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## Utilization of School Plants and Effective Teaching and Learning in a Contemporary Society

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**Abstract:** The study investigated utilization of school plants and effective teaching and learning in a contemporary society. Two objectives, two research questions and two hypotheses guided the study. A correlational research method was employed in carrying out the study. The population of the study comprised of six thousand eight hundred and ninety-three (6,893) teachers from all the 286 public senior secondary schools in Rivers State. The stratified random sampling technique was used to select seven hundred (700) teachers from ten (10) schools in 12 out of the 23 local government areas representing 10% of the population. The instrument for this study was a questionnaire which was divided into two sections titled "Utilization of School Plants Questionnaire (USPQ)" and "Utilization of School Plant and Effective Teaching and Learning (USPETL)". Pearson Product Moment Correlation Coefficient was used to obtain the reliability of 0.81. Mean and standard deviation were used to answer the research questions while Pearson Product Moment Correlation was used to test the hypothesis at 0.05% confidence level. The findings revealed that there is a significant relationship between utilization of school plants and effective teaching and learning. The study therefore concluded that utilization of school plants by teachers for effective teaching and learning, increases students' level of assimilation and contribute greatly to the achievement of educational goals in a contemporary society. It was recommended among others that the government should improve innovations of the school buildings and laboratory equipment to meet the needs of a contemporary society.

**Keywords:** Utilization, School plants, public senior secondary schools, Contemporary society.

### 1. Introduction

Education is an instrument useful for growth and development in a contemporary society. The Federal Republic Nigeria, FRN (2014) added that education shall continue to be highly rated in the development plans because education is an instrument per excellence that affects national development. This assertion has been verified when we look at the roles educated people play in developing major areas in the society which in turn has

improved the lives of many individuals and the country at large. The goal of teaching and learning is to bring about changes in the learners for creative thinking, acquisition of skills, competencies etc. Teaching and learning is not accomplished if the school plants are not in place, properly utilized and maintained to achieve the purpose of education.

Many, researchers are of the view that some of the issues that affect productive achievement of students' learning outcome like physical environment, availability of educational facilities, motivation etc. The government should apply corrective measures like adequate provision of educational facilities like instructional materials, library materials, buildings, human resources etc. A well-planned and designed school building with functional array of teaching aids gives the learners maximum understanding of the curriculum which enhances academic achievement. Thus, school plants include all the physical facilities and instructional facilities which support the achievement of educational goal. Nwankwoala (2018) in her recognition of the need for school plants for effective performance of educational programmes noted that for effective teaching and learning to take place, school plants and educational goals should be viewed as being closely intertwined and symbiotic.

Apart from protecting teachers and students from the weather conditions, the school buildings represent a learning environment which has a tremendous impact on the comfort, safety and performance of the teachers and students. It is only when these are assured that school plant become very important in the achievement of educational objectives. Societies all over the world accordingly establish schools for the achievement of a wide variety of goals. A great deal of resources is committed towards the achievement of the above goals. Unfortunately, the social expectations in terms of goal achievement are hardly met due to inadequate school plant. Part of these could be explained by the absence of the appropriate and conducive learning environment, facilitated by poor school plant management and utilization. The importance attached to school plant implies that not only should they be provided but should also be well-managed and properly utilized. The responsibility of effective utilization of school plant in secondary schools-rests on the teachers and students.

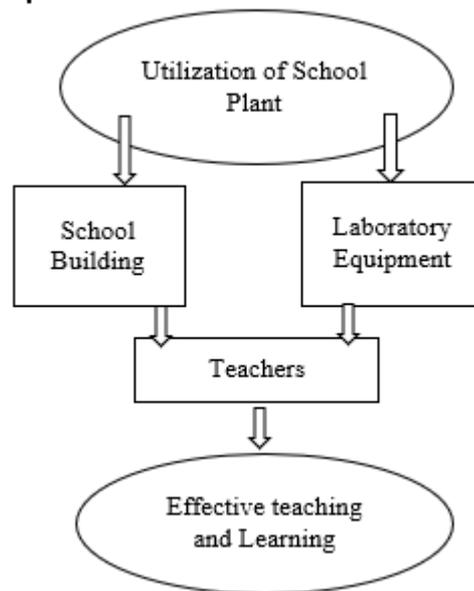
It is the duty of the school administrators to ensure that the school plant is ready for use as at when due and that they are correctly used for the purpose for which it is meant. This is important in order to prevent any disruption of educational programs. It has been noted that using school plant (equipment and buildings) in the right manner prolongs the life spans and prevents avoidable damage. Today many of our secondary schools are in a situation of disrepair. Most of our secondary schools have dilapidated buildings, cracked walls, broken windows and leaking roofs due to poor maintenance culture of the buildings. The available classrooms are poorly ventilated with no source of power. Students scarcely find chairs to sit and teachers find it difficult to achieve effective teaching. Teaching equipment of all sorts is increasingly in short supply in schools. Most of the secondary schools teach science, agricultural science, ICT, basic technology etc. without carrying out practical experiments in such subjects. It is against this background that the researcher was motivated to investigate the utilization of school plants in public secondary school and effective teaching and learning in a contemporary society.

## **1.1 Conceptual Framework**

### **School Plant Utilization in a Contemporary Society**

Utilization is the degree to which an item has been put into use effectively. Notably, where some school plants are not maximally used, it then referred as under-utilized. Ibara (2018) stated that school plant utilization is the capacity to effectively put equipment, building, school field, compound and other equipment which belongs to the school into optimal use without entertaining wastage. In the school system, the availability of school plants is one thing another thing is the ability to put the plants in their optimum utilization for the achievement and implementation of educational goals. Owmondah (2018) observed that in many parts of Nigeria today, there are many structures, dilapidated, uncompleted buildings with or without equipment for teaching and learning. There are also equipment and materials which cannot be used because there are no rooms, workshops and laboratories where they can be put into for effective usage. Categorically, for these school plants to be optimally, structures must be created to house and protect them from weather conditions. Isoken and Adeyemi (2017) posited that for a professionally qualified teacher in subjects related to practical no matter how well trained would not be able to put ideas into practice if the school settings lack the equipment and materials necessary for him to translate his competency into reality. For maximum utilization

of school plants, its provision must take into account the present number of total enrollment in the school as well as the future projections of enrolment (Okoroma, 2005).



**Fig. 1 - Researchers Concept**

Many of the schools have remained static. Oni (2005) opined that the availability and adequacy in quantity and quality of school plants make it possible for the smooth running of a school which will in turn help in achieving higher educational attainment. To achieve adequate utilization of school plants, there must adequate provision of plant, well qualified teaching staff with experience and students inborn qualities. Akinsolu (2011) posited that the extent of acquisition of skills, attitudes and knowledge which will be significant in life is dependent on the quality of teaching and learning activities teachers provide for learners to interact with which is dependent on the nature and quantity of school plant at the disposal of the teacher. Igwe (2018) stated that school buildings can aid or hinder teaching and learning. Physical facilities like light, space, equipment can make people valued. This affects their behavior and attitudes and can significantly improve or thwart the teaching and learning process.

### **Teaching in a Contemporary Society**

Ikpa (2019) teaching is a conscious and deliberate effort by an experienced individual (teacher) to impart knowledge, information and skills to a learner with the aim of inducing learning. Koko (2003) defined teaching as a purposeful act directed towards the achievement of a target goal. According to Agabi (2014) teaching is a process of knowledge sharing that may or may not involve the services of a professional teacher. In this concept, the outcome of teachings is determined by the process or by techniques of the teacher. Teaching is also a conscious work by a qualified person (teacher) who has received some skills, knowledge and information to transfer his/her wealth of experience to learners/students. A good teacher objective is impartation of knowledge to as many students using different strategies and methods to produce well-adjusted and integrated individuals who are willing to be responsible members of the society. Teaching is a deliberate effort by experienced personnel to impart worthwhile values, information, skills, knowledge etc. to an immature or less experienced person. Common concepts in teaching according to (Agabi, 2014) include:

- 1) Indoctrination
- 2) Training
- 3) Conditioning

Teaching is not just about issuing instruction it is a guiding process directed at assisting others to learn. In a contemporary society, the teacher makes learning fun in order to minimize disciplinary problems. The use of negative reinforcement is not allowed so that learner's morale will not be killed.

Learning behaviour comprises of a collective-activities displayed by the learner. This is different at the point in time they begin to participate in the teaching-learning process. This varies during the process and finally at the end of the process. For this study, we are concerned with the entry and terminal behavior of learners which is assessed by the teacher. Entry behaviour by (Adiele et al., 2010) comprises the activities and responses the learners display after the completion of the teaching-learning process. Hence, the change in behaviour after the process of teaching and learning will give rise to terminal behaviour.

Laboratory activities have a distinctive and central role they play in the curriculum and the lives of the learners. A laboratory in a school is a place where all the tools or instruments needed to make practical subjects relevant are kept for maximum utilization. Laboratory teaching undertakes first-hand experience in the observation and manipulation of materials related to practical subjects to other methods of developing understanding and appreciation. Okenwa (2014) reported that laboratory instruction increases students' problem-solving ability and is a valuable instructional technique. The equipment is usually provided by the government and distributed to public schools. However, the effectiveness of the government to procure and distribute these resources has been occasionally questioned. (Igwe, 2008) observed that the distribution of resources is lopsided in favour of schools in the urban areas. Agabi (2014) also found out that the distribution of computers and telecommunication gadgets in Nigerian schools is inadequate and poorly planned.

School plants are the most essential tools or facilities required in an educational system which assists in achieving the goals of secondary education. Conspicuous differences have been observed in the educational system in Nigeria on the utilization of school plants. This difference is in the way educational systems enrol students in the different schools without any improvement in the school plants in the various institutions. Some of our educational institutions have been in existence from the late 60's till date. Little or no improvement has taken place on the school plants provided in the schools. This has affected the utilization of the some school plants. Some of these school plants are obsolete, dilapidated or in a bad working condition which tells more the student's learning outcome. It is against this backdrop that this study critically investigated the opinion of teachers on the utilization of school buildings and laboratory equipment for effective teaching and learning if such views are favourable or unfavourable.

The purpose of the study is to critically investigate teachers' utilization of school plants and effective teaching and learning in contemporary society. In specific terms, the study seeks to achieve the following:

- 1) Examine the extent teachers' utilization of school buildings enhances effective teaching and learning in contemporary society.
- 2) Determine the extent teachers' utilization of laboratory equipment enhances effective teaching and learning in contemporary society.

## **2. Methodology**

The study adopted a correlational research design. This design is appropriate because it describes the degree to which two or more qualitative variables or traits for the same individual are related. The population of the study was six thousand eight hundred and ninety-three (6,893) teachers from all 286 public senior secondary schools in Rivers State. The teachers are the subjects used in the study. The sample of the study comprised seven hundred (700) teachers from the 286 public senior secondary schools in Rivers State. The stratified random sampling technique was used in choosing the members that took part in the study giving 10% of the population. The instrument for this study was a questionnaire which was divided into two sections titled "Utilization of School Plants Questionnaire (USPQ)" and "Utilization of School Plant and Effective Teaching and Learning (USPETL)". Section A was used to generate the demographic information, Section B measures teachers' utilization of school plants while Section C measures utilization and dimensions of effective teaching and learning. The content and face validity were adopted to ensure the validity of the questionnaire. A test-retest method was adopted to assess the reliability of the instrument. By this method, ten (10) copies of the instrument were administered to ten (10) schools outside the sample area. After two weeks, fresh copies of the same instrument were administered to the same subjects. The scores of the two sets of tests were correlated using the Cronbach Alpha Statistics which yielded a correlation coefficient of 0.81. The research

instrument was administered by the researcher and two assistants to the teachers of the selected secondary schools and collected after one week. Seven hundred (700) questionnaires were administered and seven hundred were returned and used for data analysis. This represented a 100% return rate. Mean and standard deviation were used to answer the research questions while Pearson Product Moment Correlation was used to test the research hypotheses at a 5% level of significance.

### 3. Results and Analysis

This part considered the presentation, analysis and interpretation of the data gathered. It focused on the analysis of the data collected from the respondents.

**Research Question 1:** To what extent does teachers' utilization of school buildings enhance effective teaching and learning in contemporary society?

**Table 1 - The Items on the Extent of Teachers' Utilization of School Building in a Contemporary Society**

S/N	Variables	$\bar{x}$	S.D	Remark
1	The utilization of school buildings will remove fatigue from teachers hence ensuring a conducive environment for teaching and learning	3.74	0.60	VHE
2	The utilization of staff rooms will help the teacher to write down his/her expectations hence ensuring teachers' coordination for teaching and learning	3.26	0.80	VHE
3	Utilization of laboratories helps to show the teacher's competence hence increasing students; academic performance for effective teaching and learning	2.51	0.89	HE
4	Utilization of conveniences will help the teachers and students to give total concentration to their work hence promoting teachers' and students' health for effective teaching and learning	2.54	0.89	HE
5	Utilization of staff quarters will enhance teachers' well-being hence ensuring effective teaching and learning	2.53	0.85	HE
<b>Grand Mean</b>		2.92	0.81	HE

AU = Adequately Utilized (4 points); U = Utilized (3 points); PU = Poorly Utilized (2 points); NU = Not Utilized (1 point) Criterion Mean = 2.5. In Table 1 five (5) items were assessed to determine how they enhance effective teaching and learning in a contemporary society. The result of the study revealed that all the items assessed have mean scores which range between 2.51 to 3.74 respectively. Since all the mean scores were above the criterion mean of 2.50 indicating that to a high extent, they enhance effective teaching and learning in contemporary society. The result of the data indicates that the utilization of school buildings (3.74), utilization of staff rooms (3.26), utilization of laboratories (2.51), utilization of conveniences (2.54) and utilization of staff quarters (2.53) they all enhance effective teaching and learning in a contemporary society. Besides, the grand mean score of (2.92) shows that to a high extent staff utilization of school building enhances effective teaching and learning in a contemporary society.

**Research Question 2:** To what extent does teachers' utilization of laboratory equipment enhance effective teaching and learning in contemporary society?

**Table 2. Respondents Answer to the Items on the Extent of Teachers' Utilization of Laboratory Equipment in a Contemporary Society**

S/N	VARIABLES	$\bar{x}$	S.D	REMARK
6.	Utilization of Biology equipment will improve learners knowledge hence enhancing effective teaching and learning	3.29	0.94	VHE
7.	Utilization of physics equipment will enhance learners' understanding and scope.	2.52	0.84	HE
8.	Utilization of chemistry equipment will enhance teachers' competence hence ensuring effective knowledge acquisition	2.55	0.85	HE
9.	Utilization of home economics equipment by the teachers will enhance skills and abilities	3.47	0.70	VHE
10.	Utilization of ICT equipment by the teachers will enhance teacher expectations and hence ensure effective teaching and learning.	2.55	0.82	HE
	<b>Grand Mean</b>	2.88	0.83	HE

In Table 1.2, five (5) items were assessed to determine how they enhance effective teaching and learning in contemporary society. The result of the study revealed that all the items assessed have mean scores which range between 2.52 to 3.47 respectively. Since all the mean scores were above the criterion mean of 2.50 indicating that to a high extent, they enhance effective teaching and learning in contemporary society. The result of the data indicates that the utilization of Biology equipment (3.29), utilization of physics equipment (2.52), utilization of chemistry equipment (2.55), utilization of home economics equipment (3.47) and utilization of ICT equipment (2.55) they all enhance effective teaching and learning in a contemporary society. Besides, the grand mean score of (2.88) shows that to a high extent staff utilization of laboratory equipment enhances effective teaching and learning in contemporary society.

### Research Hypotheses

**Hypothesis One:** There is no significant relationship between teachers' utilization of school building and effective teaching and learning in contemporary society

**Table 3. Pearson Product Moment Correlation of the relationship between teachers' utilization of school building and effective teaching and learning in a contemporary society**

		School building	Effective teaching and learning
School building	Pearson Correlation	1	.813**
	Sig. (2-tailed)		.000
	N	700	700
Effective teaching & learning	Pearson Correlation	.813**	1
	Sig. (2-tailed)	.000	
	N	700	700

\*\* . Correlation is significant at the 0.05 level (2-tailed).

The result of the data in Table 1.3 shows the coefficient of the relationship between the utilization of school building and effective teaching and learning in a contemporary society However, ( $r = .813$ ); the result showed that there is a positive and strong relationship between utilization of school building and effective teaching and learning in a contemporary society with p-value ( $0.01 < 0.05$ ). This revealed that the null hypothesis was rejected at a 0.05 level of significance. The conclusion therefore is that there is a significant relationship between the utilization of school building and effective teaching and learning in contemporary society.

**Hypotheses Two:** There is no significant relationship between teachers' utilization of laboratory equipment and effective teaching and learning in contemporary society.

**Table 4: Pearson Product Moment Correlation of the relationship between teachers' utilization of laboratory equipment and effective teaching and learning in a contemporary society**

		Laboratory equipment	Effective teaching and learning
Laboratory equipment	Pearson Correlation	1	.822**
	Sig. (2-tailed)		.000
	N	700	700
Effective teaching and learning	Pearson Correlation	.822**	1
	Sig. (2-tailed)	.000	
	N	700	700

\*\* . Correlation is significant at the 0.05 level (2-tailed).

The result of the data in Table 1.4 shows the coefficient of the relationship between utilization of laboratory equipment and effective teaching and learning in contemporary society. However, ( $r = .822$ ); the result showed that there is a positive and strong relationship between utilization of laboratory equipment and effective teaching and learning in a contemporary society with p-value ( $0.01 < 0.05$ ). This revealed that the null hypothesis was rejected at a 0.05 level of significance. The conclusion therefore is that there is a significant relationship between the utilization of laboratory equipment and effective teaching and learning in contemporary society.

#### 4. Discussion and Findings

The research generated a lot of findings regarding teachers' utilization of school plants for effective teaching and learning in contemporary society. The findings from research question one indicated that classrooms and staff offices are utilized to a very high extent. The laboratories, conveniences and staff quarters are utilized to a low extent. This is in line with Akinsolu (2005) that stated most secondary schools have dilapidated buildings with broken doors and windows, non-functional conveniences and poor security systems in the school premises it making it impossible for teachers to utilized most of the school plants. Ajao (2001) supports the above view by saying that the lack of funding and maintenance culture of school plants has led to the inability of their utilization. In research question two, biology and home economics equipment were utilized to a very high extent while physics, chemistry and ICT equipment were lowly utilized. This is in relation to Okoroma (2005) which states that school plant provision is like a mirror reflecting the image of the school. Igwe (2008) agrees with the above by affirming that the government inability to procure and distribute equipment equitably in most of our public schools makes it inept for utilization. The quality and quantity provided determines the rate of utilization.

The findings from the result on the relationship between utilization of school plants and effective teaching and learning in public senior secondary schools in River state indicated a high positive correlation which was significant. This shows that there is a significant relationship between utilization of school plants and effective relationship between teaching and learning. The findings seems-to postulate that teachers gain competence and achieve a good result when they have a conducive classroom and staff office, laboratories where student ability to collaborate effective in carrying out the teacher's desired aim is achieved is put in place with a functional convenience effective teaching and learning will yield a good outcome. This study is consistent with early findings by Jimoh (2017) who found out that proper teaching and learning cannot take place without infrastructures like classroom, equipped laboratory, convenience etc. that will help the instructor drive home his points.

The study also indicated that there is significant relationship between teachers' utilization of laboratory equipment for effective teaching and learning in a contemporary society. In other words, it shows that the

utilization of laboratory equipment is a good predictor of effective teaching and learning process. This collaborates with koko (2013) which states that there is significant relationship between students' science achievement, availability and utilization of laboratory resources and classes. It shows that utilization of laboratory and other educational materials in the school, students will perform better in achieving their various educational goals. The researcher also confirmed (Ikpa, 2019) who found out that physical resource utilization was responsible for the improved performance of students in WAEC.

## 5. Conclusion

Utilization of school plants ensures that there is no wastage and is strategic to the achievement of educational goals. Where school plants are used for the purposes that they were not made for, it could result to wastage, under-utilization or over-utilization. This exercise of teachers' utilization of school plants provides students the opportunity to turn their theoretical and practical experiences into practice through constant interaction with the school plants. However, the study therefore concluded that when teachers'-utilize school plants for effective teaching and learning, it will increase students' level of assimilation and contribute greatly to the achievement of educational goal. On the other hand, it was observed that upon the benefits derived from the utilization of school plant, there are still some challenges faced by teachers'-in the course of utilization which include among others, nature of the facility, skills and carefulness of users, poor supervision of school plants, community intrusion into the school compound etc.

## 6. Recommendation

Considering the findings of this study, the following recommendations were made:

- 1) The government should improve innovations on the school buildings and laboratory equipment to meet the need of a contemporary society.
- 2) The government should release funds to the administrators to assist in the management of the school plants.

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