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**ASSESSMENT OF AVAILABILITY AND UTILIZATION  
OF INFORMATION AND COMMUNICATION  
TECHNOLOGY FACILITIES IN COLLEGES OF  
EDUCATION IN NORTH CENTRAL, NIGERIA**

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**Abstract**

*This study assessed the availability and utilization of Information and communication facilities in Colleges of Education in North Central, Nigeria. The researchers employed a descriptive design using the survey method. Two research questions were formulated to guide the study. The sample for the study consisted of 328 lecturers randomly drawn from the area under study. Questionnaire was used to gathering data for the study. Data collected were analyzed using percentages and mean. Results of the study showed that ICT facilities are not available in Colleges of Education covered. It was also revealed that lecturers do not utilize ICT facilities. Recommendations were then made to the government to provide fund for the purchase of ICT facilities and that lectures should be encouraged to go for further training on the use of ICT facilities*

**Key words:** Availability, Utilization, Information and Communication Technology facilities

Education is the process of learning in order to develop physically, socially, emotionally, intellectually and economically (Akinyele, 1999). An educated person is not only literate but has also developed his or her mental and reasoning powers and is knowledgeable. Thus, the main purpose of education is to draw out all desirable changes in the behaviour of the learners through the growth and development of the physical, mental and spiritual capabilities to enable him/her have a useful, enjoyable and productive life in the society, workplace and home.

The rapid growth in Information Communication and Technology (ICT) has brought remarkable changes in the twenty-first century, different from changes in the society (Tomei, 2005). The researcher opins that ICT is becoming increasingly important in society's daily lives and in educational system. There is therefore, a growing demand on educational institutions to use ICT to teach the skills and knowledge students need for the 21st century. Realizing the effect of ICT in the workplace and in everyday life, today's educational institutions try to restructure their educational curricula and classroom facilities in order to bridge the existing technology gap in teaching and learning. This restructuring process requires effective adoption of technologies into the existing environment in order to provide learners with knowledge of specific subject areas to promote meaningful learning and to enhance professional productivity.

Teaching and learning all over the world today, has gone beyond the teacher standing in-front of a group of learner and disseminating information to them without their adequate participation. With the use of ICT, teachers can take students beyond the traditional classroom limits to ensure their adequate participation in the teaching and learning process and create virtual environment to experiment and explore (Ajayi, 2008). ICT is having a revolutionary impact on educational methodology globally (Ololube, 2006). To this end, Nigeria cannot afford to lag behind in the integration of ICT into her teacher education if the country is to be ICT compliant and one way of achieving this is to provide the enabling environment for ICT based teacher education programmes in all Colleges of Education and Universities.

ICT is associated with the most sophisticated and expensive computer-based technologies, (Kaino, 2007). It also encompasses the more conventional technologies such as radio, television and telephone technology. While definitions of ICT are varied, it might be useful to accept for this study the definition provided by the United Nations Development Programme (UNDP) that ICT is basically information-handling tools – a varied set of goods, application and services that are used to produce, store, process, distribute and exchange information (UNDP, 2006). They include both the 'old' ICT devices such as radio, television and telephone and the 'New' ICT such as computers, satellite wireless technology and internet.

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Although ICT has several definitions depending on the nature of its use, for this study ICT is used as an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems, as well as the various services and applications associated with them, such as videoconferencing and distance learning (Kozma, 2005). The various ICT facilities that can be used by lecturers in the Colleges of Education include radio, television, computers overhead projectors, optical fibres, fax machine, CD Rom, internet, electronic notice board, slides, digital multimedia, video/VCD machine, photocopying machine, scanner, internets etc (Bande, 2006).

In Nigeria, the available infrastructure for ICT in most of the Universities and Colleges of Education are grossly inadequate (Ajayi, 2008). It was observed that most lecturers in the Colleges of Education still visit internet off campus because of too much demand on the internet on-campus (Olaniyi, 2006). Olaniyi (2008) was also of the view that most of the institutions of higher learning in Nigeria have started building their ICT centers but they focus mainly on internet facilities without considering other components that make up ICT centers. However, ICT infrastructure has not been the priority of government. Government policy has been on the deregulation of telecommunication industry. ICT infrastructure are therefore mostly provided by private entrepreneurs for business purposes (Akinsola, Marlien & Jacob, 2005)

Ajayi (2008) opined that many lecturers in the Colleges of Education still rely much on traditional method of teaching. Some of them are fond of using chalk and talk method in their teaching rather than using ICT despite the directive by the National Commission for Colleges of Education that by 2005, all lecturers should be ICT literate (Olumorin, 2008). If there are many lecturers who do not embrace the use of ICT for their teaching, there is high tendency for their students to be denied the opportunities which ICT offers for teaching-learning activities during their training. When such students graduate from the college and become practicing teachers, they may find it difficult to use ICT for their teaching.

The culture of Information and Communication Technology is fast penetrating into all sectors of the economy. This has been made possible by the tremendous improvement the nation has recorded in the provision of ICT resources and infrastructures across the country and teacher training institutions are not left behind (Eya, 2007). However, on the issue of adoption of ICT in Nigeria, it appears according to Nworgu and Ogim (2005)<sup>109</sup> that the education sector is trailing behind other sectors such as the industry, business, aviation, administration. This may be attributed to the fact that substantial numbers of schools still lack ICT resources and infrastructures

while application in our classroom might be attributed to the training received by the teacher during their teacher training.

ICT integration and utilization in the schools represent a new professional role as being a sign of the changes in teaching profession. This role changing embraces various competencies related to technology and their integration into real-life school environments. These technology competencies relating to education, define what a teacher has to know and has to do in order to provide successful education (Yildirim, Kynigos, Potolea, Dumont and Aufenanger, 2003). Perhaps one of the greatest challenges facing teacher education today concerns the preparation of good quality teachers capable of using ICT effectively. Unless and until they are trained and are competent in the use of it, no qualitative changes in teaching should be expected.

Pellegrino and Altman (1997) acknowledged relative inability to effectively utilize powerful ICTs to support learning and teaching. They proposed some factors concerning the responsibilities of the current state of affairs, including the inconsistent and frequently disorganized process by which technology is acquired and implemented in schools. Even though teachers dominantly believe that technology provides advantages for both themselves and students, a major problem is still enduring; teachers' lack of adequate knowledge of how to use technology effectively to support their own teaching and their students' learning (Russell G., Finger & Russell N., 2000; Brush, Glazewski, Rutowski, Berg, Stromfors, Van-Nest., 2003; Ellis, 2003; Nanjappa, 2003; Novick, 2003). To overcome this trouble, teacher training programs that are currently training prospective teachers need to effectively incorporate the use of technology into their own instructional programs. One point needs careful attention that technology is assumed simply to be a tool to encourage the tasks of learning and teaching; it is not an end in itself.

Successful integration of ICT into the school system depends largely on the availability and competence and the attitude of teachers towards the role of modern technologies in teaching and learning. Research works have shown that most Colleges of Education have either insufficient or no ICT tools to cater for the ever increasing population of students in the colleges and where they are available, they are by implication a matter of out of bound to lecturers that are not from the department where the facilities are available (Chattel, 2002; Chang, 2003; Chiemeké 2004).

Fakeye (2010) also investigated English language teachers' knowledge and use of ICT in Ibadan Southwest LGA of Oyo State and found that availability of computers and their connectivity to the internet were non-existent in virtually all the schools studied. Utilization is dependent on availability, and because availability is poor, usability was also found to be poor. He added that those who have computers do not

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use them for teaching but solely for administrative purposes. The researcher attributed the non availability of these facilities as great hindrance to access and inadequate training of teachers on the use and application of computer.

In another study by Okwudishu (2005), he found out that the unavailability of some ICT components in school hampers teachers' use of ICT. Lack of adequate search skills and of access points in the schools were reported as forces inhibiting the use of internet by teachers (Adomi and Kpangban, 2010). And these are pointers towards the kind of training received while in the college.

Ezeoba (2007) carried out an investigation of ICT availability in schools in Onitsha in 100 nursery school teachers which revealed that the media availability average was less than 20% . It also revealed that the degree of utilization in instructional delivery was that teachers used mostly books and over 60% did not use ICT resources at all.

Studies by Chattel, 2002; Chang, 2003; Chiemekwe, 2004 confirmed that ICT facilities are not available for lecturers' use and where they are available, it is a matter of out of bound to lecturers outside the department where such facilities are housed. The lecturers do not use ICT facilities in their teaching and rely much on the traditional method of teaching due to non availability of ICT facilities in teacher training institutions. Most lecturers and student-teachers visit off campus cyber cafe to use ICT facilities (Olaniyi, 2006).

As more ICT facilities are provided in school classrooms, there is need for knowledgeable teachers to use these tools effectively becomes a pressing issue. Getting teachers who know how to integrate effectively use of ICT in their teaching remains a challenging goal for the teaching profession. Teaching with new and emerging ICT is a complex task. Recent frameworks have identified that teaching with ICT is much more than simply using computers for instruction. Effective technology use in the classroom demands an understanding of how ICT tools relate to content and pedagogy. In addition, lecturers need to understand what type of ICT to use, when to use it, how to use it to support learning and where to get them.

This new development is a strong indication that the era of lecturers without ICT skills are gone. Any classroom teacher with adequate and professional skills in ICT utilization will definitely have his students perform better in classroom learning. Teaching and learning have gone beyond the teacher standing in-front of a group of students and disseminating information to them without the students' adequate participation.

### **Statement of Problem**

ICT is now a global phenomenon. It has been embraced all over the world due to its importance. Governments all over the world are harnessing the rich potentials of ICT and are using ICT as a tool for educational development, economic recovery and wealth creation (Okonta, 2002). It is very useful in tackling the ills and problems facing the educational system. Today, no nation can attain its height educationally, economically and socially without ICT. It is however, uncertain whether colleges of education in north central Nigeria have adequate ICT facilities available for lecturers to effectively utilize them to enhance teaching and learning, hence the need for the present study on assessing the availability and utilization of ICT facilities in colleges of education in the North Central part of Nigeria.

### **Purpose of the Study**

1. The study assessed ICT facilities available to lecturers in Colleges of Education in the North Central of Nigeria.
2. The study determined the extent of utilization of ICT facilities for teaching and learning activities by lecturers in Colleges of Education in the North Central of Nigeria.

### **Research Questions**

The following research questions guided the study:

1. What ICT facilities are available to lecturers in Colleges of Education in the North Central of Nigeria?
2. What is the extent of utilization of ICT facilities by lecturers for teaching and learning activities by lecturers in Colleges of Education in the North Central of Nigeria?

### **Methodology**

This research is a descriptive research of the survey type. This is because information and findings obtained from this study will be used to describe other Colleges of Education in Nigeria. In this research, survey method was appropriate because of the size of the population

The target population consisted of all lecturers in the Colleges of Education in North Central of Nigeria. The respondents were 334 lecturers in the 23 colleges of education in north central, Nigeria. The respondents were made up of 207 and 127 male and female lecturers respectively. Random sampling technique was used to select 334 lecturers from the 23 Colleges of Education in the North Central of Nigeria.

The research instrument used for this study was a researcher-designed questionnaire titled "Availability and Utilization of ICT facilities in Colleges of Education (AUICTCOE). The instrument was of two parts. The first part was on ICT

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facilities inventory. It was used to determine ICT facilities available in the Colleges of Education with reference to NCCE (2012) minimum standard and literatures (Bandeled 2006). The second part of the instrument contained items to elicit response from the respondents on the extent of utilization of ICT facilities by lecturers containing 23 items where lecturers were asked to rate their use of the facilities as Frequently, Sometimes, Seldom and Never. Out of the 334 lecturers sampled for this study, 328 returned their questionnaires.

The questionnaire for this study was validated by an expert in Information Technology at the STEP-B project of the Federal College of Education, Zaria and a lecturer in the department of Educational Technology, University of Ilorin, Kwara state for face and content validation. Their comments were effected before the questionnaire was administered. For the reliability of the instrument, the questionnaire was administered to 20 lecturers at the FCT College of Education, Zaria and was re-administered after 3 weeks to the same set of lecturers. Cronbach alpha coefficient was used to test for the reliability and yielded a value of 0.82. The researcher and his research assistant obtained permission from the Provost in the sampled Colleges involved in the research. The questionnaires were administered personally by the researcher and his assistant and they waited to collect completed copies of the questionnaires.

**Data Analysis**

**Research Question 1:** What ICT facilities are available to lecturers in Colleges of Education?

**TABLE 1: ICT Facilities Available to Lecturers in Colleges of Education**

S/N	ICT facilities	Available		Not available		Interpretation.
		Freq.	Percent (%)	Freq.	Percent (%)	
1	Desktop Computer	170	51.8	158	48.2	Generally available
2	Laptop Computers	250	76.1	78	23.9	Generally available
3	Wireless Internet	191	58.2	137	41.8	Generally available
4	Cable Internet	80	24.4	248	75.6	Not available
5	Digital camera	309	94.3	19	5.7	Generally available
6	Scanner	149	45.4	179	54.6	Not available
7	Video equipment	79	24.2	249	75.8	Not available
8	Projector	149	45.4	179	54.6	Not available
9	Educational software	100	30.6	228	69.4	Not available
10	Television set	57	17.3	271	82.7	Not available
11	Interactive boards	62	19.0	266	81.0	Not available
12	Computer printer	215	65.7	113	34.3	Generally available
13	Photocopiers	73	22.2	255	78.8	Not available
14	Virtual library	57	17.3	271	82.7	Not available
15	Electronic bulletin board	62	19.0	266	81.0	Not available
16	Electronic notice board	57	17.5	271	82.5	Not available
17	Radio	241	73.6	87	26.4	Generally available
18	Tape recorder	261	79.6	67	20.4	Generally available
19	Record player	79	24.0	249	76.0	Not available
20	CD player	250	76.1	78	23.9	Generally available
21	Digital video disc player (DVD)	215	65.7	113	34.3	Generally available
22	Fax machine.	62	19.0	266	81.0	Not available
23	Slide projectors	79	24.0	249	76.0	Not available
24	Smart phones	318	96.8	10	3.20	Generally available
25	CD/DVD writers	133	40.7	195	59.3	Not available
26	Palm top	139	42.3	189	57.7	Not available



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Data in Table 1 indicates that the generally available ICT facilities in colleges of education to lecturers include desktop computer, laptop computer, wireless internet, digital camera, computer printer, radio, tape recorder, CD player, digital video disc player, and smart phones. ICT facilities that are either scarce or not available include Cable Internet, Scanner, Video equipment, Projector, Educational software, Television set, Interactive boards, Photocopiers, Virtual library, Electronic bulletin board, Electronic notice board, Record player, Fax machine, Slide projectors, CD/DVD writers and Palm top

Generally, the analysis revealed that 37.04% of the ICT facilities listed are available to lecturers, while 62.96% are not available, implying that ICT facilities are not available in colleges of education in North-central geo-political zone.

**Research Question 2:** What is the extent of utilization of ICT facilities by lecturers for teaching and learning activities in Colleges of Education?

**TABLE: 2: Level of Utilization of ICT Facilities by Colleges of Education lecturers**

S/N	ICT facilities	Frequently		Sometimes		Seldom		Never		Mean
		F	S	F	S	F	S	F	S	
1	Desktop Computer	135	540	121	363	17	34	55	55	3.02
2	Laptop Computers	130	520	126	378	15	30	57	57	3.00
3	Wireless Internet	124	496	191	573	3	6	10	10	3.25
4	Cable Internet	17	68	29	87	138	276	144	144	1.75
5	Digital camera	121	484	103	309	54	108	50	50	2.90
6	Scanner	54	216	21	63	142	284	111	111	2.05
7	Video equipment	4	16	19	57	195	390	110	110	1.75
8	Projector	13	52	29	87	213	426	73	73	1.95
9	Educational software	1	4	5	15	67	134	225	225	1.52
10	Television set	21	84	34	102	211	422	62	62	2.04
11	Interactive boards	11	44	24	72	187	374	106	106	1.82
12	Computer printer	132	528	124	372	30	60	32	32	3.02
13	Photocopiers	12	48	45	135	196	392	75	75	1.98
14	Virtual library	2	8	7	21	272	544	47	47	1.89
15	Electronic bulletin board	1	4	4	12	141	282	182	182	1.46
17	Electronic notice board	3	12	7	21	138	276	180	180	1.49

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<b>18</b>	Radio	129	516	130	390	32	64	37	37	3.07
<b>19</b>	Tape recorder	126	504	131	393	23	46	48	48	3.02
<b>20</b>	Record player	12	48	34	68	251	502	31	31	2.00
<b>21</b>	CD player	128	512	143	429	37	74	20	20	3.16
<b>22</b>	Digital video disc player (DVD)	129	516	139	417	29	58	31	31	3.12
<b>23</b>	Fax machine.	13	52	37	111	151	302	127	127	1.80
<b>24</b>	Slide projectors	11	44	41	123	179	358	97	97	1.90
<b>25</b>	Smart phones	142	568	114	342	39	78	33	33	3.11
<b>26</b>	CD/DVD writers	9	36	17	51	217	434	85	85	1.85
<b>27</b>	Palm top	7	28	21	63	145	290	155	155	1.63

**Scheme for clarification:-** 1.0 – 1.49 = *never*, 1.50 – 2.49 = *seldom*, 2.50 – 3.49 = *sometimes*, 3.50 -4.00 = *frequently*.

Using the above classification scheme, data on Table 2 shows that none of the ICT facilities were frequently used by lecturers. But desktop computer, laptop computer, wireless internet, digital camera, computer printer, radio, tape recorder, CD player, digital video disc player, and smart phones were sometimes used by the lecturers. Cable Internet, Scanner, Video equipment, Projector, Educational software, Television set, Interactive boards, Photocopiers, Virtual library, Record player, Fax machine, Slide projectors, CD/DVD writers and Palm top were seldom used by lecturers while, Electronic bulletin board, Electronic notice board, were never used by lecturers in colleges of education in north central Nigeria.

Generally, from the analysis, it was discovered that 38.45% of the lecturers in colleges of education in the North-central utilized the listed ICT facilities, while 61.55% of the lecturers did not utilize ICT facilities. This may not be unconnected with the fact that utilization is dependent upon availability.

## **Discussion**

Based on the result of this study, the following findings were established: Most of the ICT facilities are not available as revealed in Table 1 in Colleges of Education in North Central, Nigeria. The inventory list of ICT facilities in Table 1 indicates clearly that most of the facilities (62.96%) are not available. The finding buttressed earlier findings of Okwudishu, (2005), Olaniyi, (2006), and Fakeye, (2010) that ICT facilities were not available to lecturers and where they are available; it was a matter of out of bound to lecturers outside the department where such facilities are housed. This non-availability had made it impossible for lecturers to utilize ICT facilities in the teaching learning process. The non availability of these facilities could be as a result of inadequate funding of the colleges by the government. This finding has grave

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consequences on the resourcefulness of the lecturers. Even if these lecturers are willing to use ICT facilities, the non-availability of the facilities will hinder them.

Data on Table 2 equally reveals very low utilization of ICT facilities by Colleges of Education lecturers in north central Nigeria. The findings include that lecturers do not utilize ICT facilities frequently as 61.55% seldom/never use ICT facilities in colleges of education. This calls for serious attention because if the product of Colleges of Education (would be teachers) were to compete with their counterparts from other teacher training institutions outside the county. Since the whole educational system is turning into ICT based system where lecturers have to teach via ICT facilities and student too will have to learn the same medium. The implication of this is that most of the lecturers are still fond of the old traditional method of teaching, the practice which will make them lag behind in the world of ICT.

### **Conclusion and Recommendations**

This study has provided empirical evidence to support the non-availability and utilization of ICT facilities by lecturers in Colleges of Education in North Central, Nigeria. The findings from this study include that most of the listed ICT facilities were not available for the lecturers to utilize and the lecturers do not utilize them. This study therefore recommends that:

- i. government should provide adequate fund for the procurement of ICT facilities through Tertiary Education Trust Fund, National Commission for Colleges of Education and Nigerian Communication Commission to enhance the quality teaching in the Colleges of Education.
- ii. lecturers should have a change of attitude and utilize the available ICT facilities to deliver instruction to students in the teaching learning process.
- iii. lecturers should be encouraged to acquire further professional training on the utilization of ICT facilities in the teaching learning process.
- iv. government should make provision for periodic capacity building for lecturers to update lecturers' knowledge on the utilization of ICT facilities.

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