

Availability and Utilization of Information and Communication Technology among Instructors in Adult and Non-Formal Education Centers in Kwara State, Nigeria

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Abstract

This study examined the availability and utilization of information and communication technology (ICT) among instructors in adult and non-formal education centers in Kwara State, Nigeria. Three objectives were raised and translated to research questions to guide the study. A descriptive survey research design was adopted for the study and 271 was considered as the target populations comprising male and female instructors. A sample size of one hundred and sixty (160) respondents was selected across the State. A multi-stage sampling procedure consisting of cluster sampling, purposive sampling and simple random sampling was adopted. Check list and questionnaire were used as an instrument for data collection for the study. The reliability of instruments was achieved using test-retest technique and a co-efficient 0.82 was obtained. The administration of the instruments was carried

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out by the researchers and five volunteer field research assistants. The data collected was analyzed using frequency count and percentages. One of the findings revealed that the level of utilization of ICT among instructors was low. It is therefore, recommended that there is a need to create awareness among instructors on the level of utilization of ICT to increase the level of consciousness for effective teaching learning process.

Keywords: Availability, Adult and Non-Formal Education Centers, Instructors, Utilization ICT,

Introduction

Information and communication technology is as ancient as human civilization going by its metamorphosis from analogue age to the digital era. Advancement in sciences and technology brings about numerous innovations in e-learning, e-commerce, e-banking among others. Therefore, increased access to knowledge and enables greater exchange of ideas in all the areas of human endeavor. The applications of Information and Communication Technology (ICT) and its uses in adult education has gained global recognition. Nigeria, in particular, when literacy by Radio organized by UNESCO and the federal government of Nigeria in 2000 with the aims to mobilize and sensitize nomadic pastoralists to appreciate the value of modern education and encourage them nomads to contribute meaningfully towards the education of their children (National Commission for Nomadic Education, 2000).

Akuegwu et al. (2011) were of the view that ICTs provide teachers with opportunities for experimenting with emerging technologies, thereby aiding in the provision of interesting and creative presentation of content. It engenders a multi-media presence in the classroom. ICTs provide teachers with increased opportunities to collaborate and network with colleagues, thereby increasing communication and exchange of linkages among themselves. In recent years, research has shown that the potential and benefits derived from Information and Communication Technology (ICT) has improved the quality of education. ICT is viewed as a major tool for building knowledge societies (UNESCO, 2003). Rai (2006) reported that ICT is changing the world and the modalities of learning among its citizens. He further buttressed that ICT changes teaching and learning through its

potential as a source of knowledge, a medium of transmitting content and a means of interaction and dialogue.

Ghavifekr & Rosdy (2015) view ICT as a shorthand for computers, software, networks, satellite links and related systems that allow people to access and share information and knowledge in a variety of forms. Hughes (2013) defines integration of technology in teaching and learning as a mean by which the use by teachers supports the constructivist teaching and learning process. According to Aduwa-Ogiegbaen & Imogie (2005), materials and resources including audio and video tape recorders, slide opaque and over-head projectors, still pictures, programmed instructions, filmstrips, maps, and charts among others. These offer a variety of learning experiences individually or in combination to offer different teaching and learning experiences. Adult literacy instructor required a high level of professionalism and experiences to handle modern communication technology gadgets to facilitate learning. Akudolu, & Olibie (2007) reported that instructors/teacher's job in this ICT era was to provide clear explanation and help learners learn better. He further stressed that, instructors maximize ICT gain in their career through computer literacy skills acquisition. Oni (2011) noted that, many untrained instructors/teachers were teaching at different levels and categories of institutions of learning, an assertion that holds forth in adult literacy classes. This possibly explains the demise of many adult literacy programs (Fajonyomi & Adeyemi, 2000). In addition, the effectiveness and poor performance of adult literacy programs could also be because of unconducive learning environment and inappropriate instructional resources.

Theoretical Framework

This research made used of two theories, namely:

- Technological Pedagogical Content Knowledge (TPACK) framework by Mishra & Koehler (2006)
- Experiential Learning Theory by David Kolb (1970)

Technological Pedagogical Content Knowledge (TPACK) framework by Mishra & Koehler (2006)

This study is guided by Technological Pedagogical Content Knowledge (TPACK) framework developed Mishra & Koehler (2006). This framework promotes the view that a teacher depends on three domains of knowledge for effective integration of ICT into teaching and learning, which are: content knowledge (CK), pedagogical knowledge (PK) and technological knowledge (TK). The position is further enhanced by the following statements:

- *Instructor must know and understand the subject that he/ she teaches, including knowledge of central facts, concepts, theories, and procedures if the teacher is to integrate technology in teaching.*
- *Instructor with deep pedagogical knowledge is likely to integrate technology in his or her teaching considering how students can best learn in a given classroom context and nature of learners.*
- *Instructor with TK has good knowledge of operating system and computer hardware, the ability to use standard sets of software tools (e.g., word processors, spreadsheets, browsers, e-mail).*

The above assertions led to the development of Technological Pedagogical Content Knowledge (TPACK) framework by Mishra & Koehler (2006). Interaction of these three knowledge domains, CK, PK and TK, will enable instructors to integrate ICT into effective teaching. Understanding TPACK is not about going above and beyond understanding technology, content, or pedagogy in isolation, but on understanding how these forms of knowledge interact with each other.

Experiential Learning Theory by David Kolb (1970)

This study is also guided by David Kolb experiential learning theory of 1970. The theory remains valid today and significant in the process of training to bridge the gap in learning styles. The theory stated that people can learn from experience emerging from their daily activities. Kenny (2008) defines experiential learning as the process of creating and transforming experience into knowledge, skills, attitudes, values, emotions, beliefs, and senses. In the same manner, Fajonyomi (2015) noted that experiential learning has been associated with educational practices in informal and non-formal settings. Its application in formal setting includes colleges and university and involves liberal, civic, and

professional subjects. He affirms that, experiential learning philosophy involves many methodologies in which educators or instructors purposively engage with learners' indirect experience and focused on their reflection to increase knowledge, development skills, clarify values and develop people's capacity to contribute to communities. The theory is related to the present study because instructors/facilitators play a major role in the learning process through uses and application of Information and Communication Technologies (ICT's) and by putting into practice what they learnt during teaching and learning process.

Both Technological Pedagogical Content Knowledge (TPACK) framework and experiential learning theory are important to this study because they place emphasis on instructors' knowledge in application of ICT's in the teaching and learning process. To this end, instructors' experience and knowledge can help to sustain learners' interest in adopting ICT as a way of teaching.

Statement of the Problem

The uses and applications of ICT have so far not grown beyond the entertainment industry. Over the years, efforts have been made by the researchers to reposition and direct its scope towards the field of adult education and other areas of discipline across the globe. However, it has not been effectively and efficiently utilized among instructors in adult and non-formal education centers in sub-Saharan African countries. Despite its benefit in facilitating teaching learning process as it seen in developed countries. Adebisi (2013) observed that without being put into use ICT offers no contributory factors towards effective teaching and learning. Therefore, this study focuses on availability and utilization of ICT among instructors in adult and non-formal education centers in Kwara State, Nigeria by focusing on the identification of types of ICT's, level of utilization and the challenges faced in utilization of ICT among instructors especially where gaps exist, and the ways to fill these gaps.

Objectives of the study

The following objectives are formulated to guide the study.

- i. to identify types of ICT available in adult and non-formal education centres' in Kwara state.
- ii. to determine the level of utilization of ICT among instructors in adult and non-formal education centres in Kwara state.
- iii. to examine the challenges faced in utilization of ICT among instructors in adult and non-formal education in Kwara state.

Research questions

The following research questions have been formulated for the study.

- i. What types of ICT facilities are available in adult and non-formal education centres in the Kwara state?
- ii. What is the level of utilization of ICT among instructors in adult and non-formal education centres in the Kwara state?
- iii. What are the challenges faced in utilization of ICT among instructors in adult and non-formal education centres in the Kwara state?

Methodology

The descriptive survey was used for the study. Check & Schutt (2010) define descriptive survey research design is an efficient method for systematically collecting data from a broad spectrum of individuals and educational setting. The justification for this design is to seek the opinions and views of the respondents on the availability and utilization of information and communication technology among instructors in adult and non-formal education centers in the Kwara state, Nigeria.

The population for the study comprises of male and female instructors in adult and non-formal education centers across the state. 271 instructors employed in 209 government approved ICT centers were considered as the target population. The relevant information was

obtained from the Kwara Ministry of Education. A sample size of 160 was done by using Raosoft online sample calculator (2019) which was recommended for a population of that magnitude, to have a fair representation of the target population. Multi-stage sampling procedure was adopted. At the first stage, a purposive sampling technique was used to sample government approved ICT centers/institutions awarding Degree and Diploma certificates within Kwara State. They include National Open University of Nigeria (NOUN) and adult literacy centers and private ICT centers. Also, at the second stage, purposive sampling was adopted to sample instructors/facilitators. At the final stage, simple random sampling was employed to sample 77 respondents willing to participate in the study.

Two research instruments were used for data collection for the study. These include check list and a self-developed questionnaire tagged "Availability and Utilization of Information and Communication Technology among Instructors Questionnaire (AUICTIQ)". The questionnaire consisted of four sections. Section A contained demographic information of the respondents, that is, gender, age, years of working experience and educational qualifications. Section B contained 10 items on the types of ICT facilities are available in adult and non-formal education centers. Section C focused on level of utilization of ICT among instructors in adult and non-formal education. Section D focused on the challenges faced in utilization of ICT among instructors in adult and non-formal education centers.

The options to these items were taken on four (4) point Likert scale type rating Very Often (VO), Often (O), Less Often (LO) and Not All (NA) and Strongly Agree (SA); Agree (A); Disagree (D); and Strongly Disagree (SD). In the same manner, check list was designed to obtain information from respondents (instructors) on the types of ICT available in adult and non-formal education centers. The checklist contained items 1-10 with two different columns of "available" and "not available". The items in the instruments were validated by experts in the fields of adult education, test, and measurement through a cross-examination by peer review in relation to the research questions raised for the study. The reliability co-efficient of the questionnaire was carried out using test re-test technique and 0.82 was obtained which revealed that the questionnaire was reliable for the study.

The administration of the instrument was carried out by the researchers and five volunteer research assistants who have preliminary knowledge on the content of the questionnaire, administration procedure, privacy, and confidentiality of the respondents. All the questionnaires and checklist were successfully filled and returned. The data collected were analyzed using frequency counts and percentages.

Results

This section presents the results and interpretation from the data collected:

Research Question 1: What types of ICT facilities are available in adult and non-formal education centers in the Kwara state?

This research question was also analyzed using frequency count and percentages. The result is shown in Table 1.

Table 1.

Types of ICT facilities are available in adult and non-formal education centers in Kwara state.

S/N	Statements/Items	Available		Not Available	
		F	(%)		(%)
1.	Computer set	160	(100%)	0	(0%)
2.	Interactive white board	36	(22.5%)	124	(77.5%)
3.	Tablet devices	114	(71.25%)	46	(28.75%)
4.	Projector	67	(41.88%)	93	(58.12%)
5.	Radio recorders/players	41	(25.62%)	119	(74.38%)
6.	Presentation clicker	51	(31.88%)	109	(68.12%)
7.	Digital camera	62	(38.75%)	98	(61.25%)
8.	Mobile internet	128	(80%)	32	(20%)
9.	E-library.	14	(8.75%)	146	(91.25%)
10.	Mobile phone	160	(100%)	0	(0%)

Table 1 shows the results of the respondents on the types of ICT facilities available in adult and non-formal education centers using frequency counts and percentages from the data collected. The result

indicated that items 1, 3, 8 and 10 were available as they have higher percentages. While, items 2, 4, 5, 6, 7 and 9 were not adequately available. This indicated that there is low level of ICT availability in adult and non-formal education centers in the Kwara state.

Research Question 2: What is the level of utilization of ICT among instructors in adult and non-formal education centers in the Kwara state?

This research question was also analyzed using frequency count and percentages. The result is shown in Table 2.

Table 2.

Level of utilization of ICT among instructors in adult and non-formal education centers in the Kwara state.

S/N	Statements/Items	Frequency, Percentage (%)			
		VO	O	LO	NA
1.	Use ICT to design and develop primers/materials relevant to the needs of the learners.	84 (52.5%)	57 (35.63%)	19 (11.87%)	0 (0%)
2.	Use interactive white board for teaching learners.	4 (2.5%)	24 (15%)	63 (39.37%)	69 (43.13%)
3.	Use tablet devices in teaching learners.	79 (49.38%)	60 (37.5%)	21 (13.12%)	0 (0%)
4.	Used projector to presented picture, chart and diagram for appropriate illustrations.	15 (9.37%)	22 (13.75%)	58 (36.25%)	65 (40.63%)
5.	Use recorder/player for teaching learning process	12 (7.5%)	27 (16.88%)	87 (54.37%)	34 (21.25%)
6.	Use presentation clicker to make teaching learning process to learners clear.	14 (8.75%)	11 (6.88%)	62 (38.75%)	73 (45.62%)
7.	Use digital camera to present real objects to learners.	13 (8.12%)	24 (15%)	69 (43.13%)	54 (33.75%)
8.	Use mobile internet to facilitate teaching learning process to learners.	84 (52.5%)	68 (42.5%)	8 (5%)	0 (0%)
9.	Use e-library to facilitate teaching learning process.	0 (0%)	6 (3.75%)	11 (6.87%)	143 (89.38%)
10.	Used mobile phone application to pass information to learners.	83 (51.88%)	46 (28.75%)	18 (11.25%)	13 (8.12%)

able 2 shows the results of the respondents on the level of utilization of ICT among instructors in adult and non-formal education centers in

the Kwara state using frequency counts and percentages from the data collected. The result indicated that items 2, 4, 5, 6, 7 and 9 were utilized often or not utilized at all among instructors in in adult and non-formal education centers as indicated by the higher percentages. While, items 1, 3, 8 and 10 were utilized very often or often utilized among instructors.

Research Question 3: What are the challenges faced in utilization of ICT among instructors in adult and non-formal education centers in the Kwara state?

This research question was also analyzed using frequency count and percentages. The result is shown in table 3.

Table 3.

Challenges faced in utilization of ICT among instructors in adult and non-formal education centers in the Kwara state.

S/N	Statements/Items	Frequency, Percentage (%)			
		SA	A	D	SD
1.	Low-capacity building affects using ICT to develop primers and instructional materials.	58 (36.25%)	65 (40.63%)	13 (8.12%)	24 (15%)
2.	Lukewarm attitude towards ICT affects it usage for effective teaching.	63 (39.37%)	69 (43.13%)	4 (2.5%)	24 (15%)
3.	Low confidence affects usage of ICT for presenting lesson appropriately.	79 (49.38%)	60 (37.5%)	21 (13.12%)	0 (0%)
4.	Infrastructural support makes it difficult for using ICT to facilitate teaching learning process.	72 (45%)	51 (31.88%)	22 (13.75%)	15 (9.37%)
5.	High cost of maintenance discourages using ICT for teach learners.	62 (38.75%)	73 (45.62%)	14 (8.75%)	11 (6.88%)
6.	Inadequate distribution of ICT facilities affects teaching learning process.	84 (52.5%)	61 (38.13%)	15 (9.37%)	0 (0%)

Table 3 above shows the result of the respondents on the challenges faced in utilization of ICT among instructors in adult and non-formal education centers in the Kwara state using frequency counts and

percentages from the data collected. The result indicated that items 1, 2, 3, 4, 5 and 6 had higher percentages which indicated that low-capacity building, lukewarm attitude, fair of failure, infrastructural support, high cost of maintenance and inadequate distribution were among the challenges faced in utilization of ICT.

Summary of Findings

From the analysis of data in the preceding tables, the following findings were deduced:

- i. Common types of ICT facilities are available in adult and non-formal education centers in the Kwara state includes computer set, mobile phone, tablet devices and mobile internet.
- ii. The level of utilization of ICT among instructors in adult and non-formal education centres in the Kwara state was low-high as evidently shown in the area of the usage of projectors, radio recorder/player for the teaching-learning process, e-library to facilitate the teaching-learning process, and interactive white board for teaching learners.
- iii. The challenges faced in utilization of ICT among instructors in adult and non-formal education in the Kwara State was high as shown in area of low-capacity building affects using ICT to develop primers and instructional materials, lukewarm attitude towards ICT, low confidence, infrastructural support and high cost of maintenance.

Discussion of Findings

One of the findings of this study revealed that common types of ICT facilities are available in adult and non-formal education centers includes computer set, mobile phone, tablet devices and mobile internet. This finding agrees with the work of Adebisi (2013) who found that the uses of ICTs in schools depends on the availability of ICT equipment. There is always a discrepancy between availability of ICT equipment and their usage. He affirmed that the use of ICTs in teaching and learning has become imperative at all levels of education.

Availability of ICTs without being put into use has no positive contributory factor for enhancing teaching and learning.

Another finding from the study revealed that the level of utilization of ICT among instructors in adult and non-formal education centers in the Kwara state was low. This finding is in accordance with Carlson & Gardio (2002) who found that multimedia cannot be effectively utilized in literacy instruction without the instructor. Facilitators determine whether technologies are used appropriately or not. In the same manner, these present findings also support the finding of Yusuf (2005) who found that effective utilization of multimedia into learning depends on facilitators' conviction of the relevance of multimedia as a means of providing better access to richer range of resources for themselves and their learners.

In addition to the above, finding of Aktaruzzaman, Shamim & Clement (2011) revealed that when used appropriately, different ICTs help in expanding access to education to the increasingly digital workplace through information distribution, learning management systems and managing of educational services and make them affordable and available anytime and anywhere. For example, they argued that opportunities are now open to individuals and groups who were previously constrained from attending traditional universities to access higher education and other forms of adult learning through online modes of learning such as e-learning, blended learning among others.

The third finding of the study revealed that the challenges faced in utilization of ICT among instructors in adult and non-formal education in Kwara State was high and affects using ICT to develop primers and instructional materials, lukewarm attitude towards ICT, low confidence, infrastructural support and high cost of maintenance as evidently showed. This finding is in accordance with the work of Charles, Michael & Polycarp (2017) who reported that training of facilitators enhances the utilization of multimedia to a very high extent; this is true because training makes the facilitators comfortable and motivated to utilize multimedia in instruction, exposes them to the multimedia technologies they will meet in class and equips them with knowledge and skills for multimedia utilization. Similarly, the finding agrees with the work of Ezeonyirimba (2013) who observed that inadequate fund is also a challenge faced by facilitators in utilization of

multimedia in adult literacy centers. There are lots of multimedia technologies which makes learning much easier and faster, but lack of fund has effect on its availability and use in the literacy centers.

Conclusion

ICT is an integral part of facilitating teaching learning process if available and adequately utilized by instructors or facilitators. Application of ICT in adult and non-formal education can help to bridge learning between instructors and learners to increase access to knowledge and enabled greater exchange of ideas. Research findings have shown that there is low level of utilization of ICT among instructors in adult and non-formal education centers. For this reason, concerted efforts should be made to sustain and improve on utilization of ICT for sustainable development.

Recommendations

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

- i. There should be adequate availability and supply of ICT appliances by the management of adult and non-formal education centres.
- ii. There is need to create awareness among instructors in adult and non-formal education centres on the level of utilization of ICT to increase level of consciousness for effective teaching learning process.
- iii. Advanced studies should be encouraged among instructors to complement their existing knowledge on uses of ICT and adequate infrastructural support and maintenance should be provided to address the challenges faced in utilization of ICT among instructors in adult and non-formal education.

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