

# Teachers' Utilization of School Facilities and Academic Achievement of Student Nurses in Human Biology in Schools of Nursing in Akwa Ibom State, Nigeria

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## Abstract

The study examined the relationship between teachers' utilization of school facilities and academic achievement of student nurses in Human Biology in schools of Nursing in Akwa Ibom State. Four (4) specific objectives, four (4) research questions and four (4) null hypotheses were formulated to guide the study. Ex-post facto survey design was adopted for the study. The research population was One Hundred and Seventy Three (173) student nurses in Preliminary Training Session (PTS) in the three (3) accredited Schools of Nursing in Akwa Ibom State. The sample size of One Hundred (100) students was selected for the study using proportionate stratified random sampling technique. The researcher developed two (2) instruments tagged 'Teachers' Utilization of School Facilities Questionnaire (TUSFQ)' and 'Students' Achievement Test on Human Biology (SATHB)' used in collecting data for the study. The TUSFQ and SATHB were validated through face validity by three (3) experts in the Test and Measurement unit of Faculty of Education, University of Uyo, Uyo and three (3) other experts in Directorate of Nursing Services, Ministry of Health, Uyo respectively. The reliability coefficients of 0.82 and 0.74 for TUSFQ and SATHB respectively were established using Spearman Brown Reliability Analysis. Pearson's Product Moment Correlation (PPMC) was used for data treatment. The findings of the research revealed that there exists significant positive relationship between teachers' utilization of school facilities (library, laboratory, information and communication technology (ICT) center and recreation center) and academic achievement of student nurses in Human Biology. Based on the findings of the study, it was recommended amongst others that teachers should make good effort in incorporating the available school facilities in their pedagogical practices to develop themselves, and thereby promoting the academic growth of learners.

**Keywords:** Utilization, School Facilities, Academic Achievement

## 1. Introduction

School facilities form an integral part of the educational system and are observed as a potent factor to qualitative and quantitative education. According to Akande (1985), learning can occur through one's interaction with the environment. Environment here refers to facilities that are available to facilitate students' learning outcomes. Such environment includes the library, laboratory, Information and Communication Technology (ICT) center etc adequately equipped and properly utilized for efficient and effective learning. According to Oni (1992), facilities constitute a strategic factor in organizational functioning. This is so because they determined to a very large extent the smooth functioning of any social organization or system including schools. He further stated that their availability, adequacy and relevance influence efficiency and high productivity. In his words, Farombi (1998) opined that the wealth of a nation or society could determine the quality of education in that land; emphasizing that a society that is wealthy will establish good schools with quality teachers, learning infrastructures that with such students may learn with ease thus bringing about good academic achievement. Writing on the role of facilities in teaching and learning, Balogun (1982) submitted that no effective science education programme can exist without the availability of necessary equipment. This is because facilities enable the teachers and learners to develop problem-solving skills and scientific attitudes. Ajayi (1990) reiterated that when facilities are provided to meet relative needs of a school system, students will not only have access to the reference materials mentioned by the teacher, but individual students will also learn at their own paces. The net effect of this is increased overall academic performance of the entire students.

In his study on resource concentration, utilization and management as correlates of students' learning outcomes in Oyo state, Farombi (1998) found that the classroom learning environment in some schools was poor. He cited examples of schools without chalkboard, absence of ceiling, some roofing sheets not in place, windows and doors removed among others, a situation which the researcher regarded as hazardous to healthy living of the learners. The problem of candidates mass failure in examinations will continue until the situation of schools in the country change for the better. Commenting on why academic achievement is not in vogue in Nigeria, Adesina (1981) identified poor and inadequate facilities, obsolete teaching techniques, overcrowded classrooms among others, as factors. Throwing more light on school facilities provision, Fabunmi (1997) asserted that school facilities when provided will aid teaching-learning programme and consequently improve academic achievement of students. In his words, Ojoawo (1990), however noted that certain schools are favoured in the

allocation of facilities at the expense of others. Writing on poor performance of students in public examinations, London (1990) stated that in many developing nations certain physical facilities are none existent, and that those instances, where amenities are available many are of substandard quality. What is even more alarming is the correlation, which observers claim to exist between quality of facilities and academic performance. Lamenting on the glowing inadequacies of school facilities in our educational industry, Akinkugbe (1994) opined that everywhere you look, primary, secondary, special, technical, tertiary, there is abundant evidence of crippling inertia, criminal neglect and a pervasive decay in values and standard.

Other scholars like Wilcockson (1994), Lawal (1995) and Ajayi (1996) have variously identified the significance of facilities in teaching-learning spheres. We can say that absence or poor (and/or deteriorating) quality and lack of utilization of educational facilities can affect academic performance. Gamoran (1992), however, holding a contrary view noted that facilities, teachers' salaries, books in the library and the presence of science laboratory, had little impact on variation in student's achievement once student's background variables had been taken into account. This statement connotes that before such student could perform well in higher educational level, he must have been groomed or cushioned by availability of resources in his elementary days upon which he now uses as spring board. According to Hallack (1990), facilities form one of the potent factors that contribute to academic achievement in the school system. They include the school buildings, classrooms, accommodations, libraries, laboratories, furniture, recreational equipment, apparatus and other instructional materials. He went further to say that their availability, relevance and adequacy contribute to academic achievement. He however, quickly added that unattractive school buildings and overcrowded classrooms among others contribute to poor academic attainment. Describing where these facilities should be located, he ascribed that educational facilities should be located in appropriate places, while the needs of the users should be put into consideration.

### *1.1 Statement of the Problem*

It is one thing for facilities to be provided to schools, another thing for them to be in good conditions and the next thing is for them to be utilized to serve the purpose for which they are made available. It is quite pertinent as supported by many researchers like Bello (2012) that availability of school facilities cannot bring about improvement in students' academic performance if they are not properly utilized, even though they may be in good conditions. The problem of massive failure observed among the Preliminary Training Session (PTS) students in Human Biology Examination organized by the Directorate of Nursing Services, Ministry of Health, Uyo for all schools of Nursing in Akwa Ibom State, is identified by the researcher to be a consequence of lack of utilization or improper utilization of the available school facilities by teachers for the teaching of the subject. As could be deduced from the work of Bello (2012), poor academic performance of students will continue if proper utilization of the available school facilities is not encouraged among teachers. Based on this problem identified, the researcher picked interest in investigating the relationship between teachers' utilization of school facilities and students' academic achievement.

### *1.2 Purpose of the Study*

The major purpose of the study was to investigate on the relationship between teachers' utilization of school facilities and academic achievement of student nurses in Human Biology in Schools of Nursing in Akwa Ibom State.

Specifically, the study sought to:

1. examine the relationship between teachers' utilization of school library and academic achievement of student nurses in Human Biology;
2. examine the relationship between teachers' utilization of school laboratory and academic achievement of student nurses in Human Biology;
3. examine the relationship between teachers' utilization of school Information and Communication Technology (ICT) center and academic achievement of student nurses in Human Biology;
4. examine the relationship between teachers' utilization of school recreation center and academic achievement of student nurses in Human Biology.

### *1.3 Significance of the Study*

It is anticipated that this research would help to create useful information to the Nursing and Midwifery Council of Nigeria (NMCN), the Directorates of Nursing Services and Schools of Nursing.

To the Nursing and Midwifery Council of Nigeria (NMCN), the findings of this study would bring to her awareness that school facilities kept as monuments for accreditation purpose alone is not helping the academic growth of her institutions, thus the extent to which these facilities are utilized should also be taken into consideration when on the assignment of accrediting schools.

The Directorates of Nursing Services would also get to know the importance of ensuring that the

available facilities in Schools of Nursing are adequately utilized, and also ensure that personnel employed to see to the functionality of these facilities are delivering their services effectively.

Schools where these facilities are sited would realize through the results of this research that making these facilities an integral part of the system in terms of utilization is of great importance to the academic benefit of the students.

#### *1.4 Research Questions*

The following research questions were raised to guide the study:

1. What is the relationship between teachers' utilization of the school library and academic achievement of student nurses in Human Biology?
2. What is the relationship between teachers' utilization of school laboratory and academic achievement of student nurses in Human Biology?
3. What is the relationship between teachers' utilization of school Information and Communication Technology (ICT) center and academic achievement of student nurses in Human Biology?
4. What is the relationship between teachers' utilization of school recreation center and academic achievement of student nurses in Human Biology?

#### *1.5 Hypotheses*

The following null hypotheses were formulated to guide the investigation:

- H<sub>01</sub>: There is no significant relationship between teachers' utilization of school library and academic achievement of student nurses in Human Biology.
- H<sub>02</sub>: There is no significant relationship between teachers' utilization of school laboratory and academic achievement of student nurses in Human Biology.
- H<sub>03</sub>: There is no significant relationship between teachers' utilization of school Information and Communication Technology (ICT) center and academic achievement of student nurses in Human Biology.
- H<sub>04</sub>: There is no significant relationship between teachers' utilization of school recreation center and academic achievement of student nurses in Human Biology.

#### *1.6 Delimitation of the Study*

The study was delimited to investigating the relationship between teachers' utilization of school facilities and academic achievement of Preliminary Training Session (PTS) student nurses in Human Biology in Schools of Nursing in Akwa Ibom State. The facilities that were taken into consideration were library, laboratory, Information and Communication Technology (ICT) and recreation centers.

#### *1.7 Limitation of the Study*

The research work was constrained by blurred answers entered by few of the students for some of the multiple choice questions in the achievement test.

## **2. Methodology**

Ex-post facto (causal-comparative design) was adopted for the study. The design was suitable because the study sought to establish the relationship between teachers' utilization of school facilities and students' academic achievement, where the independent variable (teachers' utilization of school facilities) had already occurred and cannot be manipulated.

### *2.1 Population of the Study*

The population of the study consisted of all student nurses in Preliminary Training Session (PTS) in the three (3) Schools of Nursing in Akwa Ibom State, which was One Hundred and Seventy Three (173) students.

### *2.2 Sample and Sampling Technique*

The sample size of One Hundred (100) students was selected from the population for the study using proportionate stratified random sampling technique. The randomization was done through balloting without replacement.

### *2.3 Instrumentation*

Two (2) instruments namely; 'Teachers' Utilization of School Facilities Questionnaire' (TUSFQ) and 'Students' Achievement Test on Human Biology' (SATHB) were developed by the researcher for the collection of data for the study.

The Teachers' Utilization of School Facilities Questionnaire (TUSFQ) consisted of twenty (20) items

distributed into four (4) sections; A, B, C, and D, to collect data on Teachers' Utilization of School Library, School Laboratory, School Information and Communication Technology (ICT) Center and School Recreation Center respectively. Each section consisted five (5) items. The items were close-ended placed on 4-point Likert's scale of, Strongly Agree (SA) with 4 points; Agree (A) with 3 points; Disagree (D) with 2 points; and Strongly Disagree (SD) with 1 point.

The Students' Achievement Test on Human Biology (SATHB) used to collect data on students' achievement consisted of twenty (20) multiple choice test items with options A, B, C, D and E for each. One (1) mark was allocated to each question.

#### 2.4 Statistical Treatment of the Data

The researcher who aimed at establishing the relationship between teachers' utilization of school facilities and academic achievement of student nurses in Human Biology in Schools of Nursing in Akwa Ibom State, correlated the scores obtained on teachers' utilization of school facilities with students' achievement test scores on Human Biology using Pearson's Product Moment Correlation (PPMC) to find the coefficient  $r$ , in order to answer the research questions and the hypotheses tested at 0.05 alpha level of significance.

### 3. Data Analysis, Results and Discussion of Findings

The four research questions raised to guide the study are answered first.

#### 3.1 Answering of Research Questions

##### 3.1.1 Research Question One

What is the relationship between teachers' utilization of school library and academic achievement of student nurses in Human Biology?

Table 1: Pearson's Product Moment Correlation ( $r$ ) of Teachers' Utilization of School Library and Academic Achievement of Student Nurses in Human Biology

Variables	N	$\sum x$ $\sum y$	$\sum x^2$ $\sum y^2$	$\sum xy$	$r$
Teachers' utilization of school library (x)		1381	20107	17903	.458*
Vs	100				
Academic achievement of student nurses (y)		1268	16532		

Table 1 shows a correlation coefficient ( $r$ ) of 0.458. This reveals that the relationship between teachers' utilization of school library and student nurses' academic achievement in Human Biology is positive, meaning that as teachers' utilization of school library increases, so the academic achievement of student nurses' in Human Biology increases.

The analysis also reveals the strength of linear association between teachers' utilization of school library and student nurses' academic achievement in Human Biology as  $r^2 = 0.2098$ . This implies that 20.98% of student nurses' academic achievement in Human Biology is associated with teachers' utilization of school library.

##### 3.1.2 Research Question Two

What is the relationship between teachers' utilization of school laboratory and academic achievement of student nurses in Human Biology?

Table 2: Pearson's Product Moment Correlation ( $r$ ) of Teachers' Utilization of School Laboratory and Academic Achievement of Student Nurses in Human Biology

Variables	N	$\sum x$ $\sum y$	$\sum x^2$ $\sum y^2$	$\sum xy$	$R$
Teachers' utilization of school laboratory (x)		1543	24735	19990	.488*
Vs	100				
Academic achievement of student nurses (y)		1268	16532		

It is indicated in Table 2 above that the correlation coefficient ( $r$ ) between teachers' utilization of school laboratory and student nurses' academic achievement in Human Biology is 0.488. This is a positive relationship which means that as teachers' utilization of school laboratory increases, the student nurses' academic achievement in Human Biology also increases.

In addition, the analysis reveals strength of linear association ( $r^2$ ) between teachers' utilization of school laboratory and student nurses' academic achievement in Human Biology to be 0.2382. This implies that teachers' utilization of school laboratory accounts for 23.82% of student nurses' academic achievement in Human Biology.

### 3.1.3 Research Question Three

What is the relationship between teachers' utilization of school information and communication technology (ICT) center and academic achievement of student nurses in Human Biology?

Table 3: Pearson's Product Moment Correlation (r) of Teachers' Utilization of School Information and Communication Technology (ICT) Center and Academic Achievement of Student Nurses in Human Biology.

Variables	N	$\sum x$ $\sum y$	$\sum x^2$ $\sum y^2$	$\sum xy$	R
Teachers' Utilization of school ICT center (x) Vs Academic achievement of student nurses (y)	100	1600	26620	20847	.316*

Table 3 shows a correlation coefficient (r) of 0.316. This reveals that the relationship between teachers' utilization of school information and communication technology (ICT) center and student nurses' academic achievement in Human Biology is positive, meaning that as teachers' utilization of school ICT center increases, so the academic achievement of student nurses' in Human Biology increases.

The analysis also reveals the strength of linear association between teachers' utilization of school information and communication technology (ICT) center and student nurses' academic achievement in Human Biology as  $r^2 = 0.0999$ . This implies that 9.99% of student nurses' academic achievement in Human Biology is associated with teachers' utilization of school ICT center.

### 3.1.4 Research Question Four

What is the relationship between teachers' utilization of school recreation center and academic achievement of student nurses in Human Biology?

Table 4: Pearson's Product Moment Correlation (r) of Teachers' Utilization of School Recreation Center and Academic Achievement of Student Nurses in Human Biology.

Variables	N	$\sum x$ $\sum y$	$\sum x^2$ $\sum y^2$	$\sum xy$	r
Teachers' utilization of school recreation center (x) Vs Academic achievement of student nurses (y)	100	1334	18154	17094	.572*

It is indicated in Table 4 above that the correlation coefficient (r) between teachers' utilization of school recreation center and student nurses' academic achievement in Human Biology is 0.572. This is a positive relationship which means that as teachers' utilization of school recreation center increases, the student nurses' academic achievement in Human Biology also increases.

Furthermore, the analysis also reveals the strength of linear association ( $r^2$ ) between teachers' utilization of school recreation center and student nurses' academic achievement in Human Biology to be 0.3272. This implies that teachers' utilization of school recreation center accounts for 32.72% of student nurses' academic achievement in Human Biology.

## 3.2 Testing of Hypotheses

The four null hypotheses formulated to guide the research were tested and the results are presented as follows.

### 3.2.1 Hypothesis One

There is no significant relationship between teachers' utilization of school library and academic achievement of student nurses in Human Biology.

Table 5: Pearson's Product Moment Correlation (r) of Teachers' Utilization of School Library and Academic Achievement of Student Nurses in Human Biology

Variables	N	$\sum x$ $\sum y$	$\sum x^2$ $\sum y^2$	$\sum xy$	r-cal	r-crit	df	Result
Teachers' utilization of school library (x) Vs Academic achievement of student nurses (y)	100	1381	20107	17903	.458*	.195*	98	Significant

Table 5 shows that the calculated r-value of .458 is greater than the critical r-value of .195 at 98 degrees of freedom and 0.05 alpha level of significance, hence the null hypothesis is rejected. Therefore there is a significant positive relationship between teachers' utilization of school library and students' academic achievement in Human Biology.

### 3.2.2 Hypothesis Two

There is no significant relationship between teachers' utilization of school laboratory and academic achievement

of student nurses in Human Biology.

Table 6: Pearson's Product Moment Correlation (r) of Teachers' Utilization of School Laboratory and Academic Achievement of Student Nurses in Human Biology

Variables	N	$\sum x$ $\sum y$	$\sum x^2$ $\sum y^2$	$\sum xy$	r-cal	r-crit	df	Result
Teachers' utilization of school laboratory (x) Vs Academic achievement of student nurses (y)	100	1543	24735	19990	.488*	.195*	98	Significant

Table 6 shows that the calculated r-value of .488 is greater than the critical r-value of .195 at 98 degrees of freedom and 0.05 alpha level of significance, hence the null hypothesis is rejected. Therefore there is a significant positive relationship between teachers' utilization of school laboratory and students' academic achievement in Human Biology.

### 3.2.3 Hypothesis Three

There is no significant relationship between teachers' utilization of school information and communication technology (ICT) center and academic achievement of student nurses in Human Biology.

Table 7: Pearson's Product Moment Correlation (r) of Teachers' Utilization of School Information and Communication Technology (ICT) Center and Academic Achievement of Student Nurses in Human Biology.

Variables	N	$\sum x$ $\sum y$	$\sum x^2$ $\sum y^2$	$\sum xy$	r-cal	r-crit	df	Result
Teachers' Utilization of school ICT center (x) Vs Academic achievement of student nurses (y)	100	1600	26620	20847	.316*	.195*	98	Significant

Table 7 shows that the calculated r-value of .316 is greater than the critical r-value of .195 at 98 degrees of freedom and 0.05 alpha level of significance, hence the null hypothesis is rejected. Therefore there is a significant positive relationship between teachers' utilization of school information and communication technology (ICT) center and students' academic achievement in Human Biology.

### 3.2.4 Hypothesis Four

There is no significant relationship between teachers' utilization of school recreation center and academic achievement of student nurses in Human Biology.

Table 8: Pearson's Product Moment Correlation (r) of Teachers' Utilization of School Recreation Center and Academic Achievement of Student Nurses in Human Biology

Variables	N	$\sum x$ $\sum y$	$\sum x^2$ $\sum y^2$	$\sum xy$	r-cal	r-crit	df	Result
Teachers' utilization of school recreation center (x) Vs Academic achievement of student nurses (y)	100	1334	18154	17094	.572*	.195*	98	Significant

Table 8 shows that the calculated r-value of .572 is greater than the critical r-value of .195 at 98 degrees of freedom and 0.05 alpha level of significance, hence the null hypothesis is rejected. Therefore there is a significant positive relationship between teachers' utilization of school recreation center and students' academic achievement in Human Biology.

## 3.3 Discussion of the Findings

Findings of the study are discussed based on the specific objectives of the research accordingly.

### 3.3.1 Teachers' Utilization of School Library and Academic Achievement of Student Nurses in Human Biology

The result obtained on teachers' utilization of school library and academic achievement of student nurses in Human Biology revealed that there is significant positive relationship between the variables (Table 5). However, library is the heartbeat of any academic institution, without it the school system is defective. Library is an essential factor in teaching-learning process. It forms one of the most important educational services. The educational process functions in a world of books. The chief purpose of a school library is to make available to teachers and students at their easy convenience, all books, periodicals and other reproduced materials which are of interest and value to them. As an information resource center, it is believed to enrich teachers' knowledge of the subject matter, and consequently would impact on students' academic achievement. Thus, this finding is not

in doubt; it is also in consonance with the findings of other related research works.

Supporting the finding, Lancaster (1941) drew the conclusion that teachers should be capable users of libraries, in order to keep abreast of the times in their fields of subject-matter and in best educational theory and practice, which in turn has a positive influence on students' academic outcome.

Knowing the relationship between library and academic achievement, the Government in the National Policy on Education, NPE (2013) provided that every state should make available funds for installation of functional libraries in all her educational institutions.

### 3.3.2 Teachers' Utilization of School Laboratory and Academic Achievement of Student Nurses in Human Biology

The result obtained on teachers' utilization of school laboratory and academic achievement of student nurses in Human Biology showed significant positive relationship between the variables (Table 6). It is pertinent to obtain such result, as the role played by the laboratory in the educational setting is quite enormous. It is a fact that 'we learn by doing', thus the laboratory where theoretical concepts are practicalized becomes more important at school level as scientific practices and applications are rendered more meaningful. Commenting on the role of the laboratory, Ango (1986) stated that laboratory work, stimulates learners' interests as they are made to personally engage in useful scientific activities and experimentation; promotes that science is not only products or process; affords the learners the basic skills and scientific method of problem solving; and knowledge obtained through laboratory work promotes long term memory.

In agreement with the finding, United Nation Education Scientific and Cultural Organization, UNESCO (2008) concluded that practical teaching and learning relate positively with academic achievement, holding that an object handled impresses itself more firmly on the mind than the object merely seen from a distance or in an illustration.

### 3.3.3 Teachers' Utilization of School Information and Communication Technology (ICT) Center and Academic Achievement of Student Nurses in Human Biology

In this modern time, attention is shifted from the manual way of doing things to the use of computers, even in pedagogical practices. The research result on teachers' utilization of school information and communication technology (ICT) center and academic achievement of student nurses in Human Biology indicated that there is significant positive relationship between the variables (Table 7). This finding is not a consensus one, the literature is with mixed results. Some researchers such as Bartlett and Daniel (2004), and Fushs and Woessmann (2004) support this finding, but in the contrary researchers like Coates and Humphreys (2004), and Brown and Liedholm (2002) demonstrated that there is no significant correlation between the variables.

Explaining the reason for the mixed results, Trucano (2005) claimed that while the use of information and communication technologies (ICTs) may promote understanding of a discussion about difficult concepts (especially through the display of simulations), such uses of ICTs can re-enforce traditional pedagogical practices and divert focus from the content of what is being discussed or displayed to the tool being utilized.

In addition, the mixed results may have been due to extraneous variables such as the teachers' knowledge of the subject matter and competence in the use of computer-aided instruction teaching method.

### 3.3.4 Teachers' Utilization of School Recreation Center and Academic Achievement of Student Nurses in Human Biology

Based on the result obtained on teachers' utilization of school recreation center and academic achievement of student nurses in Human Biology as presented in Table 8, a big deal of relationship is observed between the variables. However, the finding supports the fact that the play-way teaching method triggers learners' interest and improves learning.

There is a consensus finding on this matter, and researchers like Chukwuka (2013) after a careful study concluded that relevant recreational activities should be encouraged in the school system as they have direct impact on students' achievement.

## 4. Conclusion and Recommendations

Based on the data analyzed, findings and discussion made it is concluded that there is significant positive relationship between teachers' utilization of school facilities (library, laboratory, information and communication technology (ICT) center, and recreation center) and academic achievement of student nurses in Human Biology in Akwa Ibom State.

Based on the conclusion drawn the following recommendations are proffered:

1. Teachers should be trained and/or retrained on the use of school facilities to ensure their adequacy in using them, particularly those sophisticated ones; because we cannot talk about teachers' utilization of these facilities when they are not conversant with them.
2. Teachers should make good effort in incorporating the available school facilities in their pedagogical practices to develop themselves, and thereby promoting the academic growth of learners.
3. Respective bodies should ensure that school facilities are in good conditions to serve the purpose by

which they are made available.

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