (2016) study was on use of library and students' academic achievement at University of Lagos, Nigeria. The findings showed that there existed a significant association between library use and students' academic achievement.

Nevertheless, Ayaz, Nasir, Abdul, Rooh and Mati (2017) carried out a study on the impact of school library on students' academic achievement at secondary school level in southern districts of Khyber Pakhtunkhwa, Pakistan. The result of the study showedthattherewas significantrelationshipbetweenschoollibraryandstudents'academicachievement.

Ossai-Ugbah (2010)examined the extent to which the use of automated electronic information services by students has influenced the academic performance of students in

three tertiary institutions in Nigeria namely: University of Ibadan, Covenant University, Sango Ota and LadokeAkintola University of Technology, Ogbomoso. Theresults revealed that students who made use of automated library services were better exposed to academic materials and performed academically better than those who did not make use of the services of an automated library. Majority of the users agreed that there was a significant relationship between educational academic exposures with the use of the automated library services, and they were satisfied with these automated electronic library services irrespective of gender.

Aanu and Olatoye (2011) investigatedcombinedandrelativeinfluencesof useoflibraryresourcesandstudy habit onscienceachievement ofthejuniorsecondaryschoolstudentsinOgunState,Nigeria. The result revealed that use oflibraryresources andstudy habitcombinedtogether significantlyinfluence achievement; and also revealed was that gender interaction does not significantly exist.Similarly, it further revealed that therewasnosignificantdifferencebetweenmale andfemalestudents'use of libraryresources,study habitandscienceachievement.

Esses (2014) studied the effects of library instruction on satisfaction with the use of library and its services: A study of undergraduate students in five universities in the Southern part of Nigeria. Findings of the studyshowed thatsomeoftheUniversitylibrariesin the southernpartofNigeria putinplace severalmethodstoeducate library userswhichrangefromorientation,useoflibrarycourse,staffguidance, etc., irrespective of their gender.

Jato, Ogunniyi and Olubiyo (2014) investigated study habits, use of libraries and students' academic performance in selected secondary schools in Ondo West Local Government Area of Ondo State. The study revealed among others that irregular use of school libraries by the students was one of the factors for poor scores in test and examination, many students did not study outside the school, and academic performance of the students was poor in Mathematics and English Language. This showed that supervised library use has a great potential to improve students' academic achievement.

Yusuf, Zahyah and Muhajir (2018) examined the perceived influence of library services on students' academic achievement in secondary schools in Kwara State. It was

discovered that library services positively influenced students' academic achievement and thus gender and use of library interaction do not exist.

Ida (2016) investigated influence of library service on students' academic performance in ordinary certificate of secondary education examination in MtwaraMikindani Municipality, Tanzania. Thefindingsrevealed that the students from secondary schools with libraries and enough materials were observed to perform better in CSEE than secondary schools with no libraries and enough materials due to the fact that, the availability of well-equipped libraries encourage learning habits and strengthened students' study skills which results to performance of the students CSEE.

Vichea, Nazy, Sopanha and Socheata (2018) examined the impact of the school library on students' achievement at the University of Cambodia. The findings of the study showed that there was a notable association between library usage and students' academic performance, but no gender interaction existed with library usage.

Research Methodology

The researcher adopted a quasi-experimental research design for this study; specifically, pre-test, treatment and post-test of non-equivalent group method were involved. In this study, the groups of students were pre-tested, later treated (supervised) and lastly post-tested.Three intact class groups were used for the present study. The first group had four hours of supervised library use, the second group had two hours of supervised library use while the third group were not supervised during their library use.The population of the study was 94,963. Senior Secondary School Students (SS1-SS3) from 275 public secondary schools in Imo State. The sample size for the study comprised 127 senior secondary school II students drawn from three senior public secondary schools in Imo State. Purposive and cluster sampling techniques were used. Firstly, a purposive sampling technique was adopted to obtain three secondary schools in Owerri metropolis, Imo State. The schools were purposefully sampled because of similar characteristics and some other factors like the available library resources/facilities, staffing, poor performance in the subjects, gender composition (mixed schools) and location among others. In each of the three selected schools, one intact class each was used. Consequently, the class in each of the schools represented the various groups for the experiment. The sampled number of SSII students in the three schools

was127.Secondly, the three sampled co-educational schools were assigned to each of the three experimental groups using cluster sampling technique. The three schools were co-educational schools that consist of both male and female students. One school was assigned to experimental group one (1) (41: 18 males and 23 females; who had four hours of supervised library use), another school was assigned to experimental group two (2) (44: 19 males and 25 females; who had two hours of supervised library use) and the last school was assigned to experimental group three (3) (42: 18 males and 24 females; who had time(s) of unsupervised library use). This study used two instruments which were in multiple choice forms. The instruments were titled; English Language Achievement Test (ELAT) and Mathematics Achievement Test (MAT) which were drawn from a selected unit of English Language and Mathematics curriculum.To establish the reliability of the instruments, Kuder Richardson 20 (KR-20) was used to determine the internal consistency reliability of the ELAT and MAT.The ELAT and MAT score yielded Kuder-Richardson reliability coefficient/index of 0.73 and 0.71 respectively which confirmed the internal consistency reliability nature of the instruments. The research questions were answered using mean scores and standard deviation, while the hypotheses were tested at 0.05 level of significance using two-way Analysis of Covariance (ANCOVA) F-test.

Data Analyses and Presentation

RQ$_1$: What are the achievement mean scores of male and female students that had four hours supervised library use and two hours supervised library use at post-test in English Language?

Table 1: Achievement mean scores of male and female students that had four hours supervised library use and two hours supervised library use at post-test in English Language

Sample Size (n), Mean ($\overline{X}$), and Standard Deviation (S)

Test: Gender English Achievement	Post-Test		
	n	$\overline{X}$	S
FH			
Gender	41		
Male	18	16.17	1.339
Female	23	15.61	1.901
TH			
Gender	44		

Male	19	14.95	1.471
Female	25	14.56	1.609

Table 1 shows the result of the achievement mean scores of male and female students that had four hours supervised library use and two hours supervised library use at post-test in English Language. The result showed that male and female students that had four hours supervised library use recorded post-test mean achievement scores of 16.17 and 15.61, respectively. On the other hand, the male and female students that had two hours supervised library use recorded post-test mean achievement scores of 14.95 and 14.56, respectively. The standard deviations of the groups at post-test are small and far from the mean, indicating that there is homogeneity of the scores in the distribution. The result from the above table shows that hours of supervised library use increased the achievement of male students more than the female students. This shows that more hours of supervised library use had more positive effect on male students' achievement in English Language than the female students.

Ho₁: The achievement mean scores of male and female students that had four hours supervised library use and two hours supervised library use at post test in English Language is not significantly different.

Table 2:
ANCOVA F-test Analysis for the Test of Hypothesis 1

Tests of Between-Subjects Effects					
Dependent Variable: Post-Test					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	46.981ᵃ	4	11.745	4.799	.002
Intercept	429.520	1	429.520	175.497	.000
Pre_Test	15.290	1	15.290	6.247	.014
Hours_of_Supervised_Library_Use	23.315	1	23.315	9.526	.003
Gender	4.375	1	4.375	**1.788**	**.185**
Hours_of_Supervised_Library_Use * Gender	.017	1	.017	.007	.934
Error	195.796	80	2.447		
Total	20064.000	85			
Corrected Total	242.776	84			
a. R Squared = .194 (Adjusted R Squared = .153)					

Table 2 shows the significant difference in the achievement mean scores of male and female students that had four hours supervised library use and two hours supervised

library use at post-test in English Language. The result on the table indicated that the F-calculated (F-cal) value is low at 1.788.The p-value of 0.185 is greater than 0.05 level of significance. Since the p-value is greater than 0.05 level of significance, the researcher accepted the null hypothesis thereby concluding that the achievement mean scores of male and female students that had four hours supervised library use and two hours supervised library use at post-test in English Language is not significantly different.

RQ$_2$: What is the interaction effect of gender and hours of supervised library use on the achievement mean scores of the students in English Language?

Table 3: Interaction effect of gender and hours of supervised library use on the achievement mean scores of the students in English Language

Test: Gender Interaction English Achievement		Pre-Test		Post-Test	
	n	$\bar{X}$	S	$\bar{X}$	S
FH					
Gender	41				
Male	18	8.00	1.029	16.17	1.339
Female	23	8.09	1.164	15.61	1.901
TH					
Gender	44				
Male	19	7.95	.911	14.95	1.471
Female	25	7.96	.935	14.56	1.609
NS					
Gender	42				
Male	18	8.11	.900	12.44	1.653
Female	24	8.00	1.319	11.42	1.863

Table 3 shows the result of the interaction effect of gender and hours of supervised library use on the achievement mean scores of the students in English Language. The result shows that at pre-test, the mean scores of the groups and their gender were minimal but at post-test the mean scores of the group that had four hours supervised library use increased more than the two hours supervised library use group. This shows that there is no interaction effect of gender and hours of supervised library use on the achievement mean scores of the students in English Language.

Ho$_2$: The treatment by gender interaction effect of achievement in English Language is not significant.

Table 4:
ANCOVA F-test Analysis for the Test of Hypothesis 2

Tests of Between-Subjects Effects					
Dependent Variable: Post-Test					
Source	**Type III Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**
Corrected Model	429.017ᵃ	6	71.503	30.817	.000
Intercept	457.507	1	457.507	197.179	.000
Pre_Test	58.932	1	58.932	25.399	.000
Hours_of_Supervised_Library_Use	348.814	2	174.407	75.167	.000
Gender	14.389	1	14.389	6.201	.014
Hours_of_Supervised_Library_Use *Gender	3.262	2	1.631	**.703**	**.497**
Error	278.432	120	2.320		
Total	26106.000	127			
Corrected Total	707.449	126			
a. R Squared = .606 (Adjusted R Squared = .587)					

Table 4 shows the significant interaction effect of gender and hours of supervised library use on the achievement mean scores of the students in English Language. The result on the table indicated that the F-calculated (F-cal) value was low at 0.703. The p-value of 0.497 was greater than 0.05 level of significance. Since the p-value is greater than 0.05 level of significance, the researcher accepted the null hypothesis thereby concluding that the interaction effect of gender and hours of supervised library use on the achievement mean scores of the students in English Language is not significant.

RQ3: What are the achievement mean scores of male and female students that had four hours supervised library use and two hours supervised library use at post test in Mathematics?

Table 5: Achievement mean scores of male and female students that had four hours supervised library use and two hours supervised library use at post-test in Mathematics

Test: Mathematics English Achievement	Post-Test		
	n	$\overline{X}$	S
FH			
Gender	41		
Male	18	16.61	.979
Female	23	14.61	1.406
TH			
Gender	44		

Male	19	15.16	1.385
Female	25	13.76	1.091

Table 5 shows the result of the achievement mean scores of male and female students that had four hours supervised library use and two hours supervised library use at post-test in Mathematics. The result shows that male and female students that had four hours supervised library use recorded post-test mean achievement scores of 16.61 and 14.61, respectively. On the other hand, the male and female students that had two hours supervised library use recorded post-test mean achievement scores of 15.16 and 13.76, respectively. The standard deviations of the groups at post-test are small and far from the mean, indicating that there is homogeneity of the scores in the distribution. The result from the above table shows that hours of supervised library use increased the achievement of male students more than the female students. This implies that hours of supervised library use are more effective on the male students than the female students.

Ho$_3$: The achievement mean scores of male and female students that had four hours supervised library use and two hours supervised library use at post-test in Mathematics is not significantly different.

Table 6:
ANCOVA F-test Analysis for the Test of Hypothesis 3

Tests of Between-Subjects Effects					
Dependent Variable: Post-Test					
Source	**Type III Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
Corrected Model	90.211^a	4	22.553	14.907	.000
Intercept	338.569	1	338.569	223.781	.000
Pre_Test	1.807	1	1.807	1.194	.278
Hours_of_Supervised_Library_Use	28.227	1	28.227	18.657	.000
Gender	59.770	1	59.770	**39.505**	**.000**
Hours_of_Supervised_Library_Use * Gender	1.838	1	1.838	1.215	.274
Error	121.036	80	1.513		
Total	19097.000	85			
Corrected Total	211.247	84			
a. R Squared = .427 (Adjusted R Squared = .398)					

Table 6 shows the significant difference in the achievement mean scores of male and female students that had four hours supervised library use and two hours supervised

library use at post-test in Mathematics. The result on the table indicates that the F-calculated (F-cal) value is high at 39.505. The p-value of 0.000 is less than 0.05 level of significance. Since the p-value is less than 0.05 level of significance, the researcher rejected the null hypothesis thereby concluding that the achievement mean scores of male and female students that had four hours supervised library use and two hours supervised library use at post-test in Mathematics is significantly different.

RQ4: What is the interaction effect of gender and hours of supervised library use on the achievement mean scores of the students in Mathematics?

Table 7: Interaction effect of gender and hours of supervised library use on the achievement mean scores of the students in Mathematics

Test: Gender Interaction Mathematics Achievement	Pre-Test			Post-Test		
	N	$\bar{X}$	S	$\bar{X}$	S	
FH						
Gender	41					
Male	18	9.00	1.609	16.61	.979	
Female	23	8.74	1.544	14.61	1.406	
TH						
Gender	44					
Male	19	8.53	1.541	15.16	1.385	
Female	25	8.68	1.626	13.76	1.091	
NS						
Gender	42					
Male	18	8.78	1.517	11.94	1.305	
Female	24	9.04	1.989	10.79	1.414	

Table 7 shows the result of the interaction effect of gender and hours of supervised library use on the achievement means scores of the students in Mathematics. The result shows that at pre-test, the mean scores of the groups and their gender were minimal but at post-test the mean scores of the group that had four hours supervised library use increased more than the two hours supervised library use group. This shows that there is no interaction effect of gender and hours of supervised library use on the achievement mean scores of the students in Mathematics.

Ho4: The treatment by gender interaction effect of achievement in Mathematics is not significant.

Table 8: ANCOVA F-test Analysis for the Test of Hypothesis 4

Tests of Between-Subjects Effects

Dependent Variable: Post-Test

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	471.939[a]	6	78.657	48.088	.000
Intercept	450.730	1	450.730	275.562	.000
Pre_Test	1.464	1	1.464	.895	.346
Hours_of_Supervised_Library_Use	393.509	2	196.755	120.289	.000
Gender	71.797	1	71.797	43.895	.000
Hours_of_Supervised_Library_Use * Gender	3.723	2	1.862	**1.138**	**.324**
Error	196.281	120	1.636		
Total	24535.000	127			
Corrected Total	668.220	126			

a. R Squared = .706 (Adjusted R Squared = .692)

Table 8 shows the significant interaction effect of gender and hours of supervised library use on the achievement mean scores of the students in Mathematics. The result on the table indicated that the F-calculated (F-cal) value is low at 1.138.The p-value of 0.324 is greater than 0.05 level of significance. Since the p-value is greater than 0.05 level of significance, the researcher accepted the null hypothesis thereby concluding that the interaction effect of gender and hours of supervised library use on the achievement mean scores of the students in Mathematics is not significant.

Discussion of Findings

Achievement mean scores of male and female students that had four hours supervised library use and two hours supervised library use at post-test in English Language

The study revealed that hours of supervised library use are more effective on the male students than the female students. This indicated that more hours of supervised library use had more positive effect on male students' achievement in English Language than the female students, but the difference in the mean scores was not significant. This result showed that male students' achievement increased more than that of the female students exposed to four and two hours of supervised library use. The inference therein was that no significant difference existed between the achievements of the two groups in English Language. This finding was in line with Akande and Bamise's (2017) study the

students that used the library daily were predominantly boys (49.2%) while most of those who used the library weekly were females (71.1%). Similarly, Aanu and Olatoye (2011) revealed that therewasnosignificantdifferencebetweenmale andfemalestudents'use of libraryresources,study habitandscienceachievement. Also, Gbemi's (2016) findings showed that there existed a significant association between library use and students' academic achievement. Nevertheless, Ayaz, Nasir, Abdul, Rooh and Mati's (2017) study showedthattherewas significantrelationshipbetweenschoolLibraryandstudents'academicachievement.

Interaction effect of gender and hours of supervised library use on the achievement mean scores of the students in English Language

The study revealed that interaction effect of gender and hours of supervised library use on the achievement mean scores of the students in English Language does not significantly exist. This finding was a clear indication that gender and hours of supervised library use do not jointly interfere with the English language achievement of the students. Ossai-Ugbah (2010) results revealed that majority of the users agreed that there was a significant relationship between educational academic exposures with the use of the automated library services, and they were satisfied with these automated electronic library services irrespective of gender. This finding was in line with Aanu and Olatoye's (2011) result which revealed that use oflibraryresources andstudy habitcombinedtogether significantlyinfluence achievement; and also revealed was that gender interaction does not significantly exist.This negates the finding of the study by Casem and Oliva (2013) that showed that academic achievement in some subjects depends on gender.

Achievement mean scores of male and female students that had four hours supervised library use and two hours supervised library use at post-test in Mathematics

This study revealed that hours of supervised library use were more effective on the male students than the female students. This indicated that more hours of supervised library use had more positive effect on male students' achievement in Mathematics than the female students, but the difference in the mean scores was significant. This finding confirmed the claims that male students are more cognitively inclined to mathematics. This finding was in agreement with Esses (2014) finding which showed

thatsomeoftheUniversitylibraryin the southernpartofNigeria putinplace severalmethodstoeducate library userswhichrangefromorientation,UseofLibrarycourse,staffguidance, etc., irrespective of their gender. Users'education adopted bysomeUniversityLibraries is effectiveand encouraging on satisfaction with the use of library and its services. In another result, Jato, Ogunniyi and Olubiyo (2014) study revealed among others that irregular use of school libraries by the students was one of the factors for poor scores in test and examination, many students did not study outside the school, and academic performance of the students was poor in Mathematics and English Language. This showed that supervised library use has a great potential to improve students' academic achievement.

Interaction effect of gender and hours of supervised library use on the achievement mean scores of the students in Mathematics

The study finally revealed that interaction effect of gender and hours of supervised library use on the achievement mean scores of the students in Mathematics does not significantly exist. This finding indicated that gender and hours of supervised library use were not significant factors in achievement mean scores of the students in Mathematics. This finding was in line with Yusuf, Zahyah and Muhajir (2018) study which revealed that library services positively influenced students' academic achievement and thus gender and use of library interaction do not exist. The present finding was in agreement with Ida (2016) findings which revealed that the students from secondary schools with libraries and enough materials were observed to perform better in CSEE than secondary schools with no libraries and enough materials due to the fact that, the availability of well equipped libraries encourage learning habits and strengthened students study skills which results to performance of the students CSEE. Vichea, Nazy, Sopanha and Socheata (2018) findings showed that there was a notable association between library usage and students' academic performance, but no gender interaction existed with library usage.

Conclusion

Based on the findings of this study, it was therefore concluded that hours of supervised library use was effective in the improvement of students' performance/achievement in English Language and Mathematics, and the effect was found to be significant. The effect of hours of supervised library use on the male and

female students' achievement in English Language was insignificant but its effect on Mathematics was not significant.

Recommendations

Based on the findings, the researcher recommends that:

1. teachers should be encouraged to employ supervised library hours in the teaching of the subjects. By so doing, the achievement of students in these subjects could be enhanced.

2. Also gender should not be a determining factor in students' achievement since it does not have a significant interaction effect on the achievement of students in these core subjects.

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