AN APPRAISAL OF THE ROLE OF INFORMATION AND COMMUNICATION TECHNOLOGY IN TEACHING AND LEARNING PROCESS IN KWARA STATE COLLEGE OF EDUCATION, ILORIN, NIGERIA

BY
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Abstract
This paper appraised the role of ICT in teaching and learning process in Kwara State College of Education, Ilorin. The research design used was descriptive survey. Data was collected through a closed-ended questionnaire from lecturers and students. Data were analysed through frequency and percentage to present the research questions. All hypotheses were tested at 0.05 level of significance using t-test and ANOVA. Findings of the study showed that lecturers and prospective teachers had admitted that they had inadequate competencies in applying ICT to teaching and learning process in addition to other challenges such as unstable power supply and lack of access to adequate ICT facilities in the classrooms where teaching and learning takes place. It was recommended that the college authority should attach computer literacy to admission requirements for prospective entrants (students) and would be lectures before engagement. From the facilities point of view, College management should invest heavily on ICT and multimedia facilities and ensure all classes or location where teaching and learning takes place are adequately equipped to facilitate effective learning. Alternative sources of electric power supply should also be provided to address the prevalent unstable power supply.
Keywords: ***ICT, Teaching, Learning process, College of Education***

Introduction

Globalization and the incorporation of Information and Communication Technology (ICT) in all spheres of life have created a society, which is motivated by knowledge and driven by technology. In recognition of the potentials of ICT, Zurich (2013) observed that Information and Communication Technology (ICT) made teachers' work more sustainable: saving energy and materials resources by creating more value from less physical input, increasing quality of life forever more people without compromising the future generation ability to meet their needs. It is the range of technologies that are applied in the process of collecting, storing, editing, retrieving, and transfer of information in various forms (Olakulehin, 2007). The potentials and role of ICT as a tool for contributing to development is limitless and well established. It is believed that ICT supports the neural system of complex society and can benefit various fields of development (Abobakar, 2010).

Information and Communication Technology (ICT) refers to technological tools and resources which are employed to communicate, create, disseminate and manage information (Nordin, Hamzah, Yunus & Embi, 2010). It is the range of technologies that are applied in the process of collecting, storing, editing, retrieving, and transfer of information in various forms (Olakulehin, 2007). ICT is a computer based tools used by people to work with information and communication processing needs of an organization (Yusuf & Balogun, 2011).

ICT is often perceived as a catalyst for change, change in teaching styles, and change in learning approaches and in access to information (Watson, 2005). The Federal Ministry of Education (2010) defined ICT as encompassing all equipment and tools (inclusive of traditional technologies of radio, video, and television to the newer technologies of computers, hardware, firm-ware and others as well as

the methods, practices, processes, procedures, concepts, and principles that come into play in the conduct of the ICT activities.

Ayannuga (2009) defined ICT as the marriage that exit between computer system and communication which can be described as the use of computer based technology and internet to make information and communication services available to a greater number of users. Uwabueze & Ozioko (2011) defined information and communication technology as a set of tools that helps you work with information and perform tasks related to information process. ICT has improved the value of education by providing access to a great variety of educational resources and by enabling participatory pedagogies. It also improves the management of education through more efficient administrative processes, including human resource management, monitoring and evaluation, and resource sharing (Unwin, 2004). The United Nations Educational, Scientific and Cultural Organization (UNESCO) (2013) stated that ICT can contribute to universal access to education, equity in education, the delivery of quality learning and teaching, teachers professional development, efficient management, governance and administration.

ICT as a tool of development affects every aspect of human activities because ICT is concerned with the knowledge, skills, tools and systems for locating facts, developing ideas, receiving and giving information as well as for modifying communication strategies, ICT increase access to and promote equity in education by providing educational opportunities to a granter number of people of all ages, including the traditionally underserved, for example those in rural and remote areas, women and girls, und persons with disabilities (Unwin, 2004). The Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA) (2005) noted that ICT literacy is the ability of individuals to use Information and Communication Technology appropriately to access, manage, integrate and evaluate information, develop new understandings, and communicates with others in order to participate effectively in society.

Adebayo (2008) asserted that the purposes of teaching in education process is considered vital especially when we consider teaching and learning process as the acquisition of knowledge and skills by individuals to enable him become worthwhile member of the society, Jegede (2008) opined that ICT is now recognized as an crucial ingredient for producing 21st century learning environment but Lau & Sim (2008) reported that despite the specious benefits of the use of ICT for educational purpose, studies showed that in many cases, the learning potential of ICT is deprived as many teachers are still not fully ICT literate. Modern developments in innovative technologies have provided new possibilities to teaching professions, but at the same time have placed more demands on teachers to learn how to use these new technologies in their teaching (Robinson & Latchem, 2003).

Technology for educational purpose will enable students and teachers to build new educational environment by using tools that not only process information but also allow the learner to investigate, manipulate, test and extend knowledge (Njoku, 2011). Basic Technology which was previously known as Introductory Technology was structured to assist learners to develop interest in technology: It is a subject offered in Upper Basic Schools in Nigeria which introduces students to basic rudiment of technology (Nigerian Educational Research and Development Council 2007). It is one of the core subjects to be offered by all students as stated in the curriculum for Upper Basic Schools in Nigeria. Basic Technology is regarded as one of the subjects through which the pivot of significant of all developed nations rotates (Bamiro & Akuru, 2010).

The main objectives of teaching Basic Technology as stated by NERDC (2007) are to inculcate technology literacy, expose students to the world of work to match their talents and inculcate positive attitude towards work as a source of human livelihood and power. Basic Technology which is a core subject of 9-3-4 System of Education in Nigeria today involves the academic and practical study of materials. This subject is expected to sharpen the appetite of learners for skill subject. Basic Technology is also an integrated study of skills subjects such as woodwork, metal work, building technology, auto

mechanic, electrical/electronic, ceramics and technical drawing, you and technology (Olaniyan & Lucas, 2008).

Competency is the capability to apply or use a set of related knowledge, skills, and abilities required to successfully perform critical work functions or tasks in a defined work setting (Dave, Krathwohl & Masia, 2010). Competency serves the basis for skill standards that specify the level of knowledge, skills, and abilities: required for success in the workplace as well as potential measurement criteria for 15 a set of attributes covering knowledge, skills and attitude for enabling one to effectively perform the activities of is given occupation cir function to the standard expected in employment (Majumdar, 2005).

Yusuf (2005) asserted that teachers' competence is of concern when new subjects or media are integrated into the school system. This is because teachers covering knowledge, abilities and attitudes for aiding one to effectively achieve the capability und competence will form the root of their ability to implement the innovation in schools, UNESCO (2005) defines competency as a set of qualities activities of a given career or function to the morals anticipated in employment. The idea of competence with regard to the use of ICT in education is broader than the technical skills needed to use ICT. The type of ICT competence needed by teachers is a collection of knowledge, skills and attitudes that are inseparably bound up with the framework and pedagogy Competence needs to be entrenched in teacher practices. A number of countries have established national or regional ICT competency ethics including Australia, Canada, Peoples' Republic of China, India, New Zealand, United Kingdom and the United States. Competency ethics, therefore, are often closely tied to local ethics for students, so that expected student outcome in a particular field of study implies a set of competencies with ICT that their teachers should possess (UNESCO, 2005).

The Federal Government of Nigeria recognize the role being played by ICT in education and also acknowledges the problems hindering its effective use in education as the Nigerian Minister of Education stated that the present state of ICT in education must be remedied (Rufa'i, 2013).

Statement of the Problem

The use of technology is an opening of worlds through the increase of access students have to a world database of knowledge. Not taking advantage of educational technology is foolhardy. The goal of any educational institutions is to graduate well-rounded individuals who can take on the challenges of the world they enter and remain future ready. To enable this, we must take teaching learning process to comply with the emerging technological trend. In this research, an attempt in made to appraise the role of ICT on teaching learning process in Colleges of Education in Kwara State with a view to improving on the current situation.

Purpose of the Study

The specific purpose of the study are to:

i. Examine ICT competency level of students and lecturers in Kwara State College of Education, Ilorin
ii. Determine the role of ICT on teaching and learning process in Kwara State College of Education based on lecturers' Status.
iii. Asses the role of ICT on texting and learning process in Kwara State College of Education based on lecturers Gender.
iv. Determine the role of ICT on teaching and learning process in Kwara State College of Education based on Students Level.
v. Determine the role of ICT on fencing and learning process in Kwara State College of Education based on Students Gender.

Research Questions

The following research questions were raised and answered in the study:

1. What is ICT competency level of lecturers and students in Kwara State College of Education, Ilorin?
2. What is the role of ICT on teaching and learning process in Kwara State College of Education based on lecturers' status?
3. What in the role of ICT on teaching and learning process in Kwara State College of Education based on lecturers' gender?
4. What is the role of ICT on teaching and learning process in Kwara State College of Education based on students' level?
5. What is the role of ICT on teaching and learning process in Kwara State College of Education based on students' gender?

Research Hypotheses

The following research hypotheses were formulated and tested in this study:

Ho_1: There is no significant difference on the role of ICT on teaching and beaming process in Kwara State College of Education based on lecturers' Status.

Ho_2: There is no significant difference on the role of ICT on teaching and learning process in Kwara State College of Education based on lecturers' gender.

Ho_3: There is no significant difference on the role of ICT on teaching and learning process in Kwara State College of Education based on students' level.

Ho_4: There is no significant difference on the role of ICT on teaching and learning process in Kwara State College of Education baked on students' gender.

Methodology

This is a descriptive study of the survey type. The method was used to allow the researcher to have a vivid description of the topic for the purpose of making generalization**.** The target population for this study was Technology teachers in Kwara State. One hundred (100) teachers were randomly selected from public and private schools in Ilorin metropolis giving male and female equal opportunities to fill the designed questionnaire. A structured questionnaire tagged "Role of ICT in Teaching and Learning Process Questionnaire" (RICTILPO) was used to gather data on the study. The instrument consists of two sections - A and B Section 'A' requested the respondents' demographic information like work status, gender of lecturers, level and gender of students. The section 'B' contains the items developed under each research questions raised in the study. Research question one was a close ended one which restricts the respondents to respond on four point scale which ranges from Highly Competent (HC) 4 points, Competent (C) 3 points, Basic Knowledge (BK) 3 points, and Not Competent (NC) 1 point, to test the teachers and students level of ICT competence. Research Question Two uses the scale more often, Often, Seldom and Never to determine the level of ICT use as well as the challenges faced by teachers in the Like of ICT. The questionnaire was validated by three lecturers in the Department of Educational Management and Counselling. Al-Hikmah University, Ilorin, including the researcher's supervisor to make sure that the items in the questionnaire measure what it is supposed to measure in relation to the research objectives and ambiguous items reviewed and removed.

The school management was notified with an attestation letter from the researcher's Department to seek permission. The administration was done personally by the researcher to the selected schools during the free period of the teachers. Data collected on the study was analyzed using frequency and percentage to present the demographic information of the respondents and responses to the research questions. Inferential statistics of t-lest was used to test hypotheses two and four while ANOVA was used to test hypotheses one and three formulated in the study at 0.05 level of significance.

Results

Table 1a: ICT Competency Level of Students

S/N	Items	HC	C	BK	NC
1.	I am capable of connecting the computer system and its peripherals	37(10.25%)	27(7.48%)	108(29.93%)	189(52.30%)
2.	I can use projector, interactive board, video camera, audio tape in teaching my students	35(970%)	26(7.20%)	106(29.3%)	294(53.73%)
3.	I can use Microsoft office suit application i.e. MSWord, MS Excel, MS Power Point to do my assignment	36(9.97%)	23(6.37%)	105(29.09%)	197(54.57%)
4.	I can design graphics with graphics design application e.g. CorelDraw, MS Publisher, Instant Artist	25(6.93%)	30(14.68%)	137(31.86%)	169(42.11%)
5.	I use internet and e-mail services to send my assignment to the lecturers	41(11.36%)	53(14.6%)	115(31.86%)	152(42.11%)

Table 1b: ICT Competence Level of Lecturers

S/N	Items	HC	C	BK	NC
1.	I am capable of connecting the computer system and its peripherals	15(12.20%)	11(8.94%)	38(30.89%)	59(47.97%)
2.	I can use projector, interactive board, video camera, audio tape in teaching my students	9(7.32%)	13(10.57%)	38(30.89%)	63(51.21%)
3.	I can use Microsoft office suit application i.e. MSWord, MS Excel, MS Power Point to do my assignment	11(8.94%)	14(11.38%)	33(26.83%)	65(52.85%)
4.	I can design graphics with graphics design application e.g. CorelDraw, MS Publisher, Instant Artist	12(9.76%)	15(12.20%)	41(33.33%)	55(44.72%)
5.	I use internet and e-mail services to send my assignment to the lecturers	15(12.20%)	17(13.82%)	39(31.71%)	52(42.28%)

The result in table 1 and 6 are on ICT competencies of lectures and students respectively. Result showed that the respondents indicated below average competency in all tasks in items 1 to 5.

Hypotheses Testing

The research hypotheses formulated in the study were analyzed using t-test and Analysis of Variance (ANOVA).

Table 2: Role of ICT based on lecturers' status

Variable	Sum of Squares	Df	Mean Square	F	Sig.	Decision
Between Groups	157.720	27	5.841	61.470	.000	Rejected
Within Groups	9.028	95	.095			
Total	**166.748**	**122**				

Table 2 shows the result of the hypothesis test using ANOVA. The result indicate that F(27, 95) = 61.470, p = .000 < alpha level of significance. The hypothesis which states that there is no significance difference in the role of ICT on teaching and learning process based on lecturers status. Since the hypothesis result was less than 0.05, therefore, the null hypothesis was rejected.

Table 3: Role of ICT based on lecturers' gender

Variable	N	Man	SD	t-value	p-table	Decision
Male	80	23.55	9.62	9.904	.000	Significant
Female	43	9.00	0.00			

Set p-value = 0.05

Table 3 shows the result of the hypothesis using t-test. It can be deduced that there is no significant difference on the role of ICT on teaching and learning based on lecturers gender. This is reflected in the result of the t-value of 9.904d resulting in .000 significance value was less than 5% alpha value. Therefore, the hypothesis was rejected. This indicates that there was no significant difference between male and female lecturers on the role of ICT on teaching and learning process.

Table 4: Role of ICT based on students level

Variable	Sum of Squares	Df	Mean Square	F	Sig.	Decision
Between Groups	211.001	29	7.276	80.289	.000	Rejected
Within Groups	29.996	331	.091			
Total	**240.997**	**361**				

Table 4 shows the result of the hypothesis test using ANOVA. The result indicate that F(29, 331)d – 80.289, p = .000 < alpha level of significance. The hypothesis which states that there is no significance difference in the role of ICT on teaching and learning process based on students level. Since the hypothesis result was less than 0.05, therefore, the null hypothesis was rejected.

Table 5: Role of ICT based on students' gender

Variable	N	Man	SD	t-value	p-table	Decision
Male	148	24.53	6.996	25.924	.000	Significant
Female	213	11.23	2.744			

Table 5 shows the result of the hypothesis using t-test. It can be deduced that there is no significant difference on the role of ICT on teaching and learning process based on students gender. This is reflected in the result of the value of 25.924 resulting in .00 significance value was less than 5% alpha value. Therefore, the hypothesis was rejected. This indicates that there was no significant difference between male and female lecturers on the role of ICT on teaching and learning process.

Discussion of Findings

The findings of this research revealed both lecturers and students are not competent in the use of ICT for teaching. This is in line with the report of Kirschner and Selinger (2003) that the vast majority of teachers do not know how to use the computers to promote educational efficiency, and they are not adequately

trained to modem information media. It also confirms the assertion that teachers have not developed competencies in the use of ICT, thus they cannot model good use of technology.

The results of this study also show that ICT use by lectures is not status relevant as confirmed by Niederhauser (2001), he opined that experience in teaching did not influence teachers use of computer technology in teaching as confirmed through hypothesis 2 which state that there is no significant difference in the role of ICT on teaching and learning process based on status.

The second hypothesis shows that there is no significant difference on the role of ICT on teaching and learning process based on lecturer's gender. This finding is in consonance with Norris (2003) which reported that gender variable was not a predictor of ICT integration in to teaching.

The findings in addition indicated some challenges faced in the effective utilization of ICT in teaching-learning process. These harriers as attested to by the teachers included shortage of computers and other ICT tools in schools, epileptic electric power supply, lack of suitable educational software, among others.

Conclusion

In conclusion, we can state that ICT helps in the professional development of leaching and learning and individuals involved in the programmes of teacher education. It can be infused in the learning process to acquire the knowledge and skill efficiently. ICT provides access to resources so that teachers can apply new knowledge and skills they have learnt Communication technology will be able to develop the capacity of teacher and teacher education and at same time, strengthen the capacity of teacher educator, which is the fundamental requirement of effective transactional strategy.

However, this study has found that both lecturers and student of Kwa State College of Education, Ilorin, and attest to not having adequate competencies in ICT tools for effective application of same in to the teaching and learning process. Also discovered are challenges of inadequate facilities, trained technical support staff and lack of stable electric power supply that hinders effective application of ICT in the classroom.

Recommendations

Based on the findings of the study, the following recommendations are made:

i. As the application of ICT into the teaching and learning process in essential for the enhancement of students learning, so the policy makers and college authorities should give priority to ICT inclusion in teaching learning process at College of Educations.
ii. Prospective lecturers should be provided with facilities like computers/laptops with high speed or uninterrupted internet connection.
iii. The authorities of Colleges of Education should organized training workshops related to use of hardware, software and website for trainee teachers in order to enhance their proficiency in the application of ICT in the teaching process.
iv. Summer classes should be introduced before the start of every new academic session at College of Education. Basic computer related subjects should be taught for improving the efficiency of prospective students in computer application
v. ICT knowledge should be mandatory for the appointment of lecturers.
vi. College authorities should invest heavily on ICT facilities for educational purpose

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