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Role of Information and Communication Technology (ICT) in Enhancing Teaching and Learning Adult and Non-Formal Education

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Abstract
The paper discussed the use of Information and Communication Technology (ICT) as a means of teaching and learning Adult and Formal Education in Federal College of Education (Technical), Omoku. ICT is an emerging tool with great potential in achieving social, economic, educational, scientific, and technological development (Adedeji, 2010). The purpose of this paper is to ascertain how ICT has helped both the teacher to teach better and learner to learn faster and better. Three research questions were articulated. A 14-item questionnaire known as Information and Communication Technology Questionnaire (ICTQ) was used for data collection. The population of the study consists of 42 staff and students of the Department of Adult and Non-Formal Education in Federal College of Education (Technical), Omoku. The data collected were presented in tables and analyzed using mean statistics. The findings reveal that ICT gadgets are not available in teaching and learning Adult and Non-Formal Education; ICT facilitate the process of teaching and learning Adult and Non-Formal Education. It further reveals that ICT gadgets have a general positive effect in teaching and learning Adult and Non-Formal Education. Based on the findings, the researchers recommend that Management of Federal College of Education (Technical) should make provision for Information and Communication Technology gadgets for teaching and learning. The researchers conclude by stating that ICT gadgets are indispensable instruments in efficient and effective teaching and learning in contemporary world.

Keywords: *Information and Communication Technology (ICT), Teaching and Learning.*

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Background to the Study

Information and Communication Technology (ICT) are integral part of human society. In the past few decades ICT has provided societies with a vast array of new communication capabilities. For instance, people can communicate in real-time with others in different countries using technologies such as instant messaging and video-conferencing. The world today has been transformed into a global village (Onyejekwe, 2006). Traditional methods of education are no longer able to meet the needs of today's learners (Ebrahimi, 2009). Ali, Haolader and Muhammad (2013) argued that traditional educational environments do not seem to be suitable for preparing learners to function or be productive in the workplaces of today's society. According to them organizations that do not incorporate the use of new technologies in institutions cannot seriously claim to prepare their students for life in the twenty-first century.New technologies provide opportunities including the ability to tailor learning to the individual (Aminpour, 2007). This, Kalu, Asim and Ani (2003) agreed that, the world is fast becoming a global village as a result of developments in ICT.United Nations Educational, Scientific and Cultural Organization (1998) stated thatInformation and Communication Technology is a useful tool to increase every citizen's power to have access to information and new forms of education . Also, networking websites enable users from all over the world to remain connected and communicate with others on a regular basis. Information and Communication Technology has changed how people live, work and play.

Thus, modern Information and Communication Technology driven teaching and learning process play an important role in the development of education worldwide, especially in assisting the teacher and learner. ICT driven teaching and learning process over the years has been examined by several researchers and proven to be more flexible, economical, learner friendly and favorite. InfoDev (2013) posited that, it is generally believed that ICTs can empower teachers and learners, promote change and foster development.

The means of ICT in teaching and learning is for effective communication of information. Oliver (2000) revealed that background technology was the only means at which learning can easily be demonstrated. Similarly, Rogers (2008) confirms that Information and Communication Technology directly boost students' performance in general if well geared towards student abilities.Major (2013) states that:

> *The current era of globalization, enhanced by Information and Communication Technology (ICT) Innovations, stands to improve the quality of students graduating from Nigerian universities. This is premised on the fact that ICT tools, if well positioned, could help maintain*

and enhance education quality as new ways of teaching and learning research and development, and acquiring and disseminating knowledge are made possible (p. 43).

Students that use Information and Communication Technology in learning may perform better than those who do not use it. In view of the value attached to ICT support teaching and learning, the paper seeks to reveal the contributions of ICT to teaching and learning in Adult and Non-Formal Education at Federal College of Education (Technical), Omoku.

Statement of the problem

The urge to solve an existing problem is the motivating force behind every research work. For the past years, the chalkboard has been one major means for teaching and learning in conventional classrooms. The chalkboard method has obvious disadvantages, which include low motivation,produces dust during writing. It does not portray the true picture or real colour, shapes and objectives of image or object(s) drawn on it. In some cases, students seated at the extreme of the classroom may not see clearly what would be written on the chalkboard. Students may not fully participate in the learning process. Chalkboard is not modern, therefore, does not conform to modern trends and challenges in effective classroom communication. It is on this note that the researcher seeks to ascertain the impact of Information and Communication Technology in improving teaching and learning in Adult and Non-Formal Education at Federal College of Education (Technical), Omoku.

Purpose of the Study

The purpose of this study is to ascertain the impact of Information and Communication Technology in improving teaching and learning among students in Adult and Non-Formal Education at Federal College of Education (Technical), Omoku.

Research Questions

1. What Information and Communication Technology gadgets are available for teaching and learning?

2. How does the use of Information and Communication Technology facilitate the process of teaching and learning?

3. What is the effect of ICT in teaching and learning?

Significance of the Study

The study is significant because the findings will help educational managers and administrators to plan on how to improve on the process of teaching and learning. It will also help students to achieve better outcomes and develop sufficient potentials and skills that enable them to take full advantage from the new opportunities that ICT offer. Further, ICT will help teachers update learning materials in their responsibilities in accordance with the demands of ICT objectives; develop or conduct research in order to increase their intellectual capacity. It will be significant to the government because, using ICT in the classroom will help to prepare the current generation of students for a workforce where computers, the Internet and related technologies are becoming more and more ubiquitous.

An Overview of Information and Communication Technology

Information generally has been viewed as a fact told, details about something or knowledge gained or given. Information is seen as an organized and processed data in order to arrive at a meaningful result. The American Heritage Dictionary of English Language (2009) described information as:

1. Knowledge derived from study, experience, or instruction;
2. Knowledge of specific events or situations that has been gathered or received by communication; intelligence or news; and
3. Computer science processed, stored or transmitted data.

Communication on the hand, is the exchange or sharing of ideas, message or information from one person to another. The desired outcome or goal of any communication process is for an understanding. Skills You Need (2011) defined communication as the act of transferring information from one place to another or from person to person. The authority further gave the following as categories of communications:

1. Spoken or verbal communication, which includes face-to-face, telephone, radio or television or other media;
2. Non-verbal communication as in body language, gestures, how people dress or act, even body perfume;
3. Written communication as in letters, e-mails, books, magazines, internet, or via other media; and
4. Visualization communication such as graphs, charts, maps, logos and other visualization.

Technology is seen as materials, tools or equipment used in carrying out some tasks. Wikipedia (2007) viewed technology as the making, modification, usage, and knowledge of tools, machines, techniques, crafts, systems and methods of organization in order to solve a problem, improve a pre-existing solution to a problem, achieve a goal, handle an applied input/output relation or perform a specific function.Gbasibo (2006) conceptualized technology as the systematic application of scientific or other organized knowledge to perform tasks.

Information and Communication Technology is therefore an umbrella term that includes any communication device or application encompassing television, internet, satellite systems, telephone, radio, computer and network software and hardware as well as the various services and applications associated with them, such as video conferencing and distance education (Rouse, 2011). Elaborating further, Mangal and Mangal (2009) conceptualized information and communication technology as a:

> *Technology employed in the form of tools, equipment and application support which helps in the collection, storage, retrieval, use, transmission, manipulation and dissemination of information as accurately and efficiently as possible for the purpose of enriching the knowledge and develop communication, decision-making as well as problem-solving ability of the user (p. 23).*

Zamani (2005) in Ebrahimi (2009) stated that Information and Communication Technology imply interaction between the user and the data. From the foregoing, it simply shows that ICT have come to dominate the modern society and become the basis for the survival of the modern man or woman. ICT have had a profound influence on teaching and learning processes. Today, both teachers and students can engage in scientific research goals using the Internet. ICT is a medium through which teachers can teach and learners can learn.Rashmi (2011) sees Information and Communication Technology as a diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information. According to Rashmi (2011), ICTs are:

> *a potentially powerful tool for extending educational opportunities, both formal and non-formal, to previously underserved constituencies-scattered and rural populations, groups traditionally excluded from education due to cultural or social reasons such as ethnic minorities, girls and women, persons with disabilities, and the elderly, as well as all others who for reasons of cost or because of time constraints are unable to enroll on campus (p.2).*

The importance of Information and Communication Technology in education cannot be over-emphasized. It will help teachers and learners in the following ways:

1. It allows students to progress at their own learning pace. In other words, ICT promotes individualization of instruction;
2. It increases motivation in teaching and learning;
3 .
   It enables students to gain both quantitative and qualitative understanding of problems in the various subjects and topics under study;
4. It helps to reduce the difficulty associated with experimental and or theoretical studies;
5. It helps learners who are shy to make oral contributions to freely interact with the computer, which is not a human teacher.

Methodology

The study adopted descriptive survey design. The design was adopted because of its ability to survey the effectiveness of ICT in teaching and learning by adults in non-formalsettings. The population of the study consisted of 42 staff and students in the Department of Adult and Non-Formal Education in Federal College of Education (Technical), Omoku. The population was not sampled. The main instrument used for data collection was a structured 14-item questionnaire tagged "Information and Communication Technology Questionnaire (ICTQ)". The data obtained were analyzed with the aid of means (x) to answer the research questions.

Results and Analysis

The result of the study was based on the research questions that guided the study.

Research Question 1: What Information and Communication Technology gadgets are available for teaching and learning?

Table 1: Mean Scores of Availability of ICT Gadgets for Teaching and Learning

S/N	Item	SA (4)	A (3)	D (2)	SD (1)	TOTAL (42)	$\bar{X}$	Interpretation
1.	The school authority has made adequate provision for ICT gadgets.	2 (8)	12 (36)	18 (36)	10 (10)	42 (90)	2.14	Not Available
2.	There are basic facilities such as computer (laptops and desktops), power point equipment and internet available for teaching and learning.	22 (88)	10 (30)	6 (12)	4 (4)	42 (134)	3.19	Available
3.	There is availability of virtual learning environment such as blogs, video-conferencing and podcasts for teaching and learning.	2 (8)	5 (15)	17 (34)	18 (18)	42 (75)	1.80	Not Available
4.	There is regular supply of light to power ICT facilities for teaching and learning.	2 (8)	14 (42)	16 (32)	10 (10)	42 (92)	2.19	Irregular Supply
							9.31	
Grand $\bar{X}$							**2.33**	

Using the determined criterion mean of 2.5, table 1 showed that there are basic facilities such as computer (laptops and desktops), power point equipment and Internet facilities available for teaching and learning (3.19). While the following with criterion mean value below 2.5 indicated that the school authority has not made adequate provision for ICT gadgets (2.14), there is no available virtual learning environment such as blogs, video-conferencing and podcasts for teaching and learning (1.80), and there is no regular supply of light to power ICT facilities for teaching and learning (2.19).

Research Question 2: How does the use of Information and Communication Technology facilitate the process of teaching and learning?

Table 2: Mean Scores of ICT Gadgets Facilitating the Process of Teaching and Learning.

S/N	Item	SA (4)	A (3)	D (2)	SD (1)	TOTAL (42)	$\bar{X}$	Interpretation
1.	Audio-Visual gadgets promote teaching and learning spirit.	25 (100)	7 (21)	7 (14)	3 (3)	42 (138)	3.28	Very well
2.	Projectors make the process of teaching and learning easy.	18 (72)	12 (36)	7 (14)	5 (5)	42 (127)	3.02	Very well
3.	Internet improves learning.	14 (56)	11 (33)	12 (24)	7 (7)	42 (120)	2.86	Very well
4.	Computer gadgets make teacher and students more innovative.	14 (56)	17 (51)	9 (18)	2 (2)	42 (127)	3.02	Very well
5.	Telephones stimulate teaching and learning.	15 (60)	20 (60)	2 (4)	5 (5)	42 (129)	3.07	Very well
6.	Internet helps teachers to prepare lessons and learners to do assignment more effectively,	10 (40)	19 (57)	5 (10)	8 (8)	42 (115)	2.74	Very well
7.	Internet helps in teams work and share ideas related to schools curriculum.	13 (52)	22 (66)	7 (14)	- (0)	42 (132)	3.14	Very well
Grand $\bar{X}$							**21.13** / **3.02**	

Based on the criterion mean of 2.5, table 2 showed that audio-visual gadgets promote teaching and learning spirit (3.28), projectors make the process of teaching and learning easy (3.02), Internet improves learning (2.86), computer gadgets make teachers and studentsto be more innovative (3.02), telephones stimulate teaching and learning (3.07), Internet helps teachers to prepare lessons and learners to do assignment more effectively (2.74), and Internet helps in teams work and share ideas to curriculum (3.14).

Research Question 3: What is the effect of teaching and learning with ICT gadgets?

Table 3: Mean scores of the effect of teaching and learning with ICT gadgets

S/N.	ITEM	SA (4)	A (3)	D (2)	SD (1)	TOTAL (42)	$\bar{X}$	Interpretation
1.	The use of ICT gadgets has made the world a global village.	11 (44)	18 (54)	10 (20)	3 (3)	42 (121)	2.88	Good effect
2.	The use of ICT gadgets can arouse interest of teaching and learning.	10 (40)	23 (69)	9 (18)	- (0)	42 (127)	3.02	Good effect
3.	Teaching and learning are made easy with ICT gadgets.	17 (68)	9 (27)	11 (22)	5 (5)	42 (122)	2.90	Good effect
Grand $\bar{X}$							**8.8** / **2.93**	

With the criterion mean of 2.5, table 3 indicated that the use of ICT gadgets has made the world a global village (2.88), the use of ICT gadgets can arouse interest of teaching and learning (3.02), and teaching and learning are made easy with ICT gadgets (2.90).

Discussion

Based on the research questions used of the study, it revealed that there are no Information and Communication Technology gadgets available for teaching and learning in Adult and Non-Formal Education in Federal College of Education (Technical), Omoku.Ali, Haolader and Muhammad (2013) argued that traditional educational environments do not seem to be suitable for preparing learners to function or be productive in the workplaces of modern society. They assert that

organizations that do not incorporate the use of new technologies in institutions cannot seriously claim to prepare their staff and students for life in the twenty-first century. Also, the study revealed thatthe use of Information and Communication Technology facilitate the process of effective teaching and learning in Adult and Non-Formal settings. This was supported by InfoDev (2013) who posited that, it is generally believed that ICTs can empower teachers and learners, promote change and foster development. This is evident in contemporary societies.

Finally, the study revealed that there is difference in the effect of teaching and learning with ICT gadgets and chalkboard in Adult and Non-Formal Education in Federal College of Education (Technical), Omoku.In agreement to this, Ebrahimi (2009) revealed that traditional methods of education are no longer able to meet the needs of today's learners.This is because they lack inspiration, do-it-yourself approach, etc.

Conclusion

Information and Communication Technology gadgets are indispensable instruments in efficient and effective teaching and learning in contemporary world. The availability of the instruments has reduced the whole universe to one global village because of their efficacy.

Recommendation

In view of the fact that ICT gadgets have positive effect on teaching and learning, the researchers therefore recommend based on the findings that Management of Federal College of Education (Technical), Omoku should make provision for ICT gadgets for teaching and learning.

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