ICT AS A CHANGE AGENT FOR QUALITATIVE HIGHER ADULT EDUCATION IN NIGERIA: A CASE STUDY OF OYO STATE

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ABSTRACT

This study appraised the role of Information and Communication Technology (ICT) as a change agent in qualitative higher adult education programmes in Oyo State. It identified the available ICT facilities, determine the extent of utilization of ICT and ascertain the strategies for practical use and implementation of ICT for such programmes. Three research questions and hypotheses guided the study with a descriptive survey design and a questionnaire as a data collection instrument. Four experts in the field validated the instrument while data generated and collated was tested using the Cronbach statistics. The overall reliability score of the instrument's rating was 0.908. Findings showed that the identified ICT facilities available, as well as their extent of utilization in these programmes for higher adult education programmes, were accepted as being appropriate. Similarly, the strategies adopted for the effective implementation and use of ICT in higher adult education programmes in the State were considered suitable for the application.

Keywords: *Higher adult education, ICT awareness, ICT implementation, ICT utilisation, knowledge construction, paradigm change.*

1. Introduction

It is globally considered both a necessity and an opportunity to introduce the use of new technology into higher education. The university-industry-government linkage is a triple-helix model through which the effective transfer of technologies leads to economic growth (Balasubrmanyam et al., 2009). The increasing student population in higher education accelerated the need for information and communication technology (ICT) to process, store and retrieve data in a fast, systematic and accurate fashion. The focus of e-administration in higher education is on the creation of an efficient electronic administration by handling existing resources economically. It aims at adding value to the educational sector by simplification of a lot of diversified management and administrative tasks. According to Kaul (2006), the usage of ICT in higher education institutions starts from the early stages of receiving e-notifications regarding admission, course schedules, and billing procedures and continues till the end of the course including online publication of results

The concept of moving the traditional classroom of desks, notebooks, pencils, and blackboard to an online forum of computers, software, and the Internet intimidates many teachers who are accustomed to the face-to-face interaction of the traditional classroom (Shaikh 2012). ICT changes the concept of teacher-centred learning to student-centred learning and teachers act as coaches, mentors and knowledge facilitators and the learning environment focuses on real-time problem-solving methods

Introducing ICT into educational institutions in Nigeria will bring about a reduction in drop-out rate amongst distant learners that enrolled with the various institutions. Student data relating to academics, fees and administration are tracked more accurately and in real-time. As a consequence, accurate reports to management on multiple aspects of academia, administration and finance are readily available. Thus, relevant data to assist management in making critical strategic and policy decisions from time to time are provided easily (Mujumdar, 2010).

There seems to be a shortage of research on the extent of usage of ICT in adult higher education programmes in Nigeria. More so, Adult Higher Education was not part of studies included on the factors influencing the utilization of ICT. These are some of the gaps that the present study intends to fill. The research seeks to identify the level of awareness on the use of ICT in adult higher education; the extent of utilization of ICT in adult higher education; the factors influencing the degree of usage; and the strategies for effective use of ICT in adult higher education. The statement of the problem of this study can, therefore, be posed in the form of a question thus: 'how can ICT be appraised as a change agent for a qualitative adult higher education programme in Nigeria? The aim of this study is mainly to critically assess the role of information, communication technology as a change agent for higher education in Nigeria, taking Oyo State as a case study.

Research Questions

The following research questions will guide the study:

1. What are the ICT facilities available for higher education programmes IN Oyo State?
2. What is the extent of utilization of ICT in higher education programmes in Oyo State
3. What are the strategies for effective use and implementation of ICT in higher education in Oyo State?

Hypotheses

Three two-tailed tests of significance will be formulated to guide this study. These non-directional hypotheses have been derived from the research questions and tested at an alpha level of 0.05. They include the proposition that:

H_{01} There is no significant difference in the mean rating of instructors and learners on the ICT implementation process adopted in adult education programmes.

H_{02} There is no significant difference in the mean ratings of instructors and learners on the extent of utilization of ICT in adult education programmes.

H_{03} There is no significant difference in the mean ratings of instructors and learners on the factors militating against effective utilization of ICTs in higher education programmes.

2. Related Works

Paradigm Change in Teaching and Learning

There seems to have been a little impact of ICT utilization and far less change, in the education sector, than other fields have experienced. However, a lot of people have attempted to explore this lack of activity and influence (Soloway and Pryor, 1996; Collis, 2002). The field of education has not been unaffected by the penetrating impact of information and communication technology. However, ICT has immense potential to contribute to the quality and quantity of teaching and learning and research in traditional and distance education institutions. ICT enhances teaching and learning through its dynamic interactive and engaging content and provides real opportunities for individualization of instruction. There is the potential to accelerate, enrich and deepen skills as well as motivate and engage students learning. It helps to relate school experience to work practice, create economic viability for tomorrow's workers and contributes to the total development of the institution. It also strengthens teaching and learning and provides opportunities for connection between the school and the world (Farid et al., 2015).

ICT as a Pedagogic Tool

ICTs, as a field of education, has been there in the form of teaching aids or apparatus, as it was earlier called (Abimbade, 2002). But current achievement in the field of ICT has offered tremendous opportunities for learning by electronic means, the use of e-learning and internet technology in education. It is a means to improve accessibility, efficiency and quality teaching.

The provision of an appropriate framework for the full integration of ICTs into the educational system of any nation's higher education is the responsibility of the federal or central government (Yusuf, 2006). For the proper integration of ICTs and related technology into the educational system, there is a need for a comprehensive policy document to serve as a guide for stakeholders in the education sector. Competence, adequate funding, provision of infrastructural facilities, institutional factions, environmental factors, students attitude, skill, students interest to usage. These factors help determine the successful use of ICT for information retrieval and sharing in education (Gillwald & Esselaar, 2005). There have been some studies on the factors influencing the adoption and integration of ICTs for educational purposes, among others (Oladokun, 2012).

Kirschner and Woperies (2003) maintained that information and communication technology could make the school more efficient and productive by organising a variety of tools to enhance and facilitate teachers' professional activities. Yusuf and Onasanya (2004), opined that ICT provides opportunities for the school to communicate with one another through e-mail, mailing list, chat room and other facilities. It offers quicker and easier access to more extensive and current information. ICT can also be used to do complex tasks as it provides researchers with a steady avenue for the dissemination of research reports and findings.

Honey and Mandinach (2003) advanced three significant reasons for information and communication technology in education. They, however, suggested that it is a tool for addressing challenges in teaching and learning situation; a change agent; and central force in economic competitiveness. As a tool for addressing challenges in teaching and learning, technology has the capabilities for delivery, management and support of effective teaching and learning. As a change agent, it is capable of changing the content, methods and overall quality and quantity of teaching and learning, thereby reducing teacher's workload and ensuring constructivist inquiry-oriented classroom. Moreover, ICT a central force in economic and social shifts that has technology skill critical to the future employment of today s students.

Thierer (2000) pointed out that the role of technology in teaching and learning is rapidly becoming one of the most important and widely discussed issues in contemporary education policy. Experts in the fields of education have agreed that appropriate deployment of ICT holds great promise to improve teaching and learning, in addition to

shaping workforce opportunities. Thus, this study set out to critically appraise the role of information communication technology as a change agent for higher adult education in Nigeria.

Supporting knowledge construction

The emergence of ICTs as learning technologies has coincided with growing awareness and recognition of alternative theories for learning. The methods of learning that hold the most significant sway today are those based on constructivist principles (Duffy & Cunningham, 1996). These principles posit that the active construction of knowledge supported by various perspectives within meaningful contexts aids learning. In constructivist theories, social interactions are seen to play a critical role in the processes of learning and cognition.

The strengths of constructivism lie in its emphasis on learning as a process of personal understanding and the development of meaning in ways which are active and interpretative. In this domain, learning is viewed as the construction of meaning rather than as the memorisation of facts (Jonassen & Reeves, 1996). Learning approaches using contemporary ICTs provide many opportunities for constructivist learning through their provision and support for resource-based, student-centred settings and by enabling knowledge to be related to context and to practice (Berge, 1998; Barron, 1998). As mentioned previously, any use of ICT in learning settings can act to support various aspects of knowledge construction, and as more and more students employ ICTs in their learning processes, the more pronounced the impact of this will become.

Pervasive Learning

In concert with geographical flexibility, technology-facilitated educational programs also remove many of the time constraints that face learners with special needs (Moore & Kearsley, 1996). Students are starting to appreciate the capability to undertake education anywhere, anytime and anyplace. This flexibility has heightened the availability of just-in-time learning and provided learning opportunities for many more learners who previously were constrained by other commitments (Young, 2002).

- Through online technologies, learning has become an activity that is no longer set within programmed schedules and slots. Learners are free to participate in learning activities when time permits and these freedoms have significantly increased the opportunities for many students to participate in formal programs.
- The wide variety of technologies that support learning can provide asynchronous supports for learning so that the need for real-time participation can be avoided while the advantages of communication and collaboration with other learners are retained.
- Since learning at any time is now feasible, teachers also find the capabilities of teaching at any time opportunistic and being used to advantage. Mobile technologies and seamless communications technologies support 24x7 teaching and learning. Choosing how much time is used within the 24x7 envelope and what periods are challenges that will face the educators of the future (Young, 2002).

The continued and increased use of ICTs in education in years to come will serve to improve the temporal and geographical opportunities that are currently experienced. Advancements in learning opportunities tend to be held back by the ICT capabilities of the lowest common denominator, namely the students with the least access to ICT. As ICT access increases among students, so too will these opportunities.

3. Materials and Methods

Design of the Study

This study used survey research method to document the facts concerning the use of ICT (Internet) in adult higher education by adult educators. The study took place in the Oyo State of Nigeria. The state consists of northern, central and southern senatorial districts with thirty-three (33) Local Government Areas (LGAs) divided into five geographical zones. They are Ibadan, Oyo, Ogbomoso, Ibarapa and Oke-Ogun zones. The population of this study includes all the tertiary instructors and learners in Oyo State. There are 391 instructors and 2672 learners distributed in 102 adults higher education centres across the states.

Sampling Procedure

A multi-stage sampling technique was adopted at different levels of this study. Purposive sampling technique was used in the selection of two local government areas from each geographical zone in the state. Consequently, Ibadan North and Ibadan South West LGAs represent Ibadan geographical zone. Oorelope and Saki West LGAs stand in for Oke-Ogun geographical zone; Ogbomoso South and Ogo-Oluwa LGAs represented Ogbomoso zone. Oyo zone was described by Afijio and Oyo East LGAs while Ibarapa East and Ibarapa North LGAs were chosen for Ibarapa geographical zone. In these ten LGAs, all the 37 literacy centres were selected while a random sampling technique was used to select 50% of the 140 instructors and 972 learners which results in 70 instructors and 486 learners. The total sample size was 556 subjects.

Data Collection Instrument

A questionnaire called the ICT Utilization Questionnaire (IUQ) was used for data collection. This instrument was used to elicit data for the entire study. It has three sections labelled A, B and C. Section A is simply an introductory note. Section B gathered demographic information about the respondents, while section C is a four-point modified Likert-type scale of measurement (the appendix contains a specimen showing sections B and C).

Validity and Reliability of the Instrument

Four experts in the field validated the instrument. They are made up of an ICT expert, two experts from Adult Education and a Measurement and Evaluation specialist, all from the University of Ibadan, Ibadan Nigeria. The experts appraised the questionnaire and offered handy suggestions that shaped and enhanced the ability of the survey to measure what it intends to measure.

The instrument was administered to 10 adult educators and ten learners from Akinyele and Ona-Ara LGAs that will not be used for the study but possess the same characteristics as those used for the study. Data generated and collated was tested using the Cronbach statistics. The overall reliability score of the instrument was established at 0.908, implying that the internal consistency of the tool is reliable.

Procedure of Data Collection and Method of Data Analysis

The method of data collection was a direct delivery technique. This enabled the study to gain from the multiplicity of advantages that this technique has, including a high return rate, an opportunity for clarification, where needed, amongst others.

Data collected were analysed using t-test, mean and standard deviation. The formulated hypotheses were tested at 0.05 level of significance using T-test, while the mean and standard deviation were used to provide answers to the research questions. The four-point scale IUQ used a mean score of 2.50 as the criterion value. The mean score of each item was then compared with the criterion value to establish agreement or disagreement with the item. Mean score of 2.50 and above indicates an agreement while below 2.50 indicates disagreement. A cluster mean was also computed for the items in a group. The mean and the criterion value are compared to establish the trend of agreement or disagreement with the items in the cluster.

4. Data Analyses and Results

This section deals with the presentation and analysis of data collected for the study and the results of significant findings. The data were presented based on the research questions and hypothesis tested for the study.

Analysis of Data

RQ_1: What are the ICT facilities available for Higher Adult Education Programmes in Oyo State?

The data presented in table 1(a) showed that the instructors accepted that they have a high level of awareness on the use of ICT. This acceptance level ranges from items 1-6, as shown in Table 1a.This is because the mean responses of all the respondent range from 2.50 and above (that is, X > 2.50) and this 2.50 is the benchmark for rejection or acceptance. It, therefore, implies that all the adult instructors agreed that they have awareness on the use of ICT. The standard deviation of the items with their values ranging from .06585 to .09322 implies that the responses of the instructors are closely related. This makes the findings to some extent, appropriate and reliable.

Table 1a Mean and Standard Deviation of tertiary education instructors on awareness of the facilities for the use of ICT.

(a) Awareness of the use of ICT in Adult Higher Education	N	$\bar{X}$	SD
1. I do know about ICT	556	2.68	0.06585
2. I am aware of the different uses of the internet in higher education	556	2.71	0.02399
3. I do know about electronic journals	556	2.99	0.18535
4. I am aware of the existence of virtual libraries	556	2.90	0.01967
5. I am aware of the usefulness of discussion groups in higher education	556	2.98	0.09322
6. I know the usefulness of video conferencing in adult education	556	2.76	0.07078

$\bar{X}$ = Mean, SD = Standard Deviation

H_{O1}: There is no significant difference in the mean rating of instructors and learners on ICT implementation processes adopted in higher education programmes in Oyo State.

The data presented in table 1b indicated that the mean responses of the instructors and adult learners on their level of awareness of ICT in adult education are accepted as being appropriate. This is because both means are higher than the criterion means for decision ($\bar{X}$ >2.50). The table also revealed that the responses of instructors and adult learners are not significant with their respective t-test values (P-value). This is because the individual P-values for each item are higher than the level of significance (P>0.05). Hence their responses to each question are not significant.

Table 1b T-test analysis of instructor and learners on the level of awareness on the use of ICT in higher adult education.

(b)	Awareness of the use of ICT in Adult Higher Education		N	Mean	SD	St. Error Mean
1.	I do know about ICT	INST	12	2.50	0.16775	0.33710
		ADL	496	2.68	0.6515	0.04787
2.	I am aware of the different uses of the internet in higher education	INST	12	2.58	0.90034	0.25990
		ADL	496	2.71	0.02782	0.04620
3.	I do know about electronic journals	INST	12	3.03	0.16450	0.33616
		ADL	496	2.99	0.01603	0.04567
4.	I am aware of the existence of virtual libraries	INST	12	3.33	0.66134	0.18803
		ADL	496	2.89	0.02539	0.46160
5.	I am aware of the usefulness of discussion groups in higher education	INST	12	3.16	0.71774	0.20719
		ADL	496	2.98	0.10107	0.04944
6.	I know the usefulness of video conferencing in adult education	INST	12	2.83	0.02986	0.29729
		ADL	496	2.76	0.07374	0.04836

N = 556, instructors = 12, respondents (adult learners) = 496, DF = 506, NS = not significant, $\bar{X}$ = Mean, SD = standard deviation.

RQ_2: What is the extent of the utilization of ICT in Higher adult education programmes in Oyo State?

The data presented in table 2a revealed that there is a level of acceptance on the level of utilization of ICT. This is because the mean 76 responses of the instructors range from 2.50 and above ($\bar{X}$ >2.50), which is the benchmark for decision rule. It, therefore, means that the extent of utilization of ICT is accepted and can aid the implementation of higher education programmes in Oyo State. However, the standard deviation of the items showed less disparity in the responses of the adult instructors and learners. This is because their values range from 0.05 to 0.09. As a result, the utilization of ICT can aid the implementation of higher education programmes in Oyo State.

Table 2a: Mean and Standard Deviation of the Extent of Utilization of ICT in Adult Education Programmes in Oyo State.

(c) The extent of utilization of ICT in Higher Adult Education Programmes in Oyo State	N	$\bar{X}$	SD
7. I use the internet at least twice in a week	556	2.782	0.09162
8. I use the internet at least once in a week	556	2.75	0.07026
9. I use the internet at least once in a month	556	2.51	0.48080
10. I use the internet only when it is necessary	556	2.69	0.06339
11. I have never used the internet	556	2.73	0.10726
12. I have the skills to use the internet all on my own	556	3.45	0.09254
13. I use the internet by myself but with assistance from someone else	556	2.85	0.11289
14. I use the internet through someone as I don't have the skills personally	556	2.62	0.09390
15. I use the internet to browse for materials my lessons	556	2.91	0.07257
16. I use the internet to browse for materials in higher education generally	556	2.65	0.05160
17. I use the internet to browse for electronic journals	556	3.03	1.00821

$\bar{X}$ = Mean, SD = Standard Deviation

H_{O2} There is no significant difference in the mean ratings of instructors and learners on the extent of utilization of ICT in higher education programmes in Oyo State.

Table 2b indicated that the mean responses of the instructors and adult learners on the extent of utilization of ICT in higher education programmes are accepted. This is because all their means for each item is greater than or equal to the criterion mean. ($\bar{X}$ >2.50). The table also showed that T-test statistics has no significant effect on the responses of the instructors and adult learners. This is because the respective P-values are greater than the level of significance (P> 0.05). Hence their mean responses are not significant.

Table 2b T-test analysis for instructors and adult learners on the extent of utilization of ICT in higher education programmes in Oyo State.

(b) Awareness of the use of ICT in Adult Higher Education		N	Mean	SD	St. Error Mean
7. I use the internet at least twice in a week	INST	12	2.88	0.34840	0.39026
	ADL	496	2.74	0.09506	0.04877
8. I use the internet at least once in a week	INST	12	2.91	0.91196	0.28758
	ADL	496	2.74	0.07217	0.04824
9. I use the internet at least once in a month	INST	12	2.50	0.16775	0.33710
	ADL	496	2.51	0.04716	0.04707
10. I use the internet only when it is necessary	INST	12	2.50	0.0000	0.28868
	ADL	496	2.70	0.06599	0.04791
11. I have never used the internet	INST	12	2.58	0.164980	0.33616
	ADL	496	2.73	0.10648	0.04973
12. I have the skills to use the internet all on my own	INST	12	3.41	0.49824	0.14865

	ADL	496	2.91	0.49824	0.02239
13. I use the internet by myself but with assistance from someone else	INST	12	3.00	0.60302	0.17408
	ADL	496	2.84	0.12240	0.05045
14. I use the internet through someone as I don't have the skills personally	INST	12	2.50	0.38170	0.39886
	ADL	496	2.63	0.08829	0.04892
15. I use the internet to browse for materials my lessons	INST	12	3.08	0.66845	0.93000
	ADL	496	2.90	0.06445	0.04784
16. I use the internet to browse for materials in higher education generally	INST	12	2.58	0.02985	0.29729
	ADL	496	2.64	0.05788	0.04755
17. I use the internet to browse for electronic journals	INST	12	2.53	0.15470	0.33330
	ADL	496	3.05	0.99973	0.04493

N= 556, 1NST = instructors = 12, ADL = Adult Learners = 496, DF = 506 and NS = Not significant, $\bar{X}$ = mean, SD = standard deviation.

RQ_3: What are the strategies for effective utilization and implementation of ICT in higher adult education in Oyo State?

The data presented in Table 3a showed that all the strategies for utilization and implementation of ICT in higher education programmes in Oyo State are accepted as appropriate. The approaches range from items 18-26, as shown in Table 3a. The reason is the mean response of instructors and learners lies within 2.50 and above. This is the criterion mean for the acceptance of any utilization strategy of ICT in higher education programmes in Oyo State. The standard deviation indicated less difference in the responses of instructors because of their low values. Therefore, these strategies are considered as being appropriate for the implementation of ICT in higher education programmes in Oyo State.

Table 3a: Mean and standard deviation of the strategies for effective utilization and implementation of ICT programmes in Oyo State.

(d)	**Strategies for effective utilization and implementation of ICT in Higher Adult Education Programmes in Oyo State**	**N**	$\bar{X}$	**SD**
18.	Training staff on computer usage would improve their use of the Internet	556	2.69	0.06339
19.	Organizing seminars, workshops and enlightenment campaigns would broaden horizon on the different uses of the internet thus improving its usage	556	2.73	0.10726
20.	Organizing and encouraging participation in seminars and workshops on time management would improve the time allocated to exploring the internet	556	2.85	0.11289

21.	Making a central subscription for the restricted not materials would improve my use of the internet resources in higher education	556	2.62	0.09390
22.	Publishers lifting of restrictions on net materials would improve the usage of internet resources in higher education	556	2.91	0.07257
23.	A centrally arranged programme for acquiring computer systems at a subsidized rate would boost my utilization of the internet	556	2.65	0.05160
24.	Arranging and facilitating soft loans for computer acquisition would enhance my usage of internet resources	556	2.65	0.05160
25.	Providing an internet backbone infrastructure would reduce the cost of linking to net thus boosting my usage of cost of linking to net thus boosting my usage of the internet	556	2.65	0.06711
26.	Establishing cyber cafes that allows me to use the Internet at subsidized rate would boost my usage of the internet	556	3.10	0.96513

$\bar{X}$ = Mean, SD = Standard Deviation.

H_{03} There is no significant difference in the mean ratings of instructors and learners on the factors militating against effective utilization of ICTs in higher education programmes.

The data presented in Table 3b revealed that the mean responses of the instructors and adult learners on the strategies for effective use of ICT in higher education programmes in Oyo State indicated acceptance. This is as a result of the mean on each item on their responses being more significant than 2.50, which is the criterion mean for acceptance. It also revealed that the t-test statistics of the instructors and adult learner has no significant difference. This is because the p-value for each is higher than the level of significance that is $p>0.05$, hence no significant difference between the mean responses of the instructors and the adult learners.

Table 3b T-test analysis of strategies for effective utilization\ of ICT programmes in Oyo State

(c)	**Strategies for the effective Status utilisation of ICT in Adult Higher Education Programmes in Oyo State**		**N**	**Mean**	**SD**	**St. Error Mean**
18.	Training staff on computer usage would improve their use of the Internet	INST	12	2.56	0.16450	0.33616
		ADL	496	2.73	0.10648	0.04973
19.	Organizing seminars, workshops and enlightenment campaigns would broaden horizon on the different uses of the internet thus improving its usage	INST	12	3.41	0.51493	0.14865
		ADL	496	2.91	0.49824	0.02239
20.	Organizing and encouraging participation in seminars and workshops on time management would improve the time allocated to exploring the internet	INST	12	3.00	0.06392	0.17408

	ADL	496	2.84	0.12240	0.05045
21. Making a central subscription for the restricted not materials would improve my use of the internet resources in higher education	INST	12	2.50	0.38170	0.339886
	ADL	496	2.63	0.08829	0.04892
22. Publishers lifting of restrictions on net materials would improve the usage of internet resources in higher adult education	INST	12	3.08	0.66856	0.19300
	ADL	496	2.90	0.06445	0.04784
23. A centrally arranged programme for acquiring computer systems at a subsidized rate would boost my utilization of the internet	INST	12	2.83	0.02986	0.29729
	ADL	496	2.64	0.05788	0.04755
24. Arranging and facilitating soft loans for computer acquisition would enhance my usage of internet resources	INST	12	2.53	0.15470	0.33333
	ADL	496	3.05	0.99973	0.04449
25. Providing an internet backbone infrastructure would reduce the cost of linking to net thus boosting my usage of cost of connecting to net thus promoting my utilization of the internet	INST	12	2.76	0.11464	0.32177
	ADL	496	2.66	0.06374	0.04781
26. Establishing cyber cafes that allows me to use the Internet at subsidized rate would boost my usage of the internet	INST	12	3.00	0.95346	0.27524
	ADL	496	3.10	0.06718	0.04347

N= 556, 1NST = 12, Adult Learners (ADL) = 496, NS = Not significant, $\bar{X}$ = mean, SD = standard deviation.

Discussion

Findings revealed that all the identified ICT facilities available for higher adult education programmes are accepted as being appropriate. Responses of instructors and adult learners on the accessible ICTs are also accepted for application since there is no significant difference in the mean responses indicated on the hypothesis withy p-value higher than the level of significance (P>0.05). This finding is in line with the National policy for information technology (2007) which sees available ICTs as computers, ancillary equipment, software and firmware (hardware) and similar procedures, services including support services and related resources.

This according to the policy includes any equipment or interconnected system or subsystem of equipment used in the automatic acquisition, storage

manipulation, management, movement, control, display, switching, interchange, transmission or reception of data or information. Therefore the types of ICT facilities identified by this study are worthwhile for application to aid the utilization and implementation of adult higher education programmes in Oyo State.

Regarding the extent of utilization of ICT in adult higher education programmes, findings showed that all the tools that aid them to use the ICTS are accepted. This is because the mean responses of instructors and adult learners indicated that they are accepted. Ugwoke (2011) maintains that the utilization of ICT tools will be useful in adult higher education programmes. This, therefore, is in agreement with the responses of instructors and adult learners, indicating that all the tools are appropriate for the application.

Findings in Table 3a revealed that all the strategies adopted for the effective utilization of adult higher education are considered appropriate for the application. Agbonlahor (2006) studies, "utilizing the diffusion innovation theory", propounded by Everest Rogers, explains the conditions that will increase or decrease the likelihood of adoption of a new idea, product or practice in a given country. These conditions can also be likened to the strategies adopted in the utilization and implementation of ICT in adult higher education programmes.

5. Conclusion

Based on the findings of the study, it was evident that the extent of awareness on the availability of ICT facilities will help in the utilization of adult higher education programmes in Oyo State. Also, the tools that aid instructors to use ICTs in adult higher education programmes are accepted as veritable tools for ICT utilization in adult education programmes in Oyo State. Thus, a proper putting in place of all the strategies spelt out for effective use will bring about effective utilization and implementation of ICT in adult higher education programmes in the State.

Further Work

This study was limited to the level of awareness, the extent of utilization, and strategies for the effective use of ICT in higher adult education programmes in Oyo State. However, a study on the availability and accessibility of ICT facilities in Oyo State should be carried out to complement findings of this study to constitute a full appraisal.

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Appendix

ICT Utilization Questionnaire (IUQ)

Section B: General Information
Name of Local Government area ……
Gender Male ☐ Female ☐

Section C:
Instruction: Please tick [√] for the option that expresses your agreement or disagreement with the items listed. Note that SA = Strongly Agree; A = Agree, D = Disagree; SD = Strongly Disagree

S/N	DESCRIPTION	SA	A	D	SD
	AWARENESS ON THE USE OF ICT IN ADULT HIGHER EDUCATION				
1	I do know about the Internet				
2	I am aware of the different uses of the Internet in adult higher education				
3	I do know about electronic journals				
4	I am aware of the existence of virtual libraries				
5	I am aware of the usefulness of discussion groups in adult higher education				
6	I know the usefulness of video conferencing in adult higher education				
	EXTENT OF UTILISATION OF ICT IN ADULT HIGHER EDUCATION				
7	I use the Internet at least twice in a week				
8	I use the Internet at least once in a week				
9	I use the Internet at least once in a month				
10	I use the Internet only when it is necessary				
11	I have never use the Internet				
12	I have the skills to use the Internet all on my own				
13	I use the Internet by myself but with assistance from someone else				
14	I use the Internet through someone as I don't have the skills personally				
15	I use the Internet to browse for materials for my assignments				
16	I use the Internet to browse for materials in adult higher education generally				
17	I use the Internet to browse for electronic journals				
	STRATEGIES FOR EFFECTIVE USE OF ICT IN ADULT HIGHER EDUCATION				
18	Training staff on computer usage would improve their use of the Internet				
19	Organising seminars, workshop and enlightenment campaigns would broaden horizon on the different uses of the Internet thus improving its usage				
20	Organising and encouraging participation in seminars, workshop and enlightenment campaigns would kindle interest in the use of the Internet				
21	Making a central subscription for the restricted Net materials would improve my use of Internet resources in adult higher education				
22	Publishers' lifting of restrictions on Net materials would improve my usage of Internet resources in adult higher education				
23	A centrally arranged programme for acquiring computer systems at a subsidised rate would boost my utilisation of the Internet				
24	Arranging or facilitating soft loans for computer acquisitions would enhance my usage of Internet resources				
25	Providing an Internet backbone infrastructure would reduce the cost of linking to the Net thus boosting my usage of the Internet				
26	Establishing cyber café that allows me to use the Internet at subsidised rate would boost my usage of the Internet				