APPRAISAL OF INFORMATION AND COMMUNICATION TECHNOLOGY COMPLIANCE OF TERTIARY INSTITUTION TEACHERS IN RIVERS STATE, NIGERIA

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Abstract

Information and Communication Technology (ICT) provides a window of opportunity for educational institutions and other organizations. ICT enhances teaching and learning through its dynamic interactive and engaging content. It has the potential to accelerate, enrich and deepen skills; motivate and engage students in learning. This survey study appraised ICT compliance by investigating 760 tertiary institution teachers (260 females and 500 males) who were randomly selected from six tertiary institutions in Rivers State, Nigeria. Three research questions were formulated to guide the study. A 30-item questionnaire structured in a 'Yes' or 'No' format was used to elicit information from the respondents. The questionnaire was face-validated by three experts in the professional area of ICT. Analysis of data was done with the use of Statistical Package in Social Sciences (SPSS) and results were presented in frequencies and percentages. Results indicated that the teachers have access to most of the ICT facilities investigated. However, a very high % of teachers were not compliant in some of the ICT tasks examined (use of statistical packages, use of interactive boards, organizing audio and video conferencing). The study also revealed the major challenges to teachers' compliance to ICT as irregular power supply, inadequate provision of ICT facilities, inadequate training and orientation of teachers, and high teachers' workload among others. The paper therefore recommends that cheap alternative sources of power should be engaged, there should be increased funding of ICT projects by government and private sector initiatives and there should be regular training and retraining of teachers in ICT.

Keywords: *Information and Communication Technology, Appraisal, Compliance, Teachers*

Background to the Study

Information and Communication Technology (ICT) as a tool has transformed the world, brining enormous benefits in key area ranging from scientific research and education to basic human services like communications, health, transport and commerce. Arguably education remains the live wire of a nation's developmental process, and the entire system of education depends on the teacher for effectiveness. Egbule (2002) opined that a teacher is that person or individual who is liberally educated, current in subject matter and its pedagogy; aware of what is expected of teachers and schools (institutions); skillful and consecutions in planning, preparing for and carrying out instruction. The author further noted that teacher preparation is a systematic process that equips individuals with the necessary skills, knowledge and abilities to teach more effectively at the various levels of the education system.

Nothing therefore should be left to chance in the id to equip the teacher to be a professional that is vast with use ICT accessories especially in the electronic driven 21st century. To this end, there is the need for appraisal. Summers (2003) defined appraisal as a statement or opinion judging the worth, value, or condition of something. In order words discussing the quality of an individual's work and how well the job is done. From the foregoing definition, this paper presents a judgment of quality and the extent of use of ICT by teachers in the tertiary institutions in Rivers State, Nigeria. Appraising the extent of use also implies examining compliance of teachers, vis-à-vis information and communication technology.

Information and Communication Technology has changed the way people live, work and play (Berenfeld, 1999). The global interest for advancement of education in both developed and developing countries of the world has by challenged by ICT. In order to fit into the new trend, it is necessary for Nigerian tertiary institutions to develop a culture that places high premium on ICT compliance education and training. Being ICT compliance means being ale to retrieve, store, and use available data made possible by the presence of ICT for research and other educational purposes. ICT compliant teachers use the tools of ICT to reengineer research in education to meet up with emerging global challenges and thus be more effective, efficient and production their profession. Hence; ICT compliant teachers are those who are able to understand and use the technologies of the information age to influence their students and their career positively in spite of the odds (Abiogu, 2007).

Objective of the Study

It is based on this premise the study sought to appraise the ICT compliance of teachers in tertiary institution in Rivers State, Nigeria. Specifically, the objectives are to:
1. examine the ICT accessories used by teachers of tertiary institutions in the teaching
2. highlight ICT packages that teachers of tertiary institutions can operate
3. identify the challenges of teachers to ICT compliance in tertiary institutions

Research Questions
1.   What are the ICT accessories used by teachers of tertiary institutions in the teaching?
2.   What are the ICT packages that teachers of tertiary institutions can operate?
3.   What are the challenges of teachers to ICT compliance in tertiary institutions?

Literature Review
Concept of Information and Communication Technology
The concept ICT has come of age. Often, it is referred to as Information Technology (IT) or Communication Technology (CT). National Comical for Education Technology (NCET) (1995) defined ICT as the means of accessing or receiving, storing, transferring, processing and sending ideas, perception or information through computers and other communication facilities. Mailer (2005) observed that the whole ranges of technologies which are involved in information processing and electronic communication are referred to as Information and Communication Technology (ICT). These the author opined includes radio, television, videos, computers, sensors, interface boxes, email, satellite connection, internet and software's and materials which are employable by teachers in their teaching activities. Lending voice to this issue, Nkanu (2006) identifies computers, photocopiers, CD-Rom, database, printers, videotapes and audio tapes as some examples of ICT. These examples are themselves umbrella terms covering other subordinate units. For instance, the computer has software and hardware components. Software applications to the computer include Microsoft Word, Excel, PowerPoint, Oracle, Photoshop, Coral-Draw, AutoCAD, SPSS, and internet explorer among others. Some hardware includes multimedia projectors, interactive white boards, lap tops etc.

Imperatives of Information and Communication Technology for Teaching in Tertiary Institutions
Information and Communication Technology (ICT), in the view of the World Bank (2003) holds out the opportunity to revolutionize pedagogical methods, and expand access to equal education system. ICT involved a process of engaging minds and creating awareness for exploration and discovery through such acts as providing information, explaining concepts advancing arguments etc. to the extent that it facilitates and enhances communication (teacher-student) (Apia & Oguzor, 2013).

One very prominent feature of ICT in education is its ability to transcend time and space. For instance, in asynchronous learning (learning characterized by a time lag between when the instruction was delivered and when it was received y the learners), online course materials are accessible to the learners at their convenience irrespective of location. This feature is also share by synchronous learning (a real-time learning event in which all participants are logged on at the same time and communicate directly with each other); in this location is not a barrier. Examples of synchronous learning include audio conferencing, or teleconferencing, video conferencing, chat room while those of asynchronous are CD-ROM, email, web forum. An ICT compliant teacher enriches his knowledge and avails such knowledge to his students (Ejionueme, 2012), the 21st century professional teachers are expected to conform to a set standard and take tie to develop skills to meet up with the competencies of the century. Access to rapid information via the internet for

research and other educational purposes is a paramount need. Today most standard libraries all over the world are linked via the internet. The teacher's compliance to ICT saves him time and leaves him with more space to do other things and concentrate more on classroom interaction with students. Such a teacher is better challenged professionally, hence, better able to deliver in the teaching world (Abiogu, 2007).

Challenges to Information and Communication Technology Compliance by Teachers in Tertiary Institutions
In Nigeria there has observed a slow access to ICT equipment both for research and developmental purposes and this implies slow growth, low internet connectivity as well as other access series (Ejionueme, 2012). A research conducted by the Global Information technology in 2004, the Networked Readiness Index (NRI) was used to measure the degree of preparation of a nation to participate in and benefit from ICT development. Nigeria was ranked 86th out of 104 countries. In 2005, the research was repeated to cover 115 economics. Nigeria was ranked 90th out of the 115 countries surveyed. This was an indication that teachers in tertiary institutions in Nigeria have a strong task to brace-up with ICT. Under funding in the view of Okebukola (2005) has been a major problem of education in Nigeria. It has resulted in the low level of provision of internet facilities and other ICT infrastructure. Other constraints enumerated by Egunjobi and Ibode (2006) are erratic power supply, cost of accessories, and reluctance to change. Ajayi and Ekundayo (2009) also submitted that in most institutions, there is dearth of computer literate teachers, which more or less hinders effective utilization of ICT in the process of teaching. Afolabi, Adedapo and Adeyanju (2006) in a study also noted that work load of teachers deprives them of time to use ICT facilities.

Methodology
A survey design was adopted to investigate the ICT compliance of tertiary institution teachers in Rivers State. The sample consisted of 760 teachers who were randomly selected from six tertiary institutions in the state. The institutions are University of Port Harcourt, Rivers State University of Science and Technology, Ignatius Ajuru University of Education, Federal College of Education (Technical) Omoku, Rivers State Polytechnics Rivers State College of Arts and Science. Three research questions guided the study. A 30 item questionnaire structured in a yes or no format was used to elicit information from the respondents. The instrument was face validated by three experts in ICT. Analysis of data was done with the use of Statistical Package in the Social Science (SPSS). Results were presented in percentages and frequencies.

Results
Research Question 1: What are the ICT accessories used by teachers of tertiary institutions in the teaching?

Table 1: Frequencies and Percentage Responses on the ICT Accessories used by Teachers

S/N	Items	Frequency		Percentage (%)	
		Yes	No	Yes	No
1.	You own a personal computer	678	82	89.2	10.8
2.	You own a printer	380	380	50	50
3.	You own a modem for internet access	493	267	64.9	35.1
4.	Your institution has internet facilities	760	0	100	0
5.	You have free access to internet facilities	398	62	94.9	5.1
6.	Your institution has interactive boards	102	658	17.9	82.1
7.	Your institution has multimedia factors	740	20	97.4	26
8.	Your institution organizes ICT training	555	205	73	27
9.	Your institution has a website	760	0	100	0
10.	Your institution has an e-library	666	94	64	36

Table 1 indicated that ICT accessories use by the teachers include personal computers (89.2%), modem for internet access (64.9), internet facilities (100%), access to internet (94.9%) and website (100%). Other accessories available are ICT training (73%) and e-library (64%). However 82.1% respondents indicated that their institutions have no interactive boards.

1. Research Question 2: What are the ICT packages that teachers of tertiary institutions can operate?

Table 2: Frequencies and Percentage Responses on the ICT packages that Teachers of Tertiary Institutions can operate

S/N	Items	Frequency		Percentage (%)	
		Yes	No	Yes	No
11.	You can browse the internet and download materials	748	12	98.4	1.6
12.	Your email address is functional	753	7	99.1	0.9
13.	You can prepare/present works in PowerPoint	580	180	76.3	23.7
14.	You can use statistical software for analysis	244	516	32.1	67.9
15.	You can teach with the interactive board	57	603	20.1	79.3
16.	You can operate the computer without assistance	402	358	52.9	47.1
17.	You can produce a data CD-Rom	445	315	58.6	41.4
18.	You can organize teleconferencing	25	735	3.3	96.7
19.	You can organize video conferencing	18	742	2.4	97.6
20.	You can prepare/present work in Microsoft Word	713	47	93.8	6.2

Table 2 shows that the respondents can perform certain ICT packages such as browsing of the internet to download information (98.4%). They have functional emails (99.1%); prepare and present PowerPoint and Microsoft Word, 76.3% and 93.8% respectively. But respondents negatively responded to their ability to use statistical soft ware (67.9%); organize teleconferencing (96.7%) and organize video conferencing (97.6%).

Research Questions 3: What are the challenges of teachers to ICT compliance in tertiary institutions?

Table 3: Frequencies and Percentages responses on the challenges of teachers to ICT compliance

S/N	Items	Frequency		Percentage (%)	
		Yes	No	Yes	No
21.	Inadequate training programmes for teachers	758	2	91.8	8.2
22.	Irregular power supply	733	27	96.4	3.6
23.	High cost of ICT accessories	380	380	50	50
24.	Inadequate provision of facilities	703	57	92.5	7.5
25.	Excess worked of teachers	587	173	77.5	22.8
26.	Inadequate knowledge of ICT	495	265	65.1	34.9
27.	Slow rate of adoption by teachers	530	230	69.7	30.3
28.	Lack of support/assistance from government	185	575	75.7	24.3
29.	Inadequate professional personnel	413	347	54.3	45.7
30.	Lack of regular orientation	610	50	80.3	19.7

Table 3: Indicates the challenges of teachers to ICT compliance. A myriad of challenges exist as shown by the response pattern. They are inadequate training programmes (91.8%), irregular power supply (96.4%) and inadequate provision of facilities (92.5%). Others include work load of teachers (77.2%); lack of government support (75.7%) and lack of regular training and orientation (80.35).

Discussion of Findings
From the results of the study, it was observed that most of the ICT accessories are available to teachers in the tertiary institutions for use in the teaching process (Table 1). This agrees with the works of Mailer (2005) and Nkanu (2006) who corroborated that ICT accessory to include videos, computers, internet, CD-ROM, database, satellite connection, e-mails and software's. The results also indicated the various ICT packages that the teachers can operate. Some of which include browsing the internet and download information, preparation and presentation of PowerPoint and Microsoft word (Table 2). This is an indication that a percentage of the teachers are ICT compliant since in the view of Abiogu, (2007) ICT compliance means being able to retrieve, store, and use available data made possible by the presence of ICT for research and other educational purposes. However, in packages such as use of statistical software, audio and video conferencing, they are not compliant. This is in consonance with the report of Ajayi and Ekundayo (2009) that most institutions lack computer literate teachers which hinders effective utilization of ICT. The findings also highlighted some challenges of teachers to ICT compliance to include irregular power supply, inadequate facilities, lack of government support and irregular orientation (Table 3). This finding is supported by Okebukola (2005); Egunjobi and Ibode (2006) as they noted that underfunding, inadequate ICT infrastructure, erratic power supply and reluctance to change are constrains to effective utilization of ICT in tertiary institutions in Nigeria

Conclusion and Recommendation
Going by the volume of literature cited, the importance of ICT in the education sector cannot be overemphasized. Especially, as it pertains to teachers in the tertiary institutions. ICT provides a window of opportunity for educational institutions as it enhances teaching and learning through its dynamic interactive and engaging content. This study has appraised ICT compliance of teachers in tertiary institutions in Rivers State, Nigeria while nothing the various challenges in the sector. Therefore, the paper recommends among that:
i.   Cheap alternative sources of power should be engaged to eliminate the problem of power supply.
ii.   There should be increased funding of ICT projects by government and private sector initiatives.
iii.   Retraining and reorientation of personnel should be a critical tool in the teaching service.
iv.   Proficiency in ICT should form part of the basic criteria for academic staff promotion.

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Appendices
Fig. 1: The Photograph of a Digital Classroom in a Tertiary Institution,
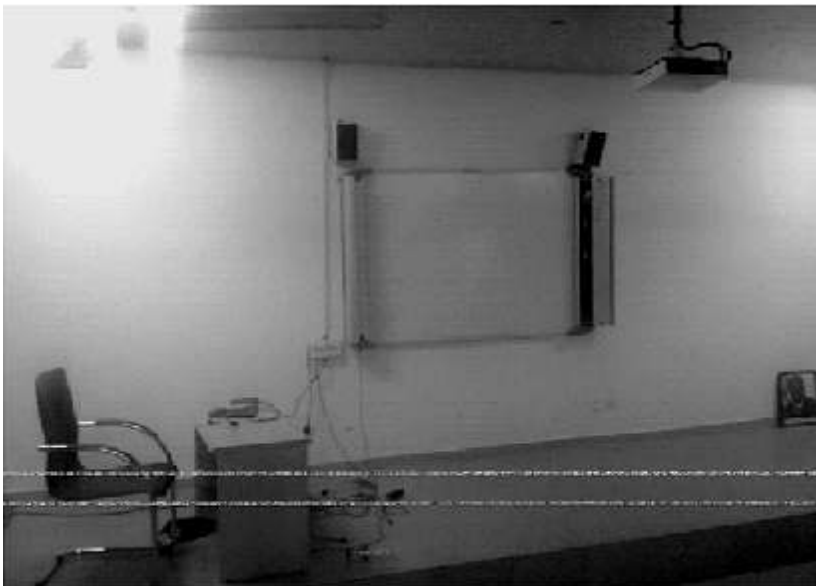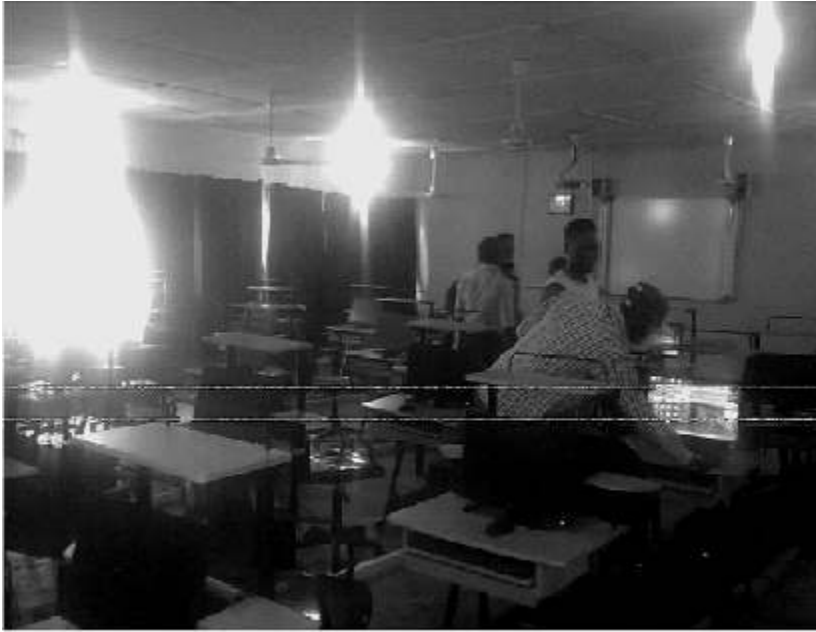Rivers State

Fig. 2: Photographs of an Interactive White Board in a Classroom

Fig. 3: Photographs of a Tertiary Institution Teacher Delivering a Lesson