UTILIZATION OF ICT FACILITIES FOR QUALITY TEACHING AND LEARNING IN THE 21ST CENTURY: AN OVERVIEW OF PUBLIC SECONDARY SCHOOLS IN RIVERS STATE

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Abstract
This study aimed at examining the utilization of ICT facilities for quality teaching and learning outcome in the 21st century in some public secondary schools in Rivers State, Nigeria. The descriptive survey design method of investigation was adopted for the study. Questionnaire carved in analyzing the study while analysis of data was done using mean and standard deviation for analysis of research questions. A total population of the schools were 247 and total number of teachers 8234, and number of selected schools 35. The sample size of three hundred and fifty (350) was used for this study. Hence, two groups are the target sample population, one hundred and fifty (150) of questionnaire were given to the teachers and two hundred (200) for students. This was done by the use of simple random sampling technique and all copies of administered questionnaire were retrieved. The findings revealed that computer is the only ICT facility available in the schools under review, all other items listed were not available; ICT facilities were not utilized for quality teaching and learning in the 21st century classroom in public secondary schools in Rivers State; ICT facilities play major role in providing quality teaching and learning in the 21st century classroom in public secondary schools in Rivers State. It was also found out that the factors militating against the utilization of ICT facilities are lack of computer literate teachers, lack of ICT laboratories, irregular power supply, high cost of purchasing ICT facilities and inadequate funding in 21st century classroom in public secondary school in Rivers state. From the findings of this study, it was recommended among others that governments should equip public secondary schools with modern ICT facilities for academic performance; the Ministry of Education should integrate ICT in the school curriculum at various levels; training and retraining of teachers on ever-changing ICT should be incorporated in the school policy; NGOs and international organizations should step-up in assisting the government provide ICT facilities in the secondary schools; teachers should adopt ICT to support traditional teaching and learning method wholly as a means of ascertaining the goal of 21st century in teaching and learning.

Keywords: Information and Communication Technology**,** Utilization of ICI Facilities, Quality Teaching and Learning

Introduction

The political and economic stability of any nation hinges on her educational status and maturity. Innovations in information technology had helped to enhance teaching and learning. Digital literacy is copiously defined as the ability to use ICT facilities or tools, activities and technologies (productively tools, communication tools, and network) to locate information (*Lankshear, & Michele, 2008).* This involves ability to read and interpret media to reproduce data and images through digital manipulation and to evaluate and apply new knowledge gained from digital environment. Ajila (2001) assented to the fact that the learner is central to all the classroom instructional activities, communication is the heart and soul of the process. Thus utilization of ICT facilities for quality teaching and learning outcome in the 21st century is contingent upon a thorough knowledge of the learner and mastery of the techniques and process of effective communication. The judicious use of the ICT facilities will maximize their potential to facilitate learning, reinforce retention and quick retrieval; demand and work, display of skill, initiative ability, inventiveness and ingenuity, patience as well as through knowledge of the child and his/her socio-cultural environment.

Inspite of the huge outcome of quality teaching and learning that is attached to utilization of ICT facilities, its application in our public school is minimal and at other location is totally absent. Enthusiasm about ICT utilization has given access to improve teaching and learning capability through improvement on accessing material on the web and elsewhere for their own professional development.

Adgite, (2007) opined that African educational managers and policy maker are yet to know that the training of teachers on the use of ICT is of top priority. He said further that, the introduction of ICT into Africa is done by people from outside the community, who are bringing it to the school community. Unless, the teacher themselves with the principals or head masters as a learner's 'community' the problem will not be solved. ICT have practically made most part of the globe accessible within 24hours or at the snap of the fingers; satellite technologies and communications have not only brought man physical contact with outer space but have facilitated the tele-conference as well as face-to-face communication between and within nations and continents (Garrett & Verbik 2003a). The electronic industries with their products of computers have micro extended the capability of human mind beyond unfathomable limits.

Looking at this development strides in the tele-communication sector, Nigeria as a nation cannot afford to be left out in this guide. We intend to critically examine the utilization of ICT facilities for quality teaching and learning outcome in the 21st century public school.

Statement of the Problem

The child of the 21st century is a product of a technological society that has been saturated with unprecedented developments in all aspect of human development particularly in the aspect of ICT. This is all about electronic and communication equipment and materials, the computer and internet, which could aid teaching and learning through hearing and seeing, that is, learning through the ear as an auditory organ and seeing also meaning that which could be visualized. Inspite of the huge success or advantage the ICT has over the traditional educational teaching and learning, very little of ICT facilities are in

use in the public secondary schools. Educational policy makers have not keyed into this modern trend (e-learning) by formulating policies that will inculcate the use and training of teachers in the use and handling of ICT facilities in schools. Against the backdrop of the aforementioned, this study is focused on utilization of ICT facilities for qualities teaching and learning outcome in the 21st century public secondary schools.

Purpose of the Study

The aim of the study was to investigate the utilization of ICT facilities for quality teaching and learning in the 21st classroom in public secondary schools in Rivers State. The specific objectives were:

1. To ascertain the ICT facilities available as instructional technologies for the 21st century classroom in public secondary schools in Rivers State.
2. To determine the utilization of ICT facilities in helping quality teaching in the 21st century classroom in public secondary schools in Rivers State.
3. To determine the utilization of ICT facilities in helping quality learning in the 21st century classroom in public secondary schools in Rivers State.
4. To determine the ways utilization of ICT facilities can be improved for quality teaching in the 21st century classroom in public secondary schools in Rivers State.
5. To determine the factors militating against utilization of ICT facilities in the 21st century classroom in public secondary schools in Rivers State.

Research Questions

1. What ICT facilities are available as instructional technologies for the 21st century classroom in public secondary schools in Rivers State?
2. How does utilization of ICT facilities help quality teaching in the 21st century classroom in public secondary schools in Rivers State?
3. How does utilization of ICT facilities help quality learning in the 21st century classroom in public secondary school in Rivers State?
4. In what ways can utilization of ICT facilities be improved quality of teaching in the 21st century classroom in public secondary schools in Rivers State?
5. What factors militates against utilization of ICT facilities in the 21st century classroom in public secondary schools in Rivers State?

Literature Overview

The concept of Educational Technology

With the revolution of ICT in all spheres of life and in education, the Association of Education Community and Technology (AECT) came up with a new stand on Educational Technology. The definition states as follows: "Educational technology is the study and ethical practice of facilitating learning and improving performance by creating, using and managing appropriate technological process and resources.

This definition has four components. First, "students and ethical practice," this is to say that educational technology is not a tool rather it is a study and practice based on ethical practices. Second, the purpose of the subject is clear, facilitating learning and

improving performance." This implies that learning for improved performance is at that fore front of the field of study. Third, part of the definition tells us how practitioners do this, "by creating, using and managing". These are activities that can be carried out, using a camera, laptop and a network connection to create and upload, down lead the work of others, upload your work record with video camera for all to see, capture events with handheld mobile devices that are prevalent among students, use computers, to produce professional looking document with pictures and images, use the digital tool and activities to document learning events. The fourth component tells us what to work with, "technological processes and resources." This implies using computer and the internet as resources in this case, students are active participants in the teaching and learning process. This is the hallmark of constructivism. Knowledge is constructed as learners try to make sense out of their experiences.

Information and Communication Technology

Anderson & Weert (2002) stressed that ICT is the ability to use ICT tools, activities and techniques, productivity tools, communication tools, and network to locate information. This involves the ability to read and interpret media to reproduce data and images through digital manipulation and to evaluate and apply new knowledge gained from digital environment. The critical question in education is, in what ways can ICT enhance learning and teaching practices. Broadly, ICT tools help to open up opportunities for learning by enabling four major key processes in transforming teaching and learning as follows: access ideas and information from diverse sources through searching, locating, selecting and authenticating materials in a wide range of multimedia forms; extending ideas and information through processing, manipulating, analyzing and publishing materials in different multimedia forms; transforming ideas and information into new or different, forms through synthesizing, modeling, stimulating and creating materials in many multimedia styles and formats; and share ideas and information across local, national and international network by interacting electronically with others in actual or delayed time (*Anderson, & Van-Weert, 2002)*. Wang (2009) stated that a few emerging topics in ICT integration are as follow:

i. **Multimedia:** The pedagogical strength of instructional multimedia is that it uses the natural information process abilities that we already possess as humans. Our ear, eyes in conjunction with our brain form a formidable system for transforming meaningless sense data into information. The old saying that "a picture is worth thousand words" often under states the case especially with regards to moving images, as our eyes are highly adapted by evolution to detecting and interpreting movement. Multimedia course ware development process is the systematic approach to the analysis, design, development, implementation and evaluation of learning materials. Instructional design aims for a learner-centered rather than traditional teacher-centered approach to instruction, so that effective learning can take place. There appears to be an increasing realization by teaching faculty that in a particular situation, multimedia course ware can offer a pedagogical improvement on traditional teaching methods.

ii. **E-learning:** The link between distance learning and telecommunication is becoming even stronger yielding new solutions to old problems, innovative educational resources

and new teaching and learning practices. One of the most innovative and promising outcome of this relationship is e-learning and online education notably a process whereby teachers and students are linked up in an electronic media/computer network. The concept of e-learning and how it relates to effective use of ICT is critically important for teacher education, because it place the focus firmly where it should be jointly on pedagogy and new ICT. The term 'e-learning' or 'learning via electronic media,' nicely combines this twin concept. Firstly, the changing focus of pedagogy to learning and secondly, the new technology stretching beyond the walls of the traditional classroom. In other words, e-learning for teacher development is learning about with and through all electronic media (ICT) across the curriculum to support student learning. ICT is the means, and e-learning and the effective integration of pedagogy and ICT constitute the goal. There are number of benefits to e-learning. These include any time learning, anywhere learning, a synchronous interaction and group collaboration.

The concept of teaching and learning

Teaching is a conscious attempt made to help someone acquire knowledge or change an attitude, idea, skill or appreciation. It involves the teacher influencing desirable changes in the behavior of the learner. Awotua-Efebo, (1999) espoused that teaching is used to express two ideas-as a profession and an action embarked upon to influence a change in the behavior of another person. As a profession, it is what someone does to earn a living. Saylor and Alexander (1974) defined teaching profession as all those who involved in educational work such as teachers, counselors, administrators and curriculum consultants. Teaching in this context is inclined to those actions which occur in the school and within the classroom. To Clark (1995) teaching is the interaction between teachers and learners in a controlled and conducive environment in order to realize the expected change in the learner's behaviours.

Learning is a relatively permanent change in behavior or performance as a result of practice, exposure and experience; thus when a person's performance in any task changes as a result of practice, learning has occurred in the person. We can practice to read, write, sing, play tennis, or drive a car (Ellis in Nwankwo, 2007). The fact that learning has occurred can only be inferred from the performance of the individual in a particular task. Thus, performance is the index of measurement of learning which can be subjectively and objectively observed while we cannot observe learning, we can conveniently observe changes in performance which confirms that learning is directly associated with change in behavior which is measured through performance and also, learning is tied to conditions of practice or experience and this stance serves as delicate performance changes due to learning from such factors as maturation, drug state and fatigue.

According to Majundar (1997), development of new broadband communication services and convergence of telecommunication with computers have created numerous possibilities to use a variety of new technology tools for teaching and learning system. The integration of computers and communication offers unprecedented opportunities, to the education systems with its capacity to integrate, enhance and interact with each other over

a wide geographic distance in a meaningful way to achieve the learning objective. The growth of these communications and computer system, their ease of use, the power and diversity of information transformation transfer allow teachers and students to have access to a word beyond the classroom. Resta (2002) opines that education around the world is experiencing major paradigm shift in educational practices of teaching and learning under the umbrella of ICT enabled learning environment, whereas learning through facts, drill and practices, rules and procedures was more adaptive in earlier days, learning through projects and problems inquiry and design, discovery and invention creativity and diversity, action and reflection is perhaps more fitting for the present times. The major hallmark of this learning transition is from teacher centered to learner focus paradigm. ICT provides powerful tools to support the shift from teacher-centered to learner-centered paradigm and new roles of teacher, learner curricula and new media.

Zhu (2003) asserts to the fact that the integration of ICT into the very idea of teaching and learning always places pedagogy over technology. It is not only concerned with mastering ICT skills, but rather it involves using ICT to improve teaching and learning. The major emphasis of ICT infusion on pedagogy should be such that it tends to improve learning, motivate and engage learners, promote collaboration, foster enquiry and exploration, and create a new learner centered learning culture. It permits the move from reproductive model of teaching and learning to an independent, autonomous learning model that promotes initiating creativity and critical thinking with independent research. Learners are expected to collect, select, analyze, organize, extend, transform and present knowledge using ICT in authentic and active learning paradigm. Teachers are expected to create a new flexible and open learning environment with interactive, experimental and multimedia based delivery system.

Instructional Technology for the 21st Century Classroom

Instructional technology is today a subset of educational technology because the later covers a wider spectrum than the former. Instructional technology essentially deals with the process of using technology as a tool for instruction as well as describes the technologies that facilitate access to information of various kinds (Adegite, 2007).

This approach does not see technology as an end itself but rather as a delivery tools and means to an end. We need to know the major instructional technologies in education in the 21st century classroom. These include:

1. **The smart white interactive board:** The smart white interactive board is a huge board that comes with four colour pens and an eraser making it similar in a way to the normal white board being used in the classroom. It has to be connected to a computer which is also connected to a projector. The image in computer comes from the data projector. The connection of the computer to the projector enables the teacher to write electronically on the white electronic board. It has electronic notebooks with which a teacher can write his lesson electronically in these notebooks in the same way will write on the familiar non-electronic whiteboard. Also in the electronic board are subject galleries which contain subjects that are in the school curriculum and at the touch of a button, the teacher can go to the gallery of any subject he want to teach, (Richey, 2008).

2. **Classroom personal computer:** A personal computer (PC) is a small computer that is used by one person for teaching and learning at a time. When a teacher and students have their PCs, teaching and learning is enhanced. Projected instruction enables students to use their PCs alongside the teacher and what is referred to is easily comprehended (Shannon & Weaver, 2014)
3. **Websites/Blogs:** A blog is a web page made of usually short, frequently updated pots that are arranged chronically like a "what's new" page of a journal. This is bound to enhanced interaction and communication with other stakeholders, student, parents or community to facilitate learning (Wang & Reeve, 2007).
4. **Projector:** A piece of equipment that makes an image in the film appear magnified on the screen of a flat surface especially when used with a computer, presentation becomes very fascinating and appealing to students. The use of PowerPoint presentation is today a common phenomenon in technology learning (Wang & Reeve, 2007).
5. **Television:** This is a thing that is shaped like box with a screen in which you can watch broadcasting pictures and sounds. It can be used to show instructional DVDs or other relevant events that would aid a lesson.

Balanskat, Blamire & Kefala (2006) conducted a study carried out in evidences regarding the advantages and benefit of ICT in school achievement. It seeks to measure the impact of ICT on student's outcomes. The study also tried to establish a link between the use of ICT and students' result in examination. ICT has positive impact on student's performances in primary schools particularly in English Language. School with higher level of e-maturity show rapid increase in performance in scores compared to those with lower level.

Methodology

The design for the study is a descriptive survey design. This has to enable us gather meaningful data on the existing phenomenon for the purpose of reliability and generalization.

The target population is the entire teachers and students in all public secondary schools in Rivers State. There are 8,800 teachers and 18,280 students in Rivers State government owned secondary schools.

The sample size of three hundred and fifty (350) was used for this study. Hence, two groups are the target sample population, one hundred and fifty (150) were given to teachers and two hundred (200) for students. This was done by the use of simple random sampling technique.

Instrumnt used for data collection was questionnaire tagged "Effective Utilization of ICT Facilities for Quality Teaching and Learning Questionnaire (EUIFQTLQ)" developed by the researcher. The instrument was structured on a four points likert scale of Strongly Agreed = 4, Agreed = 3, Disagreed = 2, and Strongly Disagreed = 1, developed for data collection.

The data collected were analyzed using mean and standard deviation to answer the research questions. The null hypotheses formulated for this research were subjected to z-

test for the purpose of either accepting or rejecting them. Hypotheses were tested at significant difference of 0.05 alpha significant level.

Table 1: Distribution of population of teachers and total number of school.

s/n	Education zones	No. of schools	Total no. of teachers
1	ABOLGA	11	218
2	AHELGA	15	243
3	AHWLGA	15	246
4	AKULGA	5	101
5	ANOLGA	11	252
6	ASALGA	10	223
7	BOLGA	4	119
8	DELGA	10	243
9	ETLGA	17	527
10	ELELGA	5	222
11	EMOLGA	21	578
12	GOLGA	12	383
13	KELGA	13	478
14	KHALGA	22	777
15	OBALGA	14	1342
16	OBOLGA	3	73
17	OMULGA	4	86
18	ONELGA	20	443
19	ONOLGA	3	81
20	OYILGA	4	237
21	PHALGA	12	763
22	TAILGA	10	241
23	WALGA	6	364
	TOTAL	**247**	**8234**

Source: H.T.O statistics, PRS Dept. Rivers State Senior Secondary School Board.

Results

Research Question 1: What ICT facilities are available as instructional technologies for the 21st century classroom in public secondary schools in Rivers State?

Table 2 Mean rating score of respondent's ICT facilities available for instructional technologies for 21st century classrooms.

S/N	Items	N 350	M($\bar{x}$)	S.D	Rank Order	Decision
1.	There are internet connections in the schools for teaching students.		1.89	0.92	4th	Rejected
2.	CCTV for teaching students.		1.45	0.49	6th	Rejected
3.	There are computers to teach students.		2.75	1.03	1st	Accepted
4.	There are projectors for teaching students.		1.72	0.60	5th	Rejected
5.	Television sets for teaching students.		2.14	0.96	2nd	Rejected
6.	Website/blogs for teaching students.		1.94	0.85	3rd	Rejected

The data in table 2 contained the results of research question which reveals that ICT facilities utilization has significant impact on instruction technologies in the secondary schools at the mean score above the criterion mean of 2.50. This indicated the respondents agreed that there are computers to teach students, because the item has the mean of 2.7 and criterion mean of 2.50, therefore item 3 was accepted while items 1, 2, 3, 4, 5 and 6 had mean score below the criterion mean of 2.50, and was perceived as disagreed by the respondents thus, indicated that internet connection in the schools for teaching students, television sets for teaching students, CCTV for teaching students, projectors for teaching students, television sets for teaching students and website/blogs for teaching students were not available in public secondary schools in Rivers State. Therefore, only computers are available to teach students in public secondary schools in Riverrs State.

Research Question 2: How does utilization of ICT facilities help quality teaching in the 21st century classroom in public secondary schools in Rivers State?

Table 3: Mean rating scores of respondents on how utilization of ICT facilities help quality teaching in the 21st century classrooms.

S/N	Items	N 350	M($\bar{x}$)	S.D	Rank order	Decision
7.	ICT facilities are used as teaching aids to achieve quality teaching.		3.01	1.08	4th	Accepted
8.	ICT facilities motivate the teacher to work hard.		3.16	0.99	3rd	Accepted
9.	ICT facilities enhance quality of work of the teacher.		3.16	0.98	3rd	Accepted
10.	ICT facilities help the teacher to share information with other colleagues in other country.		3.19	0.99	1st	Accepted
11.	ICT facilities help the teachers to film strip their explanation to the students.		3.18	1.01	2nd	Accepted

Data in table 3 revealed that items 7, 8, 9, 10 and 11 had mean scores which are above the criterion mean of 2.50 respectively. This included that ICT facilities are used as teaching aids to achieve quality teaching, ICT facilities stimulate the teacher, ICT facilities enhances quality of work of the teacher, ICT facilities helps the teacher to share information with colleagues in other parts of country and ICT facilities help the teachers to the extent of stripping their explanation to the students. Thus, Utilization of ICT helps quality teaching in public Secondary School in Rivers State by motivating the teachers to work hard, also help the teachers to share information with other colleagues in other country etc.

Research Question 3: How does utilization of ICT facilities help quality learning in the 21st century classroom in public secondary school in Rivers State?

Table 4: Mean rating scores of respondents on utilization of ICT facilities help quality learning in the 21st century classrooms.

S/N	Items	N 350	M ($\bar{x}$)	S.D	Criterion mean	Decision
12.	ICT facilities makes learning more effective.		2.99	0.93	3rd	Accepted
13.	ICT facilities helps students to share information with colleagues in other parts of the country.		3.18	0.84	2nd	Accepted
14.	ICT facilities helps students in solving assignment.		3.19	0.80	1st	Accepted
15.	ICT facilities increases self-confidence in the learner.		2.89	0.94	4th	Accepted
16.	ICT facilities provides the students with new knowledge for skill development		3.15	0.77	3rd	Accepted

Data in table 4 revealed that items 12, 13, 14, 15 and 16 had mean scores which are above the criterion mean of 2.50 respectively. This include that ICT facilities make learning more effective, ICT facilities helps students to share information with colleagues in other parts of the country, ICT facilities help students in solving assignment, ICT facilities increase self-confidence in the learner and ICT facilities provides the students with new knowledge to the extent of developing new skills for improved performance. Thus, utilization of ICT facilities help in quality learning by making learning more effective, helping students to share information with other students in other part of the country, increases self confidence in the learner.

Research Question 4: In what ways can the utilization of ICT facilities be improved for quality of teaching in the 21st century classroom in public secondary schools in Rivers State.

Table 5: Mean score ratings of respondents on the ways in which the use of ICT facilities be improved for quality teaching in the 21st century classrooms.

S/N	Items	N 350	M	S.D	Criterion mean	Decision
17.	Funds are provided for ICT improvement in the schools.		3.27	0.87	3rd	Accepted
18.	Seminars and workshops are often organized for teachers for ICT knowledge acquisition.		3.35	0.73	1st	Accepted
19.	Government and non-government organization (NGO) often help to establish ICT centers in the schools.		3.34	0.87	2nd	Accepted
20.	There is regular curriculum update for teachers and student to accommodate the changes in the ICT industries.		3.23	0.70	4th	Accepted
21.	ICT facilities are made accessible to students and teachers in my school.		3.27	0.70	3rd	Accepted
22.	Teachers now give students assignment online through the computer.		3.35	0.73	1st	Accepted

Table 5 showed that items 17 to 22 has significant difference with the mean and standard deviation above the decision criteria of 2.50 and 0.05 respectively. Item 17 revealed that funds are provided for ICT improvement in the schools at 3.27 and 0.87 mean and standard deviation. However, item 18 showed that seminars and workshops are often organized for teachers for ICT knowledge acquisition at 3.35 and 0.73 mean and standard deviation. Item 19 upholds that government and non-government organization (NGO) often help to establish ICT centres in the schools at 3.34 and 0.87 mean and standard deviation. Item 20 showed that there is regular curriculum update for teachers and student to accommodate the changes in the ICT industries at 3.23 and 0.70 and item 21 revealed that ICT facilities are made accessible to students and teachers in my school at 3.27 and 0.70 respectively. The results clearly shows that there is utilization of ICT facilities which improves the quality of teaching in the 21st century classroom in public secondary schools in Rivers State by giving access to students to now receive and carry out assignments through the use of computer and internet, funds are also provided for ICT improvement in school.

Research Question 5: What factors militate against utilization of ICT facilities in the 21st century classroom in public secondary schools in Rivers State?

Table 6: Mean rating scores of respondents on the factors militating against utilization of ICT facilities and quality of teaching in the 21st century classrooms.

S/N	Items	N 350	M($\bar{x}$)	S.D	Criterion mean	Decision
23.	There are lack of computer literate teachers in the schools.		3.36	0.62	1st	Accepted
24.	There are lack of ICT laboratories in the schools.		3.22	0.70	3rd	Accepted
25.	There is irregular power supply in the schools.		2.95	0.82	5th	Accepted
26.	There is high cost of purchasing ICT facilities.		3.17	0.81	4th	Accepted
27.	There is lack of adequate funding.		3.30	0.68	2nd	Accepted

Data in table 6 revealed that items 23, 24, 25, 26 and 27 had mean scores which are above the criterion mean of 2.50 respectively. This indicated that there are lack of computer literate teachers in the schools, there are lack of ICT laboratories in the schools, there is irregular power supply in the schools, which has the mean of 2.50, standard deviation of 0.82, there is lack of adequate funding. Thus, all these militate against utilization of ICT facilities and quality teaching in the various schools where these facilities exist.

Discussion of findings

ICT facilities available: the study revealed that computer is the only ICT facilities available as instructional technologies for the 21st century classroom. Internet connections, CCTV, projector, television, computers and website/blogs are not available. The findings shows that there are instructional technologies in the secondary schools but were not being utilized in the public secondary schools in Rivers State except computers. These findings agreed with Majundar and Park (2002) that more learning instructional technologies are not suffice, but utilization of ICT to improve the teaching and learning is the key pedagogy-technology integration. In this study the ICT facilities available for use is equally grossly inadequate.   This means that students will be struggling over the few available ones. It will equally mean that, those few would have been over used because of its limited numbers, which will demand constant maintenance. *Nweze Chidiebere Augustine*

Utilization of ICT facilities for quality teaching: The finding revealed degree of utilization of ICT facilities for quality teaching for 21st century classroom. This reveals that ICT facilities are used as teaching aid to achieve quality teaching. ICT facilities stimulate the teacher, helps the teacher to share information with the colleague in other part of the country. But however, the finding reveals that ICT facilities required for quality teaching are not being utilized in public secondary schools in Rivers State and the few utilized ones are grossly inadequate as such not utilized for quality teaching. Adegito (2007) observed that the introduction of ICT into public schools is done by people from outside the community who are bringing it to the school community. Zhu, (2003) asserts that integration of ICT into the very idea of teaching and learning always places pedagogy over technology. It is not only concerned with mastering ICT skills, but rather it involves using ICT to improve teaching and learning. The major emphasis of ICT infusion on pedagogy should be such that it tends to improve learning, motivate and engage learners, promote collaboration, foster enquiry and exploration, and create a new learner centered learning culture. In this case students will not enjoy the full benefits attached to learning with ICT tools as a 21st century student should.

Utilization of ICT facilities for quality learning: It was also revealed that ICT facilities make learning more effective, help student to share more information and in solving assignment and provides the students with new knowledge to the extent of developing new skills for improved performance. Blankat, Blamire & Kefala (2006) also argued that the advantages and benefit of ICT in school achievement is significant for academic achievement of student. The study also tried to establish a link between the use of ICT and students' result in examination. ICT has positive impact on student's performances in primary schools particularly in English Language. The utilization of the ICT helps them in their learning process, and makes it more effective, they can do assignments online and share information with other students in other parts of the country.

Ways ICT facilities utilization can be improved quality of teaching: The result showed that funds are provided for ICT improvement in the schools, that seminars and workshop are often organized for teachers for ICT knowledge acquisition. This shows clearly that

there is utilization of ICT facilities which improves the quality of teaching in the 21st century classroom in public secondary schools in Rivers State. Student now receive and carry out assignment through the use of computer and internet. Majundar&Park, (2002), upholds that inspite of the best efforts of teachers, there will be a number of learners who will not be satisfied with the pace of instruction of the teacher. There may be fast learners, average learners and slow learners in a classroom environment. It is impossible to satisfy all categories of learners with their specific learning styles. It is in this situation that teachers become helpless in a conventional teaching and learning environment. One way to solve such situation is to create interactive multimedia based instructional material where learners are given chance to view the topic at their own pace and in accordance to their individual interests, needs and cognitive processes. As such, multimedia course ware can be of great help to teacher to meet the challenges of such situation. Multimedia courseware can introduce profound changes in the learning outcomes when it is being used along with face-to-face instruction in designing learning materials using ICT productivity considered carefully. The use of ICT should satisfy the diverse needs of all kinds of learners characterized by all kinds of socio-cultural conditions including the diversities of multiple intelligence. This ICT tools can be improve further by ensuring the users are retrained as time goes on to fit in to the changes that may be affecting proper utilization, in that way improvement will be certain.

Factors militating against utilization of ICT facilities: Finally, it was found out that lack of computer literate teachers in the schools, lack of ICT laboratories in the schools, irregular power supply in the school, lack of adequate finding were major factors militating against utilization of ICT facilities for quality teaching and learning in public secondary schools in Rivers State. Okon (2007), also stated that cost is a challenge but it is also relative. The alternative mode of education delivery is even more expensive. Also he said that we should know that the cost of acquiring and establishing ICT is high but the usage and maintenance cost is low. This work further revealed the challenges facing the utilization of ICT facilities which hinders adequate usage and hinders 21st century ICT compliance literates from having quality teaching and learning.

Conclusion

This study basically examined ICT facilities utilization and their impact on quality teaching and learning outcome in the 21st century classroom. One important factor that emerged from this study was the fact that the utilization of ICT facilities affects the quality of teaching and learning outcome in the 21st century classroom. It was revealed that teachers were stimulated by the use of ICT facilities thereby making teaching fun and pleasurable. The implication of the findings in this study is that for students to gain from the trend of ICT facilities of 21st century, there is urgent need for adequate availability and effective utilization of ICT facilities in the 21st century classroom in public secondary schools in Rivers State. This is because ICT revolution has impacted on all aspects of the international community in Nigeria. Our public secondary schools cannot be left out of it. Apart from some problems such as high cost and inadequate funding, ICT facilities utilized

in the 21st century classroom in public secondary schools in Rivers State will enhance the growth of educational system and the national economy in general.

Recommendations
Based on the findings of the study and conclusion, the following recommendations were made:
1.   Governments, the owner of public secondary schools should fund education adequately thereby making ICT facilities available and their utilization effective.
2.   The various stakeholder should be sensitized to provide public secondary schools with the required infrastructural ICT facilities so as to enhance effective educational service delivery through quality teaching and learning.
3.   Public secondary schools should see the need to integrate ICT facilities into classroom activities and also improved the capacity and level of adoption of ICT facilities in teaching and learning processes.
4.   For utilization of ICT facilities, all members of staff should be trained and retrained continuously on the ICT skills acquisition and specialization.
5.   The funding agencies for ICT development such as the government, NGOs and international organization may need to monitor the release of fund to ensure that they are used for the purpose they are meant for.
6.   Teachers are advised to use ICT to support traditional teaching and learning method. Wholly depending on traditional method in 21st century will be anti-development in terms of teaching and learning. There should be a gradual phasing out of the traditional method.

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