

# Management of Modern Technologies for Quality Educational Delivery in Public Universities in Rivers State, Nigeria

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**Abstract:** The study was spurred by poor maintenance and inadequate provision of modern technologies in universities in Rivers State, hence the need to manage the few modern ones available for quality educational delivery in public universities in Rivers State, Nigeria. The study was guided by three research questions and three hypotheses. Adopting an analytic descriptive design, the population consisted of all the 2,330 Senior Lecturers in the three Universities in Rivers State, out of which a sample size of 349 was drawn, using stratified random sampling technique representing 15% of the population. A researcher-made instrument, titled *Management of Modern Technologies for Quality Educational Delivery Scale (MMTQEDS)* with 34 items was used. Face validity was ensured by experts in the relevant areas. The internal consistency reliability coefficient of 0.89 for MMTQEDS was computed, using Cronbach Alpha statistical method. Mean and standard deviation were used to answer the research questions, while One-way Analysis of Variance (ANOVA) was used to test the null hypotheses at 0.05 alpha level of significance. It was found, among others, that e-library, computer-based instruction, interactive white board and network provision do not receive preventive and routine maintenance as a management measure, in order to keep them in their best performance status for quality service delivery. Based on the findings, it was recommended, among others, that all the academic staff, non-academic staff and students should be made to undergo computer training, in order to be internet and technology compliant.

**Keywords:** Management, Modern Technologies, Quality and Education Delivery

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## 1. Introduction

Education could be seen as an instrument for self, society and national development. It plays a very prominent and significant role in the actualization of the societal norms and values. It is a means by which learning is transferred from one generation to the other. Education develops the cognitive, affective and psychomotor domains. The development of these domains is tagged all-round development of an individual. By implication, education is target at the all-round growth and development of the individual. In order to achieve these unfathomable functions of education in human development, it was designed to be guided by goals.

It is worrisome to note that public universities in Nigeria are constantly on the struggle to record appreciable quality in their educational delivery. This implies that quality and

standard of educational delivery in public universities in Nigeria has been threatened. Consequently, quality educational delivery in these universities has suffered a lot of setbacks. These setbacks may be attributed to the crude and conventional method of educational delivery. To this end, it's imperative to arm the educators with modern technological skills that will enable them discharge their statutory duties most effectively and efficiently. The acquisition of the 21st century technology-based instructional gadgets and skills are shrouded in complexities and requires proper management. To this end, it is envisioned that the management of modern technologies and their peripheries can greatly influence the level and quality of educational delivery in universities. Furthermore, modern technologies require high management

and managerial interventions in order to enhance quality assurance, control and maintenance. Therefore, this study is poised in investigating the management of modern technologies for quality educational delivery in public universities in Rivers State, Nigeria.

## 2. Literature Review

The goals of education according to Federal Republic of Nigeria [1] are the:

- a. Development of the individual into a morally sound, patriotic and effective citizens;
- b. Total integration of the individual into the immediate community, the Nigerian society and the world;
- c. Provision of equal access to qualitative educational opportunities for all citizens at all levels of education, within and outside the formal school system;
- d. Inculcation of national consciousness, values and national unity; and
- e. Development of appropriate skills, mental, physical and social abilities and competencies to empower the individual to live in and contribute positively to the society.

The goal of education as enunciated above is focused on the overall growth and development of the individual who is committed to it. Education has to do with the impartation of what is worthwhile to the committed learners from the teachers. The teachers and schools' administrators are the managers of education. Management has to do with the practice of directing, instructing, organising, supervising and evaluating human and job processes for the sole purpose of achieving set goals and objectives. Management is tasked because it requires the expertise of the managers in the management and administration of human and material resources for the achievement of organisational goal. The manager must have technical, conceptual and human relationship skills to function as an effective, efficient and prudent organizer and administrator of tasks and requirements.

Managers are expected to use these skills in the management of school facilities and equipment's. Typically, schools that have necessary financial resources carry out predictive management and maintenance while those that do not have enough indulge in reactive maintenance and management of their facilities. The most commonly used maintenance and management strategies of school facilities as well as technological gadgets by managers and administrators are; preventive maintenance; condition-based maintenance; scheduled maintenance; planned maintenance; routine maintenance; emergency maintenance and corrective maintenance [2-4]. Preventive maintenance has to do with the type of culture that will resist or prevent the sudden breakdown of the facilities [3] Condition-based maintenance has to do with the maintenance culture based on the working or present condition of the facilities [5]. To [6], scheduled maintenance has to do with programmed maintenance that will take a particular time frame or interval for completion.

Planned maintenance is a maintenance that has been fixed to take place at a particular agreed period [6], Routine maintenance has to do with the maintenance that is carried out within a given and specified period of time. According to [6, 7], emergency maintenance as the name implies is a type of management strategy of maintenance culture that requires urgent attention on the facility based on its importance in operational duties. Corrective maintenance is embedded in all the maintenance cultures, because all of the cultures are for the sake of correcting one operational fault or the other [3]. It is very expedient for school administrators and managers to cultivate the habit of facility maintenance for their optimal functioning. [8], Facilities management has to do with conscious efforts to keep facilities and their user in a safe, sound and functional status [9-11]. Attention is shifting from conventional facilities maintenance to modern facility maintenance because of the sensitivity of these modern facilities. Managers of education are now saddled with more responsibilities mostly in this present era of technological advancement. The cost of purchasing technological materials is capital intensive and as such requires proper management of the available facilities. There is general poor attitude towards the management of technological materials in tertiary institutions in Nigeria [12]. Similarly, [13] reported that the few computers available in institutions of higher learning are not healthy to boot let alone for instructional purposes. In a different development, [12] opined that the administrative heads should cultivate frantic effort in their maintenance culture mostly on technological materials for instructional purposes. It is worthy to note that technological materials are very delicate and require proper management for optimal functioning [13]. Interactive whiteboards and computers require preventive, corrective and routine maintenance since they are electrically and electronically operated [14]. E-library requires high internet connectivity and sensitivity that can only be achieved through frequent services and upgrading of the internet band width [15]. Most of the commonly used modern technological resources for teaching and learning are e-library, computer and interactive whiteboard.

E-library (electronic library) as the name connotes is simply a library that can be accessed through the internet. It is typically not of 'brick and mortar' build where books are stacked on shelves. It requires internet connectivity for it to be used. Those who use the e-library must have technological equipment's such as computers, android or apple phones and other facilities that can easily access the web. Computer is very important in internet connectivity because it can be used to download and upload information to the e-library through the help of internet connectivity. Most schools have moved away from constructivism to connectivism where internet is the base for information surfing. Instructional delivery is more easily and frequently delivered in the schools, conferences, workshops and seminars through computer assisted instructions. Through computers, one can project images, information and instruction on interactive whiteboard.

Interactive whiteboard is a broad white screen that is connected to the computer as well as to the projector where information, lesson, instruction images could be displayed for magnified visibility. The role of technology in effective and efficient quality education delivery cannot be overemphasized. Owing to the great importance of technology and technological materials in instructional delivery, there is the need to handle them with care and absolute maintenance as they are being used. Based on this backdrop, the researcher investigated how modern technologies such as e-library, computer-based instruction and interactive whiteboard can be managed for quality education delivery in tertiary institutions in Rivers State, Nigeria.

Management of facilities in universities mostly in Rivers State has been a big task. The difficulty could be attributed to low funding of institutions. More so, these facilities are not privately owned but publicly owned and used. Students seem to abuse these facilities as they deem them not important in their learning processes. Ordinarily, most lecturers do not intervene when they see students destroying these facilities. The inability of some lecturers in the fluid usage of these technological resources can also cause damage. It is also normal practice that some of these technological instruments are switched off from the mains electrical supplies after usage—when this is not done, it can lead to premature failure of the instrument/device. Most are also used recklessly and subsequently abandoned when they develop minor problems. It is worrisome that some are kept in unprotected environment where rodents and termites are also able to inflict damage to them. In some cases, the few technological instruments/resources available can frequently be oversubscribed by students due to an unfavorable ratio of units per student/head. With these scenarios, it will be almost impossible for the goals and objectives to be fully actualized if modern facilities are not properly managed. The researcher investigated the ways modern technologies such as e-library, computer-based instruction and interactive white board can be managed for quality educational delivery in public universities in Rivers State, Nigeria

The following research questions were answered in this study.

1. What is the ways e-library can be managed for quality educational delivery in public universities in Rivers State, Nigeria?
2. What is the ways computer-based instruction can be managed for quality educational delivery in public universities in Rivers State, Nigeria?
3. What are the strategies of managing interactive white board for quality educational delivery in public universities in Rivers State, Nigeria?

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

1. There is no significant difference among lecturers in the three universities on ways e-library can be managed for quality educational delivery in public universities in Rivers State, Nigeria.

2. There is no significant difference among lecturers in the three universities on ways computer-based instruction can be managed for quality educational delivery in public universities in Rivers State, Nigeria.
3. There is no significant difference among lecturers in the three universities on the strategies of managing interactive white board can be managed for quality educational delivery in public universities in Rivers State, Nigeria.

### 3. Method

The study adopted an analytic descriptive design because of the inference drawn from the research questions. The population of the study consists of all the 2330 lecturers in the 3 public universities in Rivers State. As at the time of this study, there are three (3) public universities in River State Nigeria. They are; university of Port Harcourt (UNIPORT), Rivers State University (RSU) and Ignatius Ajuru University of Education (IAUE). Uniport 1,500, RSU 274, IAUE 556 making a total of 2330 lecturers from the three universities in Rivers State. A sample size of 349 lecturers was used. The disproportionate stratified sampling technique was used in three universities in Rivers State. In the RSU, 15% of 274 gave 41. In UPH, 15% of 1500 gave 225 lectures. Finally, in IGUOE, 20% of 556 gave 83 lecturers. A researcher-made instrument, titled Management of Modern Technologies for Quality Educational Delivery Scale (MMTQEDS) with 27 items was used. The section of the instrument that elicited information on the e-library from the respondents has 10 items. More so, 8 items were used to elicit information from the respondents on computer-based instruction and 9 items were used to elicit information from the respondents on interactive whiteboard. The instrument MMTQEDS was designed in line with a “forced Likert” four point response scales of Strongly Agree, Agree, Disagree and Strongly Agree with weights of 4, 3, 2, 1 attached to the response options accordingly with a criterion mean value of 2.50. Face validity was ensured by experts in the Department of Educational Management and Test and Measurement all in the Faculty of Education, University of Port Harcourt. The internal consistency reliability coefficient of 0.89 for MMTQEDS was computed, using Cronbach Alpha statistical method. The subscale reliability for E-library, Computer-based Instruction and Interactive White Board are 0.77, 0.81 and 0.82. Mean and standard deviation were used to answer the research questions, while One-way Analysis of Variance (ANOVA) was used to test the null hypotheses at 0.05 alpha level of significance.

### 4. Results

*Research question 1:* What is the ways e-libraries can be managed for quality educational delivery in public universities in Rivers State, Nigeria?

**Table 1.** Weighted mean and standard deviation on the ways e-library can be managed for quality educational delivery in public universities in Rivers State.

s/n	Management of e-library	Lecturers from UPH=225			Lecturers from RSU=41			Lecturers from IGAUoE=83		
		Mean	Std	Decision	Mean	Std	Decision	Mean	Std	Decision
1	The school management should frequently and promptly put current e-copies of textbooks in the e-library	3.40	.58	Agreed	3.49	.51	Agreed	3.45	.59	Agreed
2	Wi-Fi provision is necessary	3.33	.59	Agreed	3.32	.52	Agreed	3.41	.52	Agreed
3	Those who subscribe to the school library should be given the e-library Wi-Fi code on time	3.40	.63	Agreed	3.15	.53	Agreed	3.39	.52	Agreed
4	The e-library usage should be based on faculties	3.43	.62	Agreed	3.12	.89	Agreed	3.44	.49	Agreed
5	There should be routine monitoring of the server of e-library	3.47	.58	Agreed	3.41	.63	Agreed	3.48	.503	Agreed
6	Lecturers should have different unit for browsing from the students	3.41	.64	Agreed	3.32	.77	Agreed	3.43	.52	Agreed
7	Access to e-library should be strictly to those who have paid their school fees	3.51	.57	Agreed	3.51	.64	Agreed	3.39	.54	Agreed
8	There should be alternate source of server for the access to e-library in the school	3.41	.62	Agreed	3.56	.50	Agreed	3.47	.53	Agreed
9	The e-library managers should be internet compliant to meet users demand	3.36	.60	Agreed	3.39	.49	Agreed	3.42	.52	Agreed
10	Timing of the students are necessary in the usage of e-library	3.42	.61	Agreed	3.44	.545	Agreed	3.41	.49	Agreed
	Grand mean and std	3.41	0.60		3.37	0.60		3.43	0.52	

Table 1 revealed that the lecturers in the three universities agreed that items with serial numbers 1 to 10 are the ways e-library can be managed for quality educational delivery in public universities in Rivers State, Nigeria. The lecturers in IGUOE, UPH and RSU have grand mean values of 3.43, 3.41 and 3.37. This showed that

lecturers in IGUOE agreed strongly followed by those in UPH and RSU respectively.

*Research question 2:* What is the ways computer-based instruction can be managed for quality educational delivery in public universities in Rivers State, Nigeria?

**Table 2.** Weighted mean and standard deviation on the ways computer-based instruction can be managed for quality educational delivery in public universities in Rivers State.

s/n	Management of computer-based instruction	Lecturers from UPH=225			Lecturers from RSU=41			Lecturers from IGAUoE=83		
		Mean	Std	Decision	Mean	Std	Decision	Mean	Std	Decision
11	Provision of functional computers are of essence	3.44	.59	Agreed	3.34	.48	Agreed	3.34	.55	Agreed
12	Projectors are needed for effective instructional delivery	3.38	.62	Agreed	3.57	.50	Agreed	3.45	.52	Agreed
13	The computer sets should be routinely maintained	3.37	.64	Agreed	3.63	.49	Agreed	3.46	.57	Agreed
14	Lecturers should be properly trained in the management of computers	3.76	.43	Agreed	3.56	.50	Agreed	3.43	.63	Agreed
15	Supervision of students on the usage of computer	3.57	.71	Agreed	3.69	.47	Agreed	3.28	.61	Agreed
16	Appropriate time should be allotted to the usage on computer assisted instruction	3.61	.52	Agreed	3.56	.50	Agreed	3.35	.59	Agreed
17	Units of lessons are better presented when they are in power points	3.61	.52	Agreed	3.45	.55	Agreed	3.34	.70	Agreed
18	Properly focusing the projector on the screen will enhance visibility for effective learning	3.54	.73	Agreed	3.46	.50	Agreed	3.41	.59	Agreed
	Grand mean and std	3.54	0.59		3.53	0.49		3.38	0.59	

Table 2 revealed that the lecturers in the three universities agreed that items with serial numbers 11 to 18 are the ways computer-based instruction can be managed for quality educational delivery in public universities in Rivers State, Nigeria. The lecturers in UPH, RSU and IGUOE have grand mean values of 3.54, 3.53 and 3.38. This showed that

lecturers in UPH agreed strongly followed by those in RSU and IGUOE respectively.

*Research question 3:* What are the strategies of managing interactive whiteboard for quality educational delivery in public universities in Rivers State, Nigeria?

**Table 3.** Weighted mean and standard deviation on the ways computer-based instruction can be managed for quality educational delivery in public universities in Rivers State.

s/n	Management of interactive white board	Lecturers from UPH			Lecturers from RST			Lecturers from IGAUoE		
		Mean	Std	Decision	Mean	Std	Decision	Mean	Std	Decision
19	Sufficient training for the lecturers will help in the management of interactive whiteboard	3.15	.93	Agreed	3.34	.53	Agreed	3.39	.68	Agreed
20	Enough space is required for the use of interactive whiteboard	3.43	.62	Agreed	3.05	.67	Agreed	3.39	.56	Agreed
21	The problem of mix interaction should not be allowed in the usage of interactive whiteboard	3.28	.75	Agreed	3.19	.46	Agreed	3.42	.57	Agreed
22	The interactive whiteboard is better placed some distance away from the students to avoid eye problem	3.33	.70	Agreed	3.54	.50	Agreed	3.43	.61	Agreed

s/n	Management of interactive white board	Lecturers from UPH			Lecturers from RST			Lecturers from IGAUOE		
		Mean	Std	Decision	Mean	Std	Decision	Mean	Std	Decision
23	The sound production from the interactive whiteboard should be at the minimum in order not to cause distraction	3.41	.73	Agreed	3.27	.50	Agreed	3.39	.60	Agreed
24	The lecturers should be aware of the sensitivity of the interactive whiteboard and avoid unnecessary touching of the screen	3.29	.47	Agreed	3.44	.50	Agreed	3.36	.64	Agreed
25	There should electronic guard before the usage of interactive whiteboard	3.47	.50	Agreed	3.34	.48	Agreed	3.45	.57	Agreed
26	The provision of alternate source of power is required for effective management of interactive whiteboard	3.43	.54	Agreed	3.44	.50	Agreed	3.45	.59	Agreed
27	The interactive whiteboard is not better placed when it is close to a standing fan	3.53	.50	Agreed	3.61	.49	Agreed	2.92	.42	Agreed
	Grand mean and std	3.37	0.64		3.36	0.51		3.35	0.58	

Table 3 revealed that the lecturers in the three universities agreed that items with serial numbers 19 to 27 are the ways interactive whiteboard can be managed for quality educational delivery in public universities in Rivers State, Nigeria. The lecturers in UPH, RSU and IGAUOE have grand mean values of 3.37, 3.36 and 3.35. This showed that

lecturers in UPH agreed strongly followed by those in RSU and IGAUOE respectively.

*Hypothesis 1:* There is no significant difference among lecturers in the three universities on ways e-library can be managed for quality educational delivery in public universities in Rivers State, Nigeria.

**Table 4.** ANOVA on the mean differences among lecturers in the three universities on the ways e-library can be managed for quality educational delivery.

	Sum of Squares	df	Mean Square	F	Probability value	Alpha level	Decision
Between Groups	9.923	2	4.961	.721	.487	0.05	Hypothesis accepted
Within Groups	2380.198	346	6.879				
Total	2390.120	348					

Table 4 revealed that the lecturers have degrees of freedom of 2 and 346 with F ratio value of .721. It was revealed that the probability value of 0.487 is greater than the alpha level of 0.05, therefore, the null hypothesis is accepted. This implies that there is no significant difference among lecturers in the three universities on ways e-library can be managed for

quality educational delivery in public universities in Rivers State, Nigeria.

*Hypothesis 2:* There is no significant difference among lecturers in the three universities on ways computer-based instruction can be managed for quality educational delivery in public universities in Rivers State, Nigeria.

**Table 5.** ANOVA on the mean differences among lecturers in the three universities on the way's computer-based instruction can be managed for quality educational delivery.

	Sum of Squares	df	Mean Square	F	Probability value	Alpha level	Decision
Between Groups	96.483	2	48.241	9.552	.000	0.05	Hypothesis is rejected
Within Groups	1747.472	346	5.050				
Total	1843.954	348					

Table 5 revealed that the lecturers have degrees of freedom of 2 and 346 with F ratio value of 9.552. It was revealed that the probability value of 0.000 is less than the alpha level of 0.05. Therefore, the null hypothesis is rejected. This implies that there is a significant difference among lecturers in the

three universities on ways computer-based instruction can be managed for quality educational delivery in public universities in Rivers State, Nigeria. Because the hypothesis is significant, the direction of significance through pair wise comparison is shown in table 6 below.

**Table 6.** Pair Wise Comparison of Lecturers on Ways Computer-Based Instruction can be managed.

(I) lecturers	(J) lecturers	Mean Difference (I-J)	Probability value	Alpha level	Decision
RSU	IGAUE	1.17132*	.020	0.05	Not significant
	UPH	-.07382	1.000	0.05	Not significant
IGAUE	RSU	-1.17132*	.020	0.05	Not significant
	UPH	-1.24514*	.000	0.05	Significant
UPH	RSU	.07382	1.000	0.05	Not significant
	IGAUE	1.24514*	.000	0.05	Significant

Table 6 revealed that the mean comparisons between lecturers in IGAUE and UPH differed significantly on ways computer-based instruction can be managed for quality educational delivery in public universities in Rivers State, Nigeria.

*Hypothesis 3:* There is no significant difference among lecturers in the three universities on the strategies of managing interactive white board can be managed for quality educational delivery in public universities in Rivers State, Nigeria.

**Table 7.** ANOVA on the mean differences among lecturers in the three universities on the ways interactive whiteboard can be managed for quality educational delivery.

	Sum of Squares	df	Mean Square	F	Probability level	Alpha level	Decision
Between Groups	1.226	2	.613	.081	.922	0.05	Hypothesis is accepted
Within Groups	2617.256	346	7.564				
Total	2618.481	348					

Table 7 revealed that the lecturers have degrees of freedom of 2 and 346 with F ratio value of 0.081. It was revealed that the probability value of 0.922 is greater than the alpha level of 0.05. Therefore, the null hypothesis is accepted. This implies that there is no significant difference among lecturers in the three universities on ways interactive whiteboard can be managed for quality educational delivery in public universities in Rivers State, Nigeria.

## 5. Discussion

The findings of the study are discussed as shown below.

### 5.1. Ways E-library Can Be Managed for Quality Education Delivery

It was found that e-library can be managed through frequently and promptly putting current e-copies of text books in the e-library, Wi-Fi provision, availability of Wi-Fi code to subscribers on time, e-library usage should be faculty based, the server should be routinely maintained, Lecturers should have different unit for browsing from the students, Access to e-library should be strictly to those who have paid their school fees, there should be alternate source of server for the access to e-library in the school, e-library managers should be internet compliant to meet users demands and timing of the students are necessary in the usage of e-library. The results showed that there are strategies that could be used to manage e-library in the universities, but the attitudes of the administrators are discouraging. This is supported in the assertion of [3] who reported that there is generally poor attitude towards the management of technological materials in tertiary institutions in Nigeria. These poor attitudes towards most of these facilities are not too good for these facilities in the achievement of the goals and objectives of education. That is why [15] reported that e-library requires high internet connectivity and sensitivity that could only be achieved through frequent services and upgrading of the internet band width. The management of e-library depicted the provision of functional internet connectivity. The result showed that there is no significant difference among lecturers in the three universities on ways e-library could be managed for quality educational delivery in public universities in Rivers State, Nigeria. The hypothesis was accepted because as lecturers, they shared the same opinion on the various ways e-library could be managed.

### 5.2. Ways Computer-Based Instruction Can Be Managed for Quality Education Delivery

It was found that computer-based instruction could be managed through the provision of functional computers,

provision of projectors, routine maintenance of available computers, computer training for lecturers, supervision of students on the usage of computer, allocation of appropriate time for computer usage, presentation of units of lessons in power point format and proper focusing of projector on the screen. Even when computers are at the forefront of computer-assisted instruction, they are not properly handled with care. That is why [13] reported that the few computers available for institutions of higher learning were not healthy to boot let alone for instructional purposes. In a similar development, [13] submitted that it was worthy to note that technological materials are very delicate and requires proper management for optimal functioning. Computers are fragile and require a lot of concentration and care in order to put them into ultimate use. It was found that there was a significant difference among lecturers in the three universities on ways computer-based instruction could be managed for quality educational delivery in public universities in Rivers State, Nigeria. The perceptions of the lecturers differed because of their various locations and the funding patterns of their various universities.

### 5.3. Ways Interactive Whiteboard Can Be Managed for Quality Education Delivery

Sufficient training for lecturers, provision of enough space, avoiding problem of mix interaction between lecturers and students, placing the screen not too close to the students, operation of interactive whiteboard with minimum sound effect, the whiteboard should be switched off from mains power supply when not in use and the provision of alternate source of power will enhance the usage of interactive whiteboard.[12] opined that the administrative heads should cultivate frantic effort in their maintenance culture mostly on technological materials for instructional purposes. Interactive whiteboards and computers require preventive, corrective and routine maintenance since they are electrically and electronically operated [14]. The result showed that there was no significant difference among lecturers at the three universities on ways interactive whiteboard could be managed for quality educational delivery in public universities in Rivers State, Nigeria.

## 6. Conclusion

Based on the findings of this study, it is concluded that apt management of modern technologies is instrumental in quality education delivery. Specifically, proper management of e-library, computer-based instruction and interactive whiteboard has the potential to enhance quality educational delivery in public Universities in Rivers State.

## 7. Recommendations

Based on the findings, the following recommendations were made.

1. E-library, computer-based instruction, interactive white board and network provision should receive preventive and routine maintenance as a management measure, in order to keep them in their best performance status for quality service delivery.
2. The use of Solar energy and inverter are required in the university communities as a result of the epileptic nature of power supply by Nigeria Power Holding Company of Nigeria (PHCN).
3. Academic staff, non-academic staff and students should be made by their various administrative heads to undergo computer training, in order to be internet and technologically compliant.
4. Government and governmental agencies like TET fund should be encouraged to donate more computers and accompanying peripheries for enhanced computer-based instruction. The departmental heads and deans of the faculty should request for a spacious computer-based instructional room where effective and efficient use of these technological and gadgets can be better put to use.
5. Lecturers and students should always be properly instructed by the ICT experts on the safest ways to use interactive whiteboard for quality education delivery.

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