

**UTILIZATION OF INFORMATION AND COMMUNICATION FOR TEACHING
AND LEARNING OF POSTGRADUATE STUDENTS OF FACULTY OF
EDUCATION,
NNAMDI AZIKIWE UNIVERSITY, AWKA**

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Abstract

This chapter focused on the extent of utilization of information and communication for teaching and learning of postgraduate students of Faculty of Education, Nnamdi Azikiwe University, Awka. Two research questions guided the study. Survey research design was used for the study. A sample of 100 postgraduate students was drawn through simple random sampling technique. Questionnaire was used for data collection. Data collected were analyzed using percentage, weighed mean and standard deviation. The findings of the study revealed that some of the ICTs were available but not utilized. Based on the findings, the study recommends among others, government's encouragement and provision of ICTs and ICT enabling environment to promote postgraduate education and studies.

Keywords: Teaching and learning, information and communication technology.

Introduction

Education is power for it begets knowledge. This is why many strive to acquire it. Learners, especially post graduate students, learn for self-development and allround wellbeing. This learning can be integrated through teaching with ICTs to accelerate the acquisition of knowledge and skills that will engender desired change (Ugwoegbu, 2015). Furthermore, Ezugwu (2011) has maintained that the concept of teaching and learning has defied all known universal definition because different people attempt to define the word base on the school of thought they belong to. However, in all the definitions, one common feature is prominent i.e. that teaching is basically an intent to bring about learning that will promote behavioral change in the learner. Teaching and Learning refers to concerted activity that increases the capacity and willingness of students to acquire and productively apply new knowledge and skills to grow, mature and to adapt successfully to changes and challenges (Warschaure, 1996). Therefore, every teaching and

learning process has expected outcome which is observable change in the learner that can be inferred. Teaching is becoming one of the most challenging professions in our society and today knowledge is expanding so rapidly that the trend demands for use of Information Communication Technology (ICT).

ICT has become within a short time one of the basic building blocks of a modern society. Many countries now regard understanding ICT and mastering its basic concepts as part of the core of education. (UNESCO, 2002b). According to Onwubiko (2011) information and communication technology is any technology that is used in producing, organizing and for distributing information. It is a broad-based concept that encompasses the gathering (acquisition) organization (packaging), storage and retrieval for disseminating information that can be in the textual or numeric (books and documents), pictorial and vocal forms (audio-visual) using the combination of all the above (multimedia) including computers and telecommunication facilities. Okoro (2008) explained that ICT is a means of accessing or receiving, storing, transferring, processing and sending ideas, perception or information through computer and other communication facilities. ICT is the set of activities which facilitate by electronic means the processing, transmission and display of information. ICTs Refer to technologies people use to share, distribute, gather information and to communicate through computers and computers network. ICT tools include computers/ laptops, video machines, multimedia projectors or power points, digital cameras, internet facilities, computer network, telephone (GSM and land phones), e-library, television, data base among others (World Bank, 2003; Akuegwu, Ntukidem & Jaga, 2011)

The need for the development of information and communication technology (ICT) is a global resolution and has been a subject of great significance to all mankind. It is now the centre of action and reaction in communicating from one place to the other. These technologies have become more central to contemporary societies. The prevalence and rapid development of ICT has transformed the human society from the knowledge age to the information age (Galbreath as cited in Ugwoegbu, 2015). Observers and proponent of ICT suggest that our use of increasingly sophisticated and enabling technologies will continue, to the extent that technological literacy will become a basic functional requirement for our work, social and personal lives. ICT has the potential to revolutionize education and improving teaching and learning as it has changed the medical, financial, manufacturing and other sectors in the society.

It is perhaps this reason that the United Nations Development Programme (UNDP) as cited by Minsha-Majanja (2007) refers to ICT as a “powerful enabler of development” because of its significant impact on the economic, scientific, academic, social, political, cultural and other aspects of life. Rapid developments in information and communication technologies (ICTs) when ushered in the 21st century have resulted in the prediction and use of multimedia devices that are continually changing the activities in the society. According to Akudolu (2012), over the years; educationists viewed knowledge to be acquired within geographical delineated areas called schools and teachers were viewed as custodians, the distribution of knowledge and learning was seen as teacher oriented in such delineated areas. One phenomenon that is engineering a shift from this understanding of the nature of learning and learning process is e-learning. Learning process or mode is globally viewed as the major channel for equipping learners with knowledge and skills necessary for effective life in technology dominated society. Akudolu(2012), states that every nation is striving to ensure that her citizens become digital literates within a given space of time. According to UNESCO Bangkok reports (2004), information and communication technology tools have helped to improve greater autonomy in learning, stimulate sensory and cognitive curiosity, develop life skills, boost self confidence among adults and facilitate learning of obsolete and abstract ideas.

Information and communication technologies in education help the learners to conveniently learn at their own pace and right time with or without the presence of a facilitator. It creates ways for students to learn faster at their own convenience (Ugwoegbu, 2015). The use of information and communication technology in schools is taken very seriously by governments and educational systems around the world. As educational systems move towards the mainstream use of ICT in teaching and learning there appear to be more critical steps and vital ingredients needed for the successful infusion of ICT into educational environments. Although stand-alone computers have been in most schools for more than two decades now, networked ICT is relatively new for many schools as they continue to grapple with how to use ICT to enhance teaching and learning environments.

The relevance of ICT in teaching and learning process cannot be overrated. According to Ajayi (2008) teaching and learning have gone beyond the teacher standing in front of a group of learners and disseminating information to them without the students’ adequate participation. Ajayi reiterated that with the aid of ICT, the teacher can take students beyond traditional limits, ensure their adequate participation in teaching and learning process and create vital environments to experiment and explore. This new development

is a strong indication that the era of teachers without ICT skills is gone. Any teacher with the adequate professional skills in ICT utilization will definitely have his students perform better in classroom learning. Moore (2005) summarized about the impact of ICT on learners such as increased student's motivation to stay on-task and drive them to behave better and produce high quality work. Besides, through ICT, students learnt more independently and did more work at a fast pace. ICT can assist in the organization and the structure of courses and course materials thereby promoting rethinking and revision of curriculum and instructional strategies. (Egomo, Enyi & Tah, 2012).

Information and communication technology are already a vital factor in successful development of education. Education for emerging societies requires ICT to facilitate more meaningful learning. ICT dexterities constitute a major part of educational program in Nigeria; nearly all universities are equipped with the infrastructure to conduct ICT mediated teaching and learning. The main goal of the Federal Ministry of Education in implementing ICT in educational system is to position ICTs as teaching and learning tools, to increase the productivity, efficiency and effectiveness of the school system. The developed world use ICTs extensively to acquire, produce and disseminate information more than their counterparts in developing countries.

Nnamdi Azikiwe University, Awka, Anambra state, have long realized the importance of ICT, particularly the internet for information access to improve their learning process, but despite the roles ICTs play in personal, community and national development, as well as teaching and learning, there is no evidence to show that postgraduate students of the Faculty of Education, Nnamdi Azikiwe University, Awka have knowledge and skills for utilization of ICTs. One wonders whether the government really has any provision for use of ICTs in the university or whether the available ICTs are frequently used by the learners.

It is therefore, the utmost concern of this study to look into the extent of utilization of information and communication technologies (ICTs) for teaching and learning for postgraduate students in the faculty of education, Nnamdi Azikiwe University, Awka. Anambra state, Nigeria.

Challenges Facing the Utilization of ICTs by Postgraduate Students

While ICTs continue to advance in western and Asian countries, African countries like Nigeria still experience a lag in its implementation and utilization especially by postgraduate students, and that continues to widen the digital and knowledge divides. In

a recent study by Ugwoegbu (2015), he observed that access to ICT facilities is a major challenge facing most African countries, with a ratio of one computer to 150 students as against the ratio of 1:15 students in the developed countries.

Whereas results indicate that ICT has penetrated many sectors, including banking, transportation, communications and medical services, the educational system seems to lag behind. Some of these challenges facing the utilization of ICT in teaching and learning are;

- Lack of computers; computers are still very expensive and despite spirited efforts by some government agencies, NGOs, corporate organizations and individuals to donate computers to as many schools as possible, there still remains a big percentage of adult literacy centers unable to purchase computers for use by their adult learners.
- Lack of electricity; many schools and institutions are still not yet connected to electricity; being a developing country, Nigerian government have not been able to connect all parts of the country to the national electricity grid. Consequently, those schools and institutions that fall under such areas are left handicapped and may not be able to offer computer studies.
- Cost constraints; computers are still very expensive in Africa, in a country with a GDP of \$1600, majority of the individuals cannot afford to buy a computer and consider it luxurious, more expensive than a television. While second hand computers cost as little as #15,000, and brand new computers cost being sold at #80,000 or higher.

According to the National center for Adult literacy (2014), technology has not been exploited and utilized because;

- I. Much of the software lack creativity
- II. Products were geared towards children instead of adults
- III. Functional literacy providers have sufficient technology for broad sustained use.
- IV. Staff and volunteers had limited knowledge and training in the use of technology as a teaching tool.
- V. Consumer electronics and broadcast technologies were surprisingly under-used in education.
- VI. Lack of funds
- VII. Lack of initiative by community leaders
- VIII. Lack of internet and slow connectivity
- IX. Fear by facilitators
- X. Fear by administrators

- XI. Increased moral degradation
- XII. Lack of government support.

2.2 Strategies to facilitate the utilization of ICTs by Postgraduate Students

To ensure that students utilize ICTs maximally, the following are recommended by Ogbomo (2008);

- Efforts should be made to educate the learners, teaching them about government policies and facilities as well as skills in the use of ICTs.
- In order to enhance access to information by postgraduates, the government should provide and maintain communication support and infrastructures.
- Computers and other ICTs should be used in programmes for the postgraduates.

This study posits therefore, that;

- i. The board of school of postgraduate studies should target and integrate ICT into a curriculum with an account of economic, cultural, political, social, educational and catalytic rationales. In a nutshell, they should;
 - Prepare ICT master plan development
 - Develop ICT networks in faculties and departments
 - Develop broad ICT integrated curriculum at all levels of postgraduate education and learning
 - Encourage and pave path for students to participate in global ICT issues.
 - Campaign a public awareness to have high level of individual involvement.
- ii. **Collaboration;** The University communities should work abreast with the ministry of education in order to locate ICT availability and ensure its utilization accordingly. They should also provide professional development and understand the inhibiting factors of ICT integration and utilization.
- iii. **A shift from conservatism to constructivism;** Application of ICT into education has unquestionable importance to the enhancement of productivity, quality education and new skill. Therefore, the Faculty of Education should be competent enough to enhance the transmission of information with new skills to their beneficial. They should change the role of the teachers/lecturers from traditional to constructivism approach, and should promote high monitoring, evaluation and new planning approach.
- iv. **Even distribution of National resources;** Generally speaking, African countries have plenty of natural resources, but it still remained unused or exploited wrongly by poor leadership. The challenge is high indeed; however, the opportunity is much higher. As poverty is limiting the effective utilization of ICT, the governments should strive to exploit and evenly distribute the natural resources wisely.

- v. **Improvement of Facilitator's welfare;** Facilitators and teachers are the change agents, explorers of instruction and key ICT integrators. Therefore, their welfare and morale should be improved in order to bring commitment and stop brain drain towards western countries. They should also ask themselves the following probing questions as a way of ICT incorporation;
- What is learned and how its transmitted
 - When and where ICT is important
 - Who is learning and teaching/facilitating
 - What good practices exist and how they are used to move forward.

Objectives of the study

The broad objective of the study is to determine the extent of utilization if information and communication technologies for teaching and learning of postgraduate students in the Faculty of Education, Nnamdi Azikiwe University, Awka. However, the study specifically seeks to find out the;

- i. The available ICTs for utilization in teaching and learning of postgraduate students in the Faculty of Education.
- ii. Extent to which the available ICTs are utilized for teaching and learning of postgraduate students in the Faculty of Education.

Research Questions

- a. What are the available ICTs for utilization in teaching and learning of Advanced Educational Research in the faculty of Education?
- b. To what extent are the available ICTs utilized for teaching and learning of Advanced Educational Research in the faculty of Education?

Methodology

The study adopted a survey research design. The population is comprised of 200 postgraduate students in the Faculty of Education out of which 50 respondents were drawn using simple random sampling technique. Self-designed questionnaire which contained question items that provided answers to the research questions using a four point Likert scale measure was used for data collection. The instrument was self-administered to the respondents in their classroom. A pilot study was conducted to show the reliability of the instrument and a Cronbach's Alpha value of 0.688 was derived. Hence, the reliability level of the instrument was high.

Results and Findings

The result section presents the demographic data of the respondents and the descriptive statistical measure of the variables.

Table 1: Frequency distribution of respondents by sex;

S/no.	Sex	No of Respondents	Percentages (%)
1.	Females	26	52%
2.	Males	24	48%
Total		50	100%

The result in table 1 above shows that 26 (52%) of the respondents were females, while 24 (48%) of the respondents were males. It therefore revealed that greater percentage of the respondents were females.

Table 2: Frequency distribution of respondents by age;

S/no.	Age range	No of Respondents	Percentage (%)
1.	18-25	7	14%
2.	26-35	24	48%
3.	36-45	16	32%
4.	46 and above	3	6%
Total		50	100%

Table 2 above shows that 7 (14%) of the respondents fall within the age bracket of 18-25 years, 24 (48%) of the respondents fall within 26-35 years, 16 (32%) fall within 36-45 years while 3 (6%) fall within 46 years and above. This revealed that greater number of the respondents fall within the age range of 26-35 years.

Table 3: Frequency distribution of Respondents by marital status

S/no.	Marital status	No of Respondents	Percentage
1.	Single	28	56%
2.	Married	18	36%
3.	Divorced	3	16%

4.	Widowed	1	2%
Total		50	100%

The result in table 3 above shows that 28 (56%) of the respondents were single, 18 (36%) were married, 3 (6%) were divorced while 1 (2%) was widowed. This shows therefore, that majority of the respondents were single.

Question 1; what are the available ICTs for utilization in teaching and learning of postgraduate students in the faculty of Education?

Table 4; percentage responses of the respondents on the available ICTs for utilization in teaching and learning of postgraduate students in the faculty of Education.

S/NO	The available ICTs for utilization in teaching and learning of postgraduate students in the faculty of Education.	Responses				
		A	%A	NA	%NA	Remarks
a.	Computers (laptop or desktop)	38	76%	12	24%	Available
b.	Internet facilities (Wi-Fi Network, Etc.)	43	86%	7	14%	Available
c.	Power point slides	40	80%	10	20%	Available
d.	Mobile phones	48	96%	2	4%	Available
e.	Resource personnel	11	22%	39	78%	Not Available
f.	Social media chat room (WhatsApp, facebook)	48	96%	2	4%	Available
g.	Power supply	8	16%	42	84%	Not Available
h.	Web Conferencing	1	2%	49	98%	Not Available
i.	SPSS	34	68%	16	32%	Available
j.	Power point projector	40	80%	10	20%	Available
k.	e-Library facilities	46	92%	4	8%	Available

Table 4 above shows that the following items; a, b, c, d, f, i, j with percentages of (76%), (86%), (80%), (80%), (96%), (68%) and (86%) respectively were agreed because they

were more than 50% average percentage. While items; e.g. 'h' with percentages of (22%), (16%) and (2%) were disagreed because they were less than 50% average percentage. Therefore, computers (laptop or desktop), internet facilities (wi-fi networks, etc.), power point slide and projector, mobile phones, SPSS and e-library facilities are available, while resource personnel, power supply and web conferencing are not available.

Question 2: To what extent are the available ICTs utilized for teaching and learning of postgraduate students in the faculty of Education?

Table 5; mean responses of the respondents on the extent of utilization of available ICTs for teaching and learning of postgraduate students in the faculty of Education.

Table 5 above illustrates that items a, b, d, e, f, g, h, i and k were disagreed because they were not up to the criterion mean of 2.5, while items c and j were agreed because they

S/N	The extent of utilization of available ICTs for teaching and learning of postgraduate students in the faculty of Education.	Responses							
		4 VHE	3 HE	2 LE	1 VLE	TOT AL	MEA N	SD	DECISIO N
a.	Computers (laptop or desktop)	4 16	2 6	24 48	20 20	90	1.8	0.86	Disagreed
b.	Internet facilities (Wi-Fi Network, Etc.)	3 12	5 15	22 44	20 20	91	1.82	0.85	Disagreed
c.	Power point slides	15 60	20 60	10 20	5 5	145	2.9	0.77	Agreed
d.	Mobile phones	4 16	10 30	10 20	26 26	92	1.84	0.85	Disagreed
e.	Resource personnel	6 24	6 18	10 20	28 28	90	1.8	0.86	Disagreed
f.	Social media chat room (WhatsApp, Facebook,)	5 20	13 39	10 20	22 22	101	2.02	0.84	Disagreed
g.	Power supply	7 28	8 24	15 30	20 20	102	2.04	0.84	Disagreed
h.	Web Conferencing	2 8	2 6	6 12	40 40	66	1.32	0.89	Disagreed
i.	SPSS	3	2	11	34				

		12	6	22	34	74	1.48	0.88	Disagreed
j.	Power point projector	15	20	10	5				
		60	60	20	5	145	2.9	0.77	Agreed
k.	e- Library facilities	2	6	14	28				
		8	18	28	28	82	1.64	0.87	Disagreed
	Grand mean						1.96	0.84	

were more than the criterion mean of 2.5. This shows that most of the ICTs were not utilized while only power point slide and projector were utilized.

Discussion of Results

The findings of the study in research question one shows that computers (laptop or desktop), internet facilities (wi-fi networks, etc.), power point slide and projector, mobile phones, SPSS and e-library facilities were available, while resource personnel, power supply and web conferencing were not available. This is in line with the observation of the Economic Commission for Africa (2003) that Nigeria has been less active in embracing ICT for social and economic development through education, even though it is dubbed by many as the potential powerhouse of the information society and of internet growth in Africa.

The finding in research question two shows that most of the ICTs were not utilized while only power point slide and projector were utilized. This is in agreement with the view of the National Center for Adult literacy (1999) that technology has not been exploited and utilized because of the cost and other constraints and limitations, and so Ogbomo (2008) recommends that efforts should be made to provide ICTs for the students, educate them about government policies and facilities as well as skills in the use of ICTs and in order to enhance access to information by learners, the government should provide and maintain communication support infrastructure.

Conclusion

Information and communication technologies have helped to improve greater autonomy in learning, stimulate student's sensory and cognitive curiosity, develop life skills, boost self-confidence and facilitate learning of abstract ideas and theory. ICTs are therefore, very important to the development, improvement and promotion of teaching and learning of postgraduate students, and necessary facilities should be put in place to make ICTs to be utilized to its fullest such as reducing cost, providing access to the internet, training of instructors and learners on the use of ICTs, improvement of power supply,

etc. In order to bridge digital divide, there is need to introduce and integrate ICT at different levels of education including the postgraduate studies. Effective integration of ICTs into educational system is a complex multifaceted process that needs to be recognized and paid attention to.

Recommendations

Based on the findings of the study, the following recommendations were made;

1. The government should encourage, support, and provide communication infrastructures and ICT enabling environment to promote teaching and learning of postgraduate students.
2. Government through the university management should provide ICTs in all faculties and departments and encourage postgraduate students to participate in global ICT issues for personal and societal development.
3. The issue of power supply should be addressed by the government to ensure effective utilization of ICTs.
4. The federal government should provide free internet (Wi-Fi) for students.
5. ICT instructors should be made available to all faculties in the various Nigerian Universities.

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