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Utilization of Information and Communication Technology for Quality Instruction in Rivers State University of Education Port Harcourt: An Assessment

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Abstract
The issue of information and communication technology (ICT) in teaching apparently facilitates both the effort of the teacher as well as the learner. As the world is said to have been globally connected, it then follows that connectivity has no exception. Institutions of higher learning are presumably supposed to be the benefactors of most ICT facilities. For instance institutes of education, faculties of education, colleges of education and other teacher producing institutions, stand the chance of utilizing these facilities fully for instructional purposes. This presupposes that prospective teachers should benefit from these facilities so as to enable them use the facilities in instruction. Two hundred and seven lecturers were sampled for the study using simple random sampling. The instrument for data collection was questionnaire. The data collected for the study were analyzed using mean. The results show that very few of the lecturers utilize ICT facilities in their instruction. Recommendations were made in line with the findings.

Keywords: education, ICT, utilization, instruction

INTRODUCTION

Information and Communication Technology (ICT) deals with the handling and processing of information using all kinds of electronic devices (NCET, 1995). These electronic systems can be used for broadcasting, telecommunications, and all forms of computer-mediated communications. (ICT) centered education covers the use of computers, online self-learning packages, interactive CDs, satellites, radio, optical fiber technologies, telepresence system and all types of information technology (IT) hardware and software (Akudolu, 2002; Adebayo, 2002). Hence Bakie (2001) described information technology as the integration of computer technology, mainly in the form of Internet, and information management systems. It gives users the opportunities to handle text and images, numbers and graphs, instruction, sound and music and to process information by organizing and reorganizing, storing and retrieving, sorting and analyzing, presenting and communicating. In order to attain these skills, there is need for the users to be computer literate (Olagunju, 2002). Hence, the Federal Government of Nigeria incorporated computer education as one of the subjects to be offered at all levels of her educational system. The *National Policy on Computer Education* also stipulates the various objectives to be attained at these levels.

At the tertiary level, for instance, the students should

i. be conversant with and be able to use any curricular program developed for their teaching subjects;
ii. attain skills necessary for management of computer laboratories, and
iii. develop and write simple programmes in BASIC, LOGO, and possibly PASCAL.

Since teachers-in-training are expected to teach computer studies at the primary and secondary levels, they should therefore program and process given data with maximum speed and accuracy with high level of competence to handle the different modes by which the computer can be used in teaching learning situations. According to Anaekwe (2003), the impact of ICT is being felt in recent times in all spheres of human endeavour and education sector cannot be an exception. It has been observed that Nigerian youths lack modern skills in ICT to compete in global economy. Thus, youths are being called upon to use ICT as a platform for skill acquisition as the world experience a revolution where emphasis is placed on knowledge economy rather than on an industrial finite resource economy like in Nigeria where there is heavy reliance on oil for its revenue generation (Tribune, 2003).

In the education sector, ICT remains the key factor that blends both teaching and learning. ICT, according to the World Bank (2003:34), holds out the opportunity to revolutionize pedagogical methods, and expand access to equal education system. Going by this, there is the need to brace up to the new challenges and systems of education through the development and use of ICT in schools (Kalu & Ekwueme, 2003). The importance of ICT in

education cannot be over-emphasized. It does not, for instance, only assist in pedagogy, but also enhances storage of vital information like school library, laboratories and staff strength enrolment records. Computer, for instance, can be used in a variety of ways for teaching. According to Derbyshire (2000), computer is used as a tool for teaching and learning computer skill; enhancing the presentation of classroom work; teaching and learning repetitive tasks; teaching and learning intellectual thinking and problem solving skills; stimulating creativity and imagination; and research and communication. Radio as well as cable satellite, according to Sophia (2003), can be used to broadcast educational programme to children/adults who have few opportunities to attend schools on regular basis, for instance, it broadcasts informative programmes to children and adults on basic subjects such as science, social studies, mathematics, grammar and spellings. The use of aids such as chalkboard, projectors, tape recorders, TV in many school systems have improved the quality of education which brought about further improvement in the educational sector (Ekoko 1996). The emergence of fourth generation "flexible learning", according to Harry and Kham (2000), has been suggested as a combination of interaction of multimedia, expanded teaching learning resource, and enhanced computer and Internet supported interactivity. ICT was used as a basis for the delivery of education, information and training.

E-learning generally refers to teaching and learning that takes place through the Internet. This is defined as the use of computer technology to design, select, administer and extend learning. The Commonwealth of Learning (1999) sees E-learning strategies as most pertinent at higher levels of education, where dependable and affordable Internet access is available. It has also been discovered that ICT can provide high quality teacher development strategies with benefits beyond those found in traditional face-to-face approaches. In teacher training it provides an important opportunity for trainers when properly implemented. Serious minded teachers and lecturers can utilize ICT facilities to drive home abstract ideas to the understanding of students. Take for instance, slide projector uses small negative films (motionless) and project it for explanation of some concepts. Opaque projector, enlarges tiny words or small pictures and give one opportunity of tracing such picture for classroom demonstration. Overhead projector enlarges words and pictures, and project to a screen for viewing and demonstration accordingly in teaching. In most institutions of higher learning, Information and Communication Technology materials are provided to bring into practice the aspiration of social order in science and technology. With the application of such materials in lectures, laboratories and other ways of instruction, teaching and learning could easily be enhanced. The problem of this study is to determine the extent lecturers utilize the provided ICT materials to enhance their teaching, and to find out how many lecturers have acquired the knowledge of these materials, and whether they utilize the acquired knowledge in classroom instruction.

The study was guided by the following research questions:

1. To what extent do lecturers utilize Information and Communication Technology (ICT) in enhancing instruction?
2. Which of the ICT facilities are mostly utilized by the lecturers in their instruction?

METHOD

The design adopted for the study was descriptive survey. This involves collection of data using questionnaire the purpose which is to describe and interprete existing conditions or qualities regarding a given population (Anaekwe and Ozigbo, 2002). The design was considered suitable going by the nature of the study. The population of the study consisted of 271 academic staff in Rivers State University of Education, Port Harcourt, spread among its five schools as at 2009/2010 academic session. A sample of 207 were drawn from the population through stratified random sampling technique. The table below shows the five schools and the sample done in each of the department within the schools.
Tables below show schools and the number of lecturers in each department and the number sampled.

Table 1: School of Arts and Social Science

S/No	Department	No. Strength	No. Sampled
i.	CRS Dept.	14	11
Ii	Geography Dept.	10	8
iii.	ISS Dept.	13	10
iv.	Social Studies Dept.	18	14

Table 2: School of Education

S/No	Department	No. Strength	No. Sampled
i.	Curriculum Dept.	7	5
Ii	Foundation Dept	7	5
iii.	Psychology Dept	14	11
iv.	GSE Dept.	6	5
v.	PES Dept	11	8
vi.	Library Studies Dept.	6	5

Table 3: School of Languages

S/No	Department	No. Strength	No. Sampled
i.	Arabic Language Dept.	11	8
Ii	English Language Dept.	17	13
iii.	French Language Dept.	6	5
iv.	Hausa Language Dept.	10	8
v.	Igbo Language Dept.	6	5
vi.	Yoruba Language Dept	5	4

Table 4: School of Science

S/No	Department	No. Strength	No. Sampled
i.	Biology dept.	15	11
Ii	Chemistry dept.	13	10
iii.	Computer dept	8	6
iv.	HPE dept	12	9
v.	Mathematics dept	11	8
vi.	Physics Dept.	8	6
Vii	Integrated Science Dept	8	6

Table 5: School of Voc Education

S/No	Department	No. Strength	No. Sampled
i.	Agric Dept.	11	8
Ii	Business Dept	11	8
iii.	Home Economics Dept	13	10
	Grand total	271	207

The instrument used for data collection was a standard questionnaire which was used to collect data on the utilization of Information and Communication Technology (ICT) facilities to facilitate instruction in the classroom. The instrument was validated by three academic colleagues in both Rivers State University of Education and University of Port Harcourt specialized in Measurement and Evaluation, and Educational Psychology. The reliability of the instrument was established using test-retest method, and application of Pearson's Production moment correlation which was established to be 0.69.

The questionnaire contained a four points response grid with numerical values of:

Used very often = 4
Used often = 3
Used seldomly = 2
Not used at all = 1

} with mean of 2.5

The instrument was administered directly to the lecturers in their various departments and schools by the researchers having 100% assurance of returns. The entire research questions were analysed using mean, and are presented in tables for purposes of clarity. Based on the Likert points above, the computed mean was 2.5. In this case, any mean score of 2.5 and above was regarded as positive or utilized, while any mean score less than 2.5 was regarded as negative or not utilized.

FINDINGS AND DISCUSSION

The researcher used the five tables (tables 1 to 5) below to answer the two research questions.

Research question 1: sought information on the extent to which lecturers utilize Information and Communication Technology (ICT) in enhancing instruction. Table 1 covered School of Arts and Social Sciences, made up of four departments. A close look at the table shows that not all the 14 listed and provided ICT materials are utilized as shown by their mean ratings. For instance, CRS and SOS utilize 5 ICT materials each out of 14 items whereas Geography and ISS utilize 6 and 8 items respectively. This negates Sophia (2003) who opined that in institutions of higher learning, ICT materials are provided to bring into practice the current social order in science and technology.

Table 6: The mean ratings of lecturers' utility of ICT in instruction in school of social sciences

		CRS	Geography	ISS	S/Studies
		Total Scores, mean and utility	Total scores, mean and utility	Total scores, mean and utility	Total scores, mean and utility
1.	Cable satellite	25 2.5 utilized	24 3.4 utilized	20 2.0 N/ut	28 2.0 N/util
2.	Computer	24 2.4 N/ut	26 3.25 utilized	33 3.3 utilize	36 2.57 util
3.	Display board	19 1.9 N/ut	12 1.5 N/ut	27 2.7 N/ut	30 2.14 N/ut
4.	Internet	16 1.6 N/ut	28 3.5 N/ut	30 3.0 N/ut	35 2.5 N/ut
5.	Opaque projector	10 1.0 N/ut	9 1.13 N/ut	16 1.6 N/ut	17 1.21 N/ut
6.	Overhead projector	28 2.8 N/ut	29 3.63 N/ut	34 3.4 N/ut	39 2.79 N/ut
7.	Public address system	33 3.3 N/ut	30 3.75 N/ut	35 3.5 N/ut	43 3.07 N/ut
8.	Radio cassette recorder	25 3.5 N/ut	20 2.5	29 2.9 N/ut	28 2.0 N/ut
9.	Screen	18 1.8 N/ut	17 2.13 N/ut	28 2.28 Util	24 1.71 N/ut
10.	Slid projector	27 2.7 N/ut	28 3.5 N/ut	27 2.7 N/ut	31 2.21 N/ut
11.	Television	35 3.5 N/ut	12 1.5 N/ut	28 2.8 N/ut	36 2.57 N/ut
12.	Typewriter	27 2.7 N/ut	15 1.88 N/ut	24 2.4 N/ut	14 1.0 N/ut
13.	Video CD	19 1.9 N/ut	18 2.25 N/ut	20 2.0 N/ut	29 2.07 N/ut
14.	Video projector	18 1.8 N/ut	20 2.5 N/ut	26 2.6 N/ut	25 1.79 N/ut

Table 2 covered School of Education made up of six departments. Out of the 14 ICT materials, lecturers in curriculum as well as psychology departments utilized 7 and 4 items respectively in teaching.

Foundations and GSE departments utilized 4 each, while PES and Library departments utilized 6 out of the 14 ICT instructional materials. This falls short of Ekoko (1996) who believe that ICT materials like projectors, chalkboards, tape recorders, etc, have improved the quality of education in many aspects, such as quick understanding and image making to students. Table 3 shows School of Languages which houses six departments. In Arabic and French departments, the mean ratings showed that the lecturers utilized 4 materials each. Lecturers in English departments use only one ICT material.

The fourth table which shows School of Science made up of seven departments indicates that lecturers in Chemistry and Computer Science department utilize 6 ICT materials each. In Mathematics, Integrated Science and Physics departments 4 ICT instructional materials were utilized by the lecturers in each of the departments. Physical and Health Education department used 3, while Biology records 1 material utilized. The utility in School of Science underscores Isoun (2004) who enjoined teachers, especially science teachers, to take up the challenges of integrating ICT into teaching. Table 5 shows the mean ratings of lecturers in School of Vocational and Technical Education. This comprises only three departments. Agric lecturers used 2, while Business Education and Home Economics departments utilized 4 items each.

Research question 2: sought to find out which of the ICT facilities were mostly utilized by the lecturers. A close look at the five tables; from table 6 to 10, shows that item number 7 of all ICT facilities attracted the use of every lecturer as indicated by the mean ratings. The use of public address system cut across the five schools and every department as indicated by the mean ratings of the lecturers. This was in consonance with Isoun (2004) who advised that teachers should take up the challenges of integrating the use of Information and Communication Technology (ICT) into teaching.

Table 7: The mean ratings of lecturers' utility of ICT in instruction in School of Education

S/N		Curriculum total scores means & utility	Foundation total scores means & utility	Psychology total scores means & utility	GSE total scores means & utility	PES total scores means & utility	Library total scores means & utility
1.	Cable satellite	10 2.0 NT	11 2.2 NT	17 1.5 NT	10 2.0 NT	16 2.0 NT	15 30 NT
2.	Computer	14 28 Ut	13 2.6 Util	14 2.8 Util	14 2.8 Ut	26 3.3 Ut	17 3.4 Ut
3.	Display board	17 3.4 Ut	12 2.8 N/U	29 2.6 Util	10 2.0 NT	8 1.0 NT	7 1.4 NT
4.	Internet	18 2.6 Util	13 2.6 Util	29 2.6 util	8 1.6 NT	20 2.5 Ut	16 3.2 Ut
5.	Opaque projector	14 2.8 Util	11 2.2 N/U	18 1.6 N/T	10 2.0 NT	10 1.25 NT	14 2.8 Ut
6.	Overhead projector	17 3.4 util	10 2.0 N/U	20 1.8 N/U	13 2.6 Ut	24 3.0 Ut	16 3.2 Ut
7.	Public address system	18 3.8 Util	9 1.8 N/U	43 3.9 Util	17 3.4 Ut	28 3.12 Ut	17 3.4 Ut
8.	Radio cassette recorder	5 1.0 Util	5 1.0 N/U	17 1.5 N/U	10 2.0 NT	15 1.87 NT	7 1.4 NT
9.	Screen	14 2.8 Util	10 2.0 N/U	17 1.5 N/U	11 2.3 NT	14 1.75 NT	16 3.2 Ut
10.	Slid projector	7 1.4 Util	8 1.6 N/U	35 3.1 Util	14 2.8Ut	18 2.25NT	17 3.4 Ut
11.	Television	4 8.0 Util	5 1.0 N/U	24 2.1 N/U	10 2.0 NT	13 1.6NT	11 2.2 NT
12.	Typewriter	10 3.0 Util	8 1.6 N/U	14 1.3 N/U	7 1.4 NT	10 1.25 NT	10 2.0 NT
13.	Video CD	9 1.8 Util	10 2.0 N/U	16 1.45N/U	6 1.2 NT	25 3.2 Ut	14 2.8 Ut
14.	Video projector	14 2.8 Util	9 1.8 N/U	21 1.9 N/U	9 1.8 NT	19 2.3 NT	9 1.8 NT

Table 8: The mean ratings of lecturers' utility of ICT in instruction in School of Languages

S/N		Arabic total scores means & utility	English total scores means & utility	French total scores means & utility	Hausa total scores means & utility	Igbo total scores means & utility	Yoruba total scores means & utility
1.	Cable satellite	10 1.25 NT	18 1.38NT	11 2.2NT	12 1.5 NT	10 2.0NT	11 2.75Ut
2.	Computer	17 2.13 NT	28 2.15NT	15 3.0Ut	15 1.88NT	14 2.8Ut	13 3.25 UT
3.	Display board	8 1.0NT	13 1.0NT	10 2.0 NT	8 1.0 NT	12 2.4 NT	10 2.5 Ut
4.	Internet	10 1.25 NT	24 1.85NT	11 2.2 NT	20 2.5 NT	9 1.8Ut	8 2.0 NT
5.	Opaque projector	18 2.25 NT	26 2.0NT	12 2.4 NT	15 1.88 NT	13 2.6Ut	12 3.0 Ut
6.	Overhead projector	10 1.25 NT	26 2.0NT	12 2.4 NT	15 1.88 NT	13 2.6 Ut	12 3.0 Ut
7.	Public address system	28 3.5 Ut	41 3.15Ut	16 3.2 NT	26 3.25 NT	14 2.8Ut	14 3.5 Ut
8.	Radio cassette recorder	26 3.25Ut	23 1.76NT	8 1.6 NT	24 3.0 Ut	5 1.0NT	4 1.0NT
9.	Screen	26 3.25 Ut	26 2.0 NT	12 2.2 NT	9 1.13NT	11 2.2NT	8 2.0 NT
10.	Slid projector	14 1.75 NT	25 1.92NT	8 1.6 NT	12 1.5NT	9 1.8 NT	7 1.75NT
11.	Televisio n	29 3.62 Ut	28 2.95 Ut	16 3.2Ut	21 2.62Ut	15 3.0Ut	13 3.25NT
12.	Typewrite r	20 2.5 Ut	28 2.15NT	10 2.0NT	19 2.38NT	7 1.4 NT	8 2.0NT
13.	Video CD	10 1.25 NT	25 1.92NT	10 2.0NT	11 1.38NT	7 1.4NT	8 2.0NT
14.	Video projector	11 1.38NT	21 1.61NT	9 1.8 NT	9 1.3 NT	8 1.6NT	9 2.225NT

Table 9: The mean rating of lecturers' utility of ICT in instruction in School of Science

S/N		Chemistry total scores means & utility	Computer total scores means & utility	Biology total scores means & utility	Int. Science total scores means & utility	Mathematics total scores means & utility	PHE total scores means & utility	Physics total scores means & utility
1.	Cable satellite	12 1.2NT	13 2.16NT	15 1.36NT	12 2.0NT	14 1.75NT	14 2.6Ut	14 2.33NT
2.	Computer	25 2.5Ut	16 2.6Ut	19 1.72NT	16 2.6Ut	18 2.25NT	28 3.1NT	16 2.6Ut
3.	Display board	27 2.7Ut	16 2.6Ut	18 1.63NT	14 2.3NT	8 1.0NT	11 1.83NT	15 2.5Ut
4.	Internet	25 2.5 Ut	15 2.5Ut	21 1.90NT	14 2.3NT	25 3.12Ut	27 3.0NT	6 1.0NT
5.	Opaque projector	10 1.0 NT	11 1.8Nt	14 1.27NT	9 1.5NT	13 1.62NT	10 1.1NT	6 1.0NT
6.	Overhead projector	26 2.6Ut	16 2.6Ut	13 1.18NT	16 2.6Ut	24 3.0Ut	11 1.83 NT	12 2.0NT
7.	Public address system	27 2.7Ut	17 2.8Ut	28 2.50Ut	20 3.3Ut	29 3.62Ut	30 3.33Ut	16 2.66Ut
8.	Radio cassette recorder	10 1.0NT	12 2.0NT	18 1.6NT	7 1.6NT	8 1.0NT	16 1.77NT	6 1.0NT
9.	Screen	15 1.5NT	12 2.0NT	22 2.0NT	6 1.0NT	9 1.13 NT	19 2.11NT	16 2.66Ut
10.	Slid projector	10 1.0NT	15 2.5NT	22 2.4NT	7 1.16NT	25 3.12Ut	19 2.11NT	9 1.5NT
11.	Television	10 1.0NT	8 1.3NT	11 1.0NT	6 1.0NT	11 1.38NT	9 1.0NT	8 1.33
12.	Typewrite r	10 1.0NT	6 1.16NT	19 1.72NT	6 1.0NT	9 1.13NT	9 1.0NT	6 1.0NT
13.	Video CD	13 1.3NT	6 1.16NT	17 1.54NT	8 1.3NT	12 1.5NT	10 1.1NT	12 2.0 NT
14.	Video projector	11 1.1NT	12 2.0NT	12 1.09NT	10 1.66NT	13 1.62NT	13 1.44NT	10 1.66NT

Table 10: The mean ratings of lecturers' utility of ICT in Instruction in School of Vocation and Technical Education

S/N		Agric/Education total scores, Means and utility	Business/ Education total scores, Means and utility	Home/Economic total scores, Means and utility
1.	Cable satellite	14 1.75NT	15 1.88NT	13 1.3NT
2.	Computer	26 3.25NT	27 3.38 Ut	34 3.4NT
3.	Display board	10 1.25NT	11 1.38NT	14 1.4NT
4.	Internet	13 1.63NT	11 1.38NT	12 1.2NT
5.	Opaque projector	8 1.0NT	8 1.0NT	10 1.0NT
6.	Overhead projector	17 2.13NT	14 1.75NT	29 2.0NT
7.	Public address system	29 2.63Utiliz	27 3.38Util	30 3.0Util
8.	Radio cassette recorder	11 1.38NT	14 1.75NT	20 2.0NT
9.	Screen	9 1.13NT	10 1.25NT	21 2.1NT
10.	Slide projector	17 2.13NT	16 2.0NT	19 1.9NT
11.	Television	20 2.5Ut	21 2.63Ut	0 3.0Ut
12.	Typewriter	10 1.25NT	28 3.5Ut	15 1.5NT
13.	Video CD	9 1.13 NT	11 1.38NT	10 1.0NT
14.	Video projector	13 1.63NT	10 1.25NT	14 1.4NT

CONCLUSION

This study investigated the extent lecturers in tertiary institutions, particularly Rivers State University of Education utilize Information and Communication Technology (ICT) facilities in enhancing and facilitating instruction. It was found that the facilities provided mostly suffered disuse as very few of the lecturers utilized them. From the study, it was discovered that majority of the lecturers have no knowledge of most of the Information and Communication Technology facilities. The use of public address system by virtually all the lecturers may have been the result of the population explosion in institutions of higher learning these days. Again, most of the utilized materials are the familiar ones like the computer, Internet, overhead projectors, public address system, display boards and television.

RECOMMENDATIONS

Based on the findings of the study it is recommended that:

- That there should be total retraining of every academic staff in Information and Communication Technology.
- There should be orientation and workshop, organized for some few days to enable some older lecturers share ideas with their newly recruited colleagues.
- There should be an encouragement of lecturers to utilize the provided facilities as they do not only enhance teaching, but bring lessons to the understanding of the students.

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