

# ASSESSMENT OF ICT FACILITIES IN THE TEACHING AND LEARNING OF BASIC TECHNOLOGY IN PUBLIC JUNIOR SECONDARY SCHOOLS IN OREDO LOCAL GOVERNMENT AREA, EDO STATE

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## Abstract

*The study was an assessment of ICT facilities in the Teaching and learning of basic technology in public junior secondary schools in Oredo LGA, Edo State. It considered indices such as, rating of ICT facilities, extent of teachers' use of ICTs; respondents' assessment of ICT facilities for the technology related courses in computer units; ICT-based services rendered by the ICT laboratories and the causes of difficulties experienced by respondents in use of ICT facilities in the teaching and learning of basic technology. To guide this study, five research questions were raised. The population of this study comprises 587 Junior Secondary School (JSS III) teachers from the thirteen (13) Public Junior Secondary Schools in Oredo Local Government Area of Edo State. A sample size of 118 will be taken which was calculated on the basis of 20% of the total population. 118 questionnaires were administered and retrieved and used for the analysis. One instrument was used and data were collected through a structured questionnaire titled "Assessment of ICT Facilities in the Teaching and Learning of Basic Technology Questionnaire (AICTFTLBTQ)" structured based on the research questions. The analysis was done using frequencies, percentages and mean. Findings from the analysis revealed that the quality of ICT facilities in teaching and learning basic technology is poor; ICT facilities are not often used by teachers, there are inadequate computers, internet, telephone, television, radio and audiovisual equipment, ICT-based services rendered by the ICT laboratories in relation to browsing and researching; printing of documents are not affordable; and internet access is negative and difficulties were experienced by respondents in use of ICT facilities in the teaching and learning of basic technology in public junior secondary schools. Based on the findings, it was recommended that ICT facilities of good qualities should be acquired by school administrators in enhancing teaching and learning basic technology. Teachers should be encouraged by being trained in the effective use of ICT facilities for teaching and learning basic technology. Stakeholders in the secondary education sector should endeavour to make sure that there are adequate computers, internet, telephone, television, radio and audiovisual equipment and ensure that difficulties experienced by teachers in use of ICT facilities in the teaching and learning of basic technology are minimized.*

**Keywords:** ICT facilities, Teaching and Learning, Basic Technology, Secondary Schools, Nigeria

## Introduction

Quality education is a global concern in virtually all societies. To achieve it, efficient and quality teaching needs to be employed. Instructional technologies play a vital role in the teaching and learning process and have proved to have several inherent advantages when well utilized. However, this may not occur without the use and integration of Information and Communication Technology (ICT). ICT refers to information-handling tools that are used to generate, store, process, distribute and share information (Thiagarajan, 2015). The use of ICT in education is obviously not a new rally for the

protection and promotion of life. There are many pieces of evidences that the use of ICT in education provides positive pedagogical, social and economic benefits.

Computers have made the world a global village today. These are clear pictures of proof that computers really are part in the day-to-day lives of many people. For the essence of success, nowadays academic institutions and learning centers offer both basic and advanced training courses in computer education. This is now made part of the curriculum mainly in business, science, engineering and technology programmes. This indicates a challenge to the expertise of teachers to rise to the use of technology, computer software, facilities and equipment resulting in an effective learning experience with the use of advanced technology (Ajayi, 2021).

The changing global educational landscape occasioned by the adoption of ICT in instructional delivery has necessitated changes in the pedagogy. Thus teaching and learning become more effective when it is interactive when ICT is used (Ike, 2018). Empirical evidence suggests that effective interaction between teachers and learners heighten academic achievement of the learners (Pianta, Mashburn, Downer, Hamre, & Justice, 2018). In other words, teachers and learners must interact during the classroom encounter for teaching and learning to be effective. Nigeria has stressed the importance of integrating ICT in pedagogical practices in its education industry (FRN, 2014). However, situations in most of the public junior secondary schools in both urban and rural areas in Edo state tend to suggest that ICT has not been effectively and seamlessly integrated into pedagogical practices. For instance, in an earlier study Okebukola (2019) posited that ICT especially computers are not common features of the classroom in 90% of the public junior secondary schools in Oredo local government area of Edo state. Similarly, in a more recent study Ajayi and Ekundayo (2019) discovered that ICT facilities were lacking in secondary schools while teachers and students were to a little extent exposed to the use of ICT in learning.

In order for schools all over the world to meet the global market demands, United Nations Educational, Scientific and Cultural Organization (UNESCO, 2019) recommended that educational facilities that are child, disability and gender sensitive should be provided for safe, non-violent, inclusive and effective learning environment for all. Schools should have access to electricity, internet, computers, adapted infrastructure and materials for students, basic drinking water, single-sex basic sanitation facilities and basic hand washing facilities.

Basic Science and Technology (BST) is a core subject in the Basic Education Curriculum (BEC) in Nigeria. According to Igbokwe (2015), the curriculum was particularly developed for the attainment of the goals of Education for All (EFA), the critical targets of the National Economic Empowerment and Development Strategies (NEEDS) and the Sustainable Development Goals (SDGs). This is because science and technology education plays a vital role in a nation's scientific and technological development and Nigeria is in dire need of such to ensure global competitiveness. BST is a body of knowledge and also a way of thinking and doing things, it emphasizes the learning of fundamental science knowledge concept and theories law and so on. The themes grouped under this subject include Basic science, Basic technology, Physical and health education; and Information technology (Igbokwe, 2015).

The objectives of Basic Science and Technology according to Federal Ministry of Education (2012) include developing interest in science and technology; acquiring basic skills in science and technology; application of scientific and technological knowledge and skills to meet the needs of the society; take advantage of the numerous career opportunities offered by science and technology; and become prepared for further studies in science and technology; avoid drug abuse and related vices; and be safety and security conscious.

Despite the fact that the Federal Republic of Nigeria (2014) stated that ICT should be included in the junior science curriculum, the effectiveness of the practical implementation of this lofty policy is skeptical. The tendency to use or against using ICT in teaching and learning strongly depends on the interest of teachers (Albrini, 2016). Handler (2019) pointed out that teachers with positive interest towards the use of ICT would effectively use it in instruction and as such the school authority should

give adequate support because anything to the contrary would automatically put the teachers off from using ICTs.

Computers and information technologies are rapidly developing and children are growing up with technology. Both educators and students need to be competent and knowledgeable about computers and computer software. However, the discussions about the limits of computers and computer software are still continuing. In most schools, computers are only used only for Internet access and encoding. Teachers have been the agent between the learner and technology, and play a critical role in the success of teaching and learning.

### **Statement of the Problem**

The value of ICT resources to teaching and learning situations has received much emphasis in education literature and widely mentioned as a policy position in all sectors of the Nigeria's education system. In the field of technology education especially, ICT resources are advanced as capable of addressing the learning needs of students and equipping them with the relevant skills for the world of work but the unsafe and uncertainty of the environment around schools has posed serious challenges to the use of ICT facilities in the teaching and learning processes in the school system. This is because, ICT facilities among others can enhance teaching and learning of basic technology and outcomes of students if properly harnessed. Therefore, there is need to address these problems to enhance teaching and learning of basic technology in schools. The study was therefore designed to investigate how available ICTs are used to affect quality teaching and learning. This is intended to provide insight into the possible gap in knowledge. It is on this premise this study intends to embark on the assessment of ICT facilities for teaching and learning basic technology in public junior secondary schools in Oredo local government Area of Edo State.

### **Research Questions**

1. What is the rating of ICT facilities in learning basic technology in public junior secondary schools in Oredo Local Government Area?
2. To what extent do teachers use ICTs facilities in teaching of basic technology in public junior secondary schools in Oredo Local Government Area?
3. How do the respondents assess ICT facilities for the technology related courses in computer units; user's schedule; and availability of space in public junior secondary schools in Oredo Local Government Area?
4. What is the extent of ICT-based services rendered by the ICT laboratories in relation to browsing and researching; printing of documents; and internet access in public junior secondary schools in Oredo Local Government Area?
5. What are the causes of difficulties experienced by respondents in use of ICT facilities in learning basic technology in public junior secondary schools in Oredo Local Government Area.

### **Purpose of Study**

The main purpose of this study is to assess ICT facilities in learning in public junior secondary schools in Oredo Local Government Area of Edo State. The specific objectives of the study are to:

1. determine the rating of ICT facilities in learning basic technology in Oredo Local Government Area,
2. find out to what extent do teachers use ICTs in teaching of basic technology in public junior secondary schools in Oredo Local Government Area.
3. examine how the respondents assess ICT facilities for basic technology related courses in computer units; user's schedule; and availability of space in public junior secondary schools in Oredo Local Government Area.
4. find out the extent of ICT-based services rendered by the ICT laboratories in relation to browsing and researching; printing of documents; and internet access or connectivity in public junior secondary schools in Oredo Local Government

5. find out the causes of difficulties experienced by respondents in use of ICT facilities in the teaching and learning of basic technology in public junior secondary schools in Oredo Local Government Area

## **Methodology**

### **Research Design**

This study will adopt the descriptive survey research design. The design is also considered appropriate for this study because it will look at the factors hindering effective e-learning programmes in Nigerian schools during the Covid-19 global challenge as perceived by educational managers in the University of Benin. Haughn (2017) defined survey research technique as the gathering of opinions, beliefs and feelings of a selected groups of individuals often chosen from demographic samplings like age, gender, income earners and the likes through the use of questionnaires and interviews.

### **Population of the Study**

The population of this study comprises 587 Junior Secondary School (JSS III) teachers from the thirteen (13) Public Junior Secondary Schools in Oredo Local Government Area of Edo State. (*Source: Post Primary Education Board, 2020*).

### **Sample and Sampling Technique**

A sample size of 118 will be taken out of the total population of 587 teachers. This was calculated on the basis of 20% of the total population of 587 teachers in the 13 public junior schools in Oredo Local Government area of Edo State; meanwhile, ten schools out of the twenty six secondary schools will be used for the study. A simple random sampling technique will be used to select the desired sample size of 118 of JSS I-III teachers from ten schools.

First of all the names of the thirteen (13) junior secondary schools was written on piece of paper and placed in a bag the researcher deepen her hand into the bag and randomly pick one piece from the bag and record it, and then return the piece of paper back to the bag and the process was repeated until ten schools were selected from the Local Government Area.

### **Research Instrument**

The study will use primary data collection method to solicit data for the study. Data will be collected through the use of a structured questionnaire titled “Assessment of ICT Facilities in the Teaching and Learning of Basic Technology Questionnaire (AICTFTLBTQ)”. The questionnaire will be structured based on the research questions. The questionnaire will be divided into two major parts. The first part will constitute the demographic information of the respondents under study, while the second segment will consist of twenty five (25) sub-questionnaires which will addresses the objectives of the study. The items on the research instrument will be designed in a modified Four-Point Likert Scale format of SA – Strongly Agreed, A – Agreed, DA – Disagreed, SD – Strongly Disagreed.

### **Validity of the Instrument**

The questionnaire for this study was developed by the researcher. The instrument faces content validation by the supervisor and other experts. After undergoing series of correction by the supervisor by adding relevant information to the questionnaire, it was perfectly good to be administered on the respondents in order to obtain standard information for the study.

### **Reliability of Instrument**

To establish the reliability of the instrument, a test-retest method was adopted. Whereby twenty (20) respondents who were not part of the chosen sample were made to answer the same questionnaire after one week of administration and the result was compared to the first administration using Pearson Product-Moment Correlation Coefficient which established 0.76 reliability.

### Method of Data Collection

Copies of the questionnaire were administered directly by the researcher and trained assistants. Instructions on how to fill out the items was given to the respondents by the researcher. After a space of time, the completed copies were collected by the researcher for scoring and data analysis.

### Method of Data Analysis

Descriptive statistics such as mean, percentages and frequencies will be employed in the study to answer research questions relating to assessment of ICT facilities in the teaching and learning of basic technology in public juniorsecondary schools in Oredo LGA, Edo State

### Presentation of Results and Discussion of Findings

This chapter described the presentation of results and discussion of findings.

**Research Question 1:** What is the rating of ICT facilities in teaching and learning basic technology in public junior secondary schools in Oredo Local Government Area?

**Table 1:** Mean score of rating of ICT facilities in teaching and learning basic technology in public junior secondary schools in Oredo Local Government Area

S/N	Statements	N	SA	A	D	SD	$\frac{\sum FX}{N}$	Mean $\bar{x}$	Remark
1	ICT facilities are of very high quality for teaching and learning basic technology.	118	nil	nil	98	20	216	1.83	R
2	ICT facilities are of average quality for teaching and learning basic technology	118	2	8	68	40	176	1.50	R
3	ICT facilities are of the required number for teaching and learning basic technology.	118	nil	nil	87	31	205	1.73	R
4	ICT facilities are suitable for teaching and learning basic technology.	118	nil	nil	95	23	213	1.80	R
5	ICT facilities are in good working condition for teaching and learning basic technology.	118	5	8	72	33	221	1.87	R
	<b>Total</b>		<b>7</b>	<b>16</b>	<b>420</b>	<b>147</b>		<b>1.75</b>	

Table 1 show that an aggregate of 7 respondents strongly agreed to the research question while an aggregate of 16 respondents agreed to the research question. On the other hand, 420 respondents disagreed and 147 respondents strongly disagreed to the research question. Taken together, 23 respondents were positive in the responses to the research question while 567 were negative to the research questions. It implies that most of the respondents disagreed to items generated from the research question. From the computed mean, it was found that the mean of items 1, 2, 3, 4 and 5 were less than the cut-off point of 2.5. This goes to show that rating of ICT facilities in teaching and learning basic technology is poor. It also shows that ICT facilities are not of very high quality; ICT facilities are not of average quality; ICT facilities are not of the required number and ICT facilities are not in good working condition for teaching and learning basic technology.

**Research Question 2:** To what extent do teachers use ICT facilities in teaching and learning of basic technology in public junior secondary schools in Oredo Local Government Area.?

**Table 2:** Mean score extent of teachers' use of ICTs in teaching and learning of basic technology in public junior secondary schools in Oredo Local Government Area

S/N	Statements	N	SA	A	D	SD	$\frac{\sum FX}{N}$	Mean $\bar{x}$	Remark
6	ICT facilities are often used by teachers for teaching basic technology.	118	nil	nil	92	26	210	1.78	R
7	ICT facilities are rarely used by teachers for teaching basic technology.	118	24	94	nil	nil	378	3.20	A
8	Teachers have poor disposition to the use of ICT facilities in teaching basic technology.	118	28	90	nil	nil	382	3.24	A
9	Teachers are competent in the use of ICT equipment for teaching basic technology.	118	nil	nil	96	22	214	1.83	R
10	Lack of ICT skills prevents teachers from using ICT facilities in teaching basic technology.	118	22	96	nil	nil	376	3.19	A
<b>Total</b>			<b>74</b>	<b>280</b>	<b>188</b>	<b>48</b>		<b>2.65</b>	

Table 2 shows that an aggregate of 74 respondents strongly agreed to the research question while an aggregate of 280 respondents agreed to the research question. On the other hand, 188 respondents disagreed and 48 respondents strongly disagreed to the research question. Put together, 354 respondents were positive in the responses to the research question while 236 were negative to the research questions. From the computed mean, it was found that the mean of items 6, 7, 8, 9 and 10 were above the cut-off point of 2.5 and therefore implies that teachers do not use ICT facilities in teaching and learning of basic technology in public junior secondary schools in Oredo Local Government Area. ICT facilities are not often used by teachers; ICT facilities are rarely used by teachers; teachers have poor disposition to the use of ICT facilities in teaching basic technology; teachers are not competent in the use of ICT facilities; lack of ICT skills prevents teachers from using ICT facilities in teaching basic technology.

**Research Question 3:** How do the respondents assess ICT facilities for the technology related courses in computer units; user's schedule; and availability of space in public junior secondary schools in Oredo Local Government Area?

**Table 3:** Mean score respondents assessment of ICT facilities for the technology related courses in computer units in public junior secondary schools in Oredo Local Government Area.

S/N	Statements	N	SA	A	D	SD	$\frac{\sum FX}{N}$	Mean	Re mar
11	There are adequate computers, internet, telephone, television, radio and audiovisual equipment for the teaching and learning basic technology.	118	nil	nil	88	30	206	1.75	R
12	There is available space in the use of ICT facilities for the teaching and learning of basic technology.	118	nil	12	68	38	198	1.68	R
13	Learners embrace positively the use of ICT facilities in the teaching and learning basic technology.	118	nil	8	86	24	220	1.86	R
14	Learners schedule is encouraging in the use of ICT equipment in the teaching and learning basic technology.	118	nil	12	60	46	202	1.71	R
15	Learners have personal computers in learning basic technology.	118	nil	nil	96	22	214	1.81	R
<b>Total</b>				<b>32</b>	<b>398</b>	<b>160</b>		<b>1.76</b>	

Table 3 shows that an aggregate of 32 respondents agreed to the research question while an aggregate of 398 respondents disagreed to the research question. On the other hand, 160 respondents strongly disagreed to the research question. Taken together, 32 respondents were positive in the responses to the research question while 558 were negative to the research questions. From the computed mean, it was found that the mean of items 11,12,13,14 and 15 were less than the cut-off point of 2.5 and therefore implies that respondents assessment of ICT facilities for the technology related courses in computer units; user's schedule; and availability of space is negative. This shows that there are inadequate computers, internet, telephone, television, radio and audiovisual equipment for the teaching and learning basic technology; there is no available space for the use of ICT facilities; learners do not embrace positively the use of ICT facilities and learners do not have personal computers in learning basic technology.

**Research Question 4:** What is the extent of ICT-based services rendered by the ICT laboratories in relation to browsing and researching; printing of documents; and internet access in public junior secondary schools in Oredo Local Government Area?

**Table 4:** Mean score of extent of ICT-based services rendered by the ICT laboratories in public junior secondary schools in Oredo Local Government Area.

S/N	Statements	N	SA	A	D	SD	$\frac{\sum FX}{N}$	$\bar{x}$	Remark
16	Internet services are readily available in ICT laboratories.	118	nil	nil	94	24	212	1.80	R
17	Subject teachers easily have access to ICT tools whenever needed.	118	nil	nil	92	26	210	1.78	R
18	Browsing for relevant resources for research are in place.	118	nil	nil	98	20	216	1.83	R
19	Printing of essential documents is cheap and available.	118	nil	nil	78	40	196	1.66	R
20	Student-computer ration is based on standard.	118	nil	nil	97	21	215	1.82	R
	<b>Total</b>				<b>45 9</b>	<b>131</b>		<b>1.78</b>	

Table 4 shows that an aggregate of 459 respondents disagreed to the research question while an aggregate of 131 respondents strongly disagreed to the research question..From the computed mean, it was found that the mean of items 16,17,18,19 and 20 were below the cut-off point of 2.5 and therefore implies that ICT-based services rendered by the ICT laboratories in relation to browsing and researching;printing of documents; and internet access is negative. This shows that Internet services are not readily available in ICT laboratories;subject teachers do not easily have access to ICT tools whenever needed; browsing for relevant resources for research are not in place; printing of essential documents is not cheap and available and student-computer ration is not based on standard.

**Research Question 5:**What are the causes of difficulties experienced by respondents in use of ICT facilities in learning basic technology in public junior secondary schools in Oredo Local Government Area?

**Table 5:** Mean score of causes of difficulties experienced by respondents in use of ICT facilities in learning basic technology in public junior secondary schools in Oredo Local Government Area

S/N	Statements	N	SA	A	D	SD	$\frac{\sum FX}{N}$	Mean	Remark
21	Lack of technical support staff in handling laboratory processes hinders the use of ICT facilities.	118	28	80	8	2	370	3.13	A
22	Poorly developed ICT infrastructure hinders effective teaching and learning of basic technology.	118	30	62	20	6	352	2.98	A
23	High bandwidth costs for internet access hinders use of ICT equipment for effective teaching and learning of basic technology.	118	34	84	nil	nil	388	3.28	A
24	Unreliable supply of electricity hinders use of ICT facilities for effective teaching and learning of basic technology.	118	68	50	nil	nil	422	3.57	A
25	Inadequate funding and allocation to technology hinders use of ICT facilities for effective teaching and learning of basic technology.	118	58	60	nil	nil	412	3.49	A
<b>Total</b>			<b>218</b>	<b>336</b>	<b>28</b>	<b>8</b>		<b>3.30</b>	

Table 5 shows that an aggregate of 218 respondents strongly agreed to the research question while an aggregate of 336 respondents agreed to the research question. On the other hand, 28 respondents disagreed and 8 respondents strongly disagreed to the research question. Taken together, 554 respondents were positive in the responses to the research question while 36 were negative to the research questions. From the computed mean, it was found that the mean of items 21,22,23,24 and 25 were above the cut-off point of 2.5 and therefore implies that difficulties were experienced by respondents in use of ICT facilities in learning basic technology. This shows that lack of technical support staff in handling laboratory processes hinders the use of ICT facilities. It also shows that poorly developed ICT infrastructure hinders effective teaching and learning of basic technology; high bandwidth costs for internet access hinders use of ICT facilities;unreliable supply of electricity hinders use of ICT facilities and inadequate funding and allocation to technology hinders use of ICT facilities for effective teaching and learning of basic technology.

### Discussion of Findings

The study is on the assessment of ICT facilities in teaching and learning basic technology in public junior secondary schools in Oredo Local Government Area of Edo State. The data presented in table 1 provided answers to research question one. With a calculated mean of 1.75 of which of 23 respondents strongly agreed and 567 respondents disagreed to the research question, it implies that the rating of ICT facilities in teaching and learning basic technology in public junior secondary schools is negative. This view is in line with Shaibu and Achor (2015) who stated that some certain factors such as the quality of ICT facilities, inadequate funds, poor condition of electrical power supply among others hinders the use of ICT in teaching basic technology in public junior secondary schools in Edo State. In agreement, Scornavacca and Marshall (2017) posited that current research has indicated that good quality ICT facilities assist in transforming a teaching environment into a learner-centered one since learners are actively involved in the learning processes in ICT classrooms.

The data presented in table 2 provided answers to research question two. With a calculated mean of 2.65 of which 354 respondents strongly agreed and 236 respondents disagreed to the

research question, it implies that teachers do not use ICT facilities in teaching and learning of basic technology in public junior secondary schools in Oredo Local Government Area. This view is supported by Obanya (2014) who stated that teaching has moved away from its old emphasis on teaching, inputs, formal schooling, centralized control, categorized learning, and rote learning to more flexible approaches. This view is in consonance with UNESCO (2022) which has shown that very little will be achieved in ICT integration if teachers and their students have only rare and occasional access to ICT tools.

The data presented in table 3 provided answers to research question three. With a calculated mean of 1.76 of which 32 respondents strongly agreed and 558 respondents disagreed to the research question, this implies that respondents' assessment of ICT facilities for the technology related courses in computer units; user's schedule; and availability of space is negative. This view is in line with Belay, Khatete, & Mugo (2020) who posited that technology integration nowadays has gone through innovations and transformed our societies that has totally changed the way people think, work and live and as part of this, schools and other educational institutions which are supposed to prepare students to live in "a knowledge society" need to consider ICT integration in their curriculum. Similarly, Idoko and Eliagwu (2016) advocated for the integration of technology into learning system with good quality ICT facilities to enhance quality, excellence and productivity. These researchers also recommended that, based on the roles of ICT in education, the development of ICT skills in students which forms part of the school curriculum must be taught at all levels of the educational system.

The data presented in table 4 provided answers to research question four. With a calculated mean of 1.78 of which 590 disagreed this shows that ICT-based services rendered by the ICT laboratories in relation to browsing and researching; printing of documents; and internet access is negative. In agreement with the result of research question four, where Jamieson-Proctor et al., (2013) stated that if there is lack of technical assistance and no repair on ICT facilities, teachers may not be able to use the computers which could in turn discourage teachers because of fear of equipment failure since they are not given any assistance on the issue. Similarly, Leung (2015) maintained that poor infrastructure, lack of space and equipment and resources have become major barriers preventing teachers from using ICT in teaching effectively. Aside from these, he mentioned other hindering factors like class size and classroom settings and parents' inability to provide their children with a home computer and the needed software.

The data presented in table 5 provided answers to research question five. With a calculated mean of 3.30 of which 554 respondents agreed and 36 disagreed, this implies that difficulties were experienced by respondents in use of ICT facilities in learning basic technology in public junior secondary schools in Oredo Local Government Area. In agreement with the result of research question five, Dagiene (2015) maintained that as Nigeria adopts Information and Communication Technology (ICT) in education, it faces the same challenges like most developing countries where unstable economy, poorly developed ICT infrastructure, high bandwidth costs, unreliable supply of electricity, general lack of resources, etc., were found to be the central issues to meet a broad spectrum needs of most schools in our country. This view is also in line with Blamire, Balanskat, & Kefala (2016) who argued that although educators appear to acknowledge the value of ICT in institutions, difficulties continue to exist during the processes of adopting these technologies.

## **Summary, Conclusion and Recommendations**

### **Summary**

The study examined the assessment of ICT facilities in the teaching and learning of basic technology in public junior secondary schools in Oredo Local Government Area of Edo State. It considered rating of ICT facilities, extent to which teachers use of ICT facilities, respondents assess, extent of ICT-based services rendered by the ICT laboratories and causes of difficulties experienced by respondents in use of ICT facilities in teaching and learning basic technology. To guide this study, five research questions were raised which are as follows:

1. What is the rating of ICT facilities in teaching and learning basic technology in public junior secondary schools in Oredo Local Government Area
2. To what extent do teachers use ICTs in teaching and learning of basic technology in public junior secondary schools in Oredo Local Government Area?
3. How do the respondents assess ICT facilities for the technology related courses in computer units; user's schedule; and availability of space in public junior secondary schools in Oredo Local Government Area?
4. What is the extent of ICT-based services rendered by the ICT laboratories in relation to browsing and researching; printing of documents; and internet access in public junior secondary schools in Oredo Local Government Area?
5. What are the causes of difficulties experienced by respondents in use of ICT facilities in learning basic technology in public junior secondary schools in Oredo Local Government Area?

The population of this study comprises 587 Junior Secondary School (JSS III) teachers from the thirteen (13) Public Junior Secondary Schools in Oredo Local Government Area of Edo State. A sample of 118 was taken which represented 20% of the population. 118 questionnaires were administered and retrieved and used for the analysis. The analysis was done using descriptive statistics involving mean, percentages and frequencies. One instrument was used and data were collected through a structured questionnaire titled "Assessment of ICT Facilities in the Teaching and Learning of Basic Technology Questionnaire (AICTFTLBTQ)". The questionnaires were structured based on the research questions. The analysis was done using frequencies, percentages and mean.

The findings of this study based on the questions revealed the following:

1. The findings of this study revealed that rating of ICT facilities in teaching and learning basic technology is poor. It also shows that ICT facilities are not of very high quality; ICT facilities are not of average quality; ICT facilities are not of the required number and ICT facilities are not in good working condition for teaching and learning basic technology.
2. The result shows that ICT facilities are not often used by teachers; ICT facilities are rarely used by teachers; teachers have poor disposition to the use of ICT facilities in teaching basic technology; teachers are not competent in the use of ICT facilities; lack of ICT skills prevents teachers from using ICT facilities in teaching basic technology.
3. The result shows that there are inadequate computers, internet, telephone, television, radio and audiovisual equipment for the teaching and learning basic technology; there is no available space for the use of ICT facilities; learners do not embrace positively the use of ICT facilities and learners do not have personal computers in learning basic technology.
4. The result shows that ICT-based services rendered by the ICT laboratories in relation to browsing and researching; printing of documents; and internet access is negative. This shows that Internet services are not readily available in ICT laboratories; subject teachers do not easily have access to ICT tools whenever needed; browsing for relevant resources for research are not in place; printing of essential documents is not cheap and available and student-computer ration is not based on standard
5. The result shows that difficulties were experienced by respondents in use of ICT facilities in learning basic technology. This shows that lack of technical support staff in handling laboratory processes hinders the use of ICT facilities. It also shows that poorly developed ICT infrastructure hinders effective teaching and learning of basic technology; high bandwidth costs for internet access hinders use of ICT facilities; unreliable supply of electricity hinders use of ICT facilities and inadequate funding and allocation to technology hinders use of ICT facilities for effective teaching and learning of basic technology.

## Conclusion

The study established that rating of ICT facilities in teaching and learning basic technology is poor; ICT facilities are not often used by teachers, there are inadequate computers, internet, telephone, television, radio and audiovisual equipment, ICT-based services rendered by the ICT laboratories in relation to browsing and researching; printing of documents; and internet access is

negative and difficulties were experienced by respondents in use of ICT facilities in the teaching and learning of basic technology in public junior secondary schools in Oredo Local Government Area.

### **Recommendations**

Based on the findings of the study the following recommendations were made:

1. ICT facilities of good qualities should be acquired by school administrators in enhancing teaching and learning basic technology.
2. Teachers should be encouraged by being trained in the effective use of ICT facilities for teaching and learning basic technology.
3. Stakeholders in the secondary education sector should endeavour to make sure that there are adequate computers, internet, telephone, television, radio and audiovisual equipment for teaching and learning basic technology.
4. Education stakeholders in secondary schools should ensure that ICT-based services rendered by the ICT laboratories in relation to browsing and researching; printing of documents are cheap, efficient and affordable.
5. School administrators should ensure that difficulties experienced by teachers in use of ICT facilities in the teaching and learning of basic technology are minimized.

### **Suggestions for further Studies**

Based on the conclusions and recommendations of this study, the following suggestions are made;

1. This study could be carried out in senior secondary schools.
2. This study could be carried out in private secondary schools in Nigeria.
3. Further studies should also be done in other areas of Nigeria using different population.

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