The Use of Two ICT Tools in Adult Literacy Programmes: Lessons Learned

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Abstract

The study reported in this paper shed light into the lessons learned using two ICT tools in adult literacy programmes. The research design adopted was a *descriptive* method. Twenty (20) participants were purposively selected in advanced literacy class from two adult literacy centres (10 participants each for computer treatment and mobile phone treatment). A *survey instrument was developed and pilot tested and .75 Cronbach's Alpha coefficient was obtained to ascertain the reliability of the instrument.* The findings reveals that adult learners were highly engaged and motivated to participate in literacy programmes during and after been exposed to ICT tools (Weighted Average (WA) = 3.4) and the challenges faced using these ICT tools in adult literacy programmes are; lack of ready access to internet, irregular electricity and high cost of personal computer, internet-enabled phone and the required technical support. Also, the study identified the needed support for effective utilization of these ICT tools for instruction in adult literacy programmes.

Keywords: ICT; Adult Literacy; Challenges; Needed Support; Lessons Learned

1.   Introduction

The advent and increasing availability of information and communication technologies (ICTs) have impacted meaningfully in every sphere of human endeavour and have significantly changed the practices and processes of virtually all forms of activities as people now have better access to information far ever than before (Dighe, 2008; Oliver, 2002). Over one and half decades ago, the ICT revolution has served as an instrument that drives global development in an extraordinary manner. Different factors such as rapid technological progress, infrastructure deployment and continuous fall in prices have brought tremendous growth in ICT access and connectivity to people around the world and has been seen as a tool that will play a significant role in the process of achieving the Sustainable Development Goals as the global community is striving towards a fully digital society (Sanou, 2015).

The impact of ICT is more pronounced in education as it provide the opportunity for learners and teachers to adapt teaching and learning process based on individual needs and eliminate barriers posed by space and time (Mikre, 2011). ICTs serve as a veritable instrument that fast-track the rapid transition from the traditional learning environment characterized by teacher and book-centredness into a learner-centred learning environment (Chhabra, 2014). The traditional teaching and learning method emphasized content and for decades, learning materials have been written around textbooks and teachers have taught through lectures and other learning activities designed to consolidate and rehearse the content but with the emergence of ICT, curricula have started emphasizing capabilities and its particularly more concerned about how the information will be used than with what the information is (Oliver, 2002).

The adoption of ICT in education has a multiplier effect throughout the education system especially in the area of enhancing teaching and learning process and provide learners with a new set of skills which make them globally competitive, facilitate and improve the training of teachers and minimising cost associated with the conventional instruction which ultimately lead to a better overall educational attainment (UNESCO Institute for Statistics, 2012). According to Tinio (2002) as cited in Mikre (2011), ICTs foster the acquisition and easy absorption of information that gives countries especially developing ones the unparalleled prospects to expand their educational systems, formulate and execute better educational policy and more importantly, open access to education especially for those in the rural and remote areas.

Specifically, the use of ICTs for literacy teaching and learning has been a topical issue for experts and policy makers globally as technology continue to be evolving combined with the rising hope of it capability to revolutionize the teaching and learning process in adult literacy programmes. Wagner (2008), as cited in Dighe (2010), opined that ICT can be used to support literacy acquisition in two different ways. Firstly, the capabilities embedded in ICT can be used to enhance the development of the cognitive and basic skills involved in literacy and secondly, it can be used as an instrument to support the development of literacy skills at a distance especially in places where instruction and other required resources for the uptake and effective running of literacy programmes might not be available or not enough.

Empirical evidence has shown that ICT is of immeasurable value to literacy as it constitutes a vibrant force for widening adult learners' access and participation in literacy programmes, facilitate a flexible learning in terms of time and distance and ultimately serve as an indispensable instrument for a lifelong learning process (Jimoyiannis, A., &Gravani, M., 2011). ICT provide a multi-sensory stimulation that allows learners to acquire

knowledge in different dimensions as against the rote form of learning associated with the traditional teaching and learning process and this place emphases on "collaborative work, information exchange, and learning that is active, exploratory and inquiry-based". This, in turn, improves the learner's ability to "engage in critical thinking, informed decision-making, and proactive action in authentic and real word context" (ISTE, 2002 as cited by Ge, X., Ruan, J., & Lu, X. 2012).

Still underscoring the roles ICT can play in promoting literacy, UNESCO Bangkok (2006) highlighted five major roles ICT can play ranging from serving as an instrument for enhancing learning, broadening access to literacy education, creating local content, helping in the professional development of literacy facilitators and to cultivating a learner-friendly environment for literacy teaching and learning. It is believed that ICT makes learning more real-to-life and interesting, eliminate barriers pose by geographical location thereby helping to 'include the excluded'. Again, it is more cost-effective especially in the area of providing appropriate learning contents that are indigenous to learners, expose facilitators to best literacy practices obtained elsewhere in the world and provides access to written materials which ultimately promote the developments of literacy skills.

Andrew (2004) in an attempt to explore the relationship between ICT and Literacy observed that both ICT and literacy are moving variables because it is relatively difficult to control the element in each of it as they exert influence on each other. New literacies give room for the conception of new technologies as well as the birth of new technologies expand the scope of what it means to be literate. He further stated that at different levels of what it means to be literate or illiterate beginning from the era of making marks on the rock to the invention of a stylus and of parchment down to the printing technology and the most recent ICT revolution all depend on the way by which literacy is expressed.

Under such a backdrop, the call for the integration of ICT into adult literacy programmes by experts is on the increase because the use of ICT in adult literacy will help the learners to become information seekers and users, analysers, active learners and more importantly, getting them informed, responsible and contributing their quota towards the development of their community which is the ultimate goal for the acquisition of literacy skills (ISTE, 2002 as cited by Ge, X., Ruan, et. al 2012). This underpinned the assertion of Stromquist (2005) as cited in Education for All Global Monitoring Report 2006 that literacy skills are essential to informed decision-making, individual empowerment, active and passive participation in both local and foreign communities.

Interestingly, the acquisition of literacy skills is one of the basic human needs and it more meaningful when it leads to active participation in cultural and social activities. It is the most important foundation on which people can build a more encompassing and inclusive lifelong learning. It can, therefore, be concluded that life without literacy is life without hope, security and freedom because literacy skills enable people to cope with developing challenges and difficulty in all aspect of human life. Literacy is a fundamental skill for active participation in the present knowledge-driven societies and the absence of such skills shut people out of access to and the use of knowledge even from the most basic information that is vital for daily living (UNESCO Institute for Lifelong Learning 2013; Easton, 2014.)

In spite of the global recognition of the importance of literacy skills to both individual and the nation at large, a substantial number of people are still illiterate. While significant progress has been made towards achieving universal literacy over the past six decades, the poorest and most marginalized set of people have yet to be reached. Many people are inadequately literate because they lack the reading and writing skills that can enable them functional and improve their daily lives. Some lack literacy skills because they have not had the opportunity or the means to attend school and some others because their schooling was cut short or was of poor quality. All these set of people are almost all poor, most are older and a vast majority are from the developing countries mostly from a linguistic and minority groups (Dighe, 2008).

However, with the rapid expansion and growth of ICTs, there is now an exceptional opportunities for achieving a wider educational access and reach with considerable improvement in the quality of education provided. As such, it becomes imperative to explore this new trend in the andragogical shift if reasonable progress in terms of ICT use is to be made in adult literacy programmes (Dighe, 2008; Adeyemo, Adedoja & Adelore 2010). Thus, this study attempt to explore some of the lessons learnt in the course of exposing adult learners to the use of two ICT tools (mobile phone and laptop computer) for teaching and learning process in adult literacy programmes in Ibadan metropolis.

The study is guided by the following research questions:
1.   What is the extent of engagement and motivation to participation in literacy programme by adult learners when exposed to ICT tools?
2.   What are the challenges faced using this ICT tools for learning in the literacy class?
3.   And what are the needed supports for effective utilization of this ICT tools for learning in the literacy class?

2.   Theoretical Framework
This study is hinged on the Constructivist Theory. The theory argues that learners generate knowledge and meaning from an interaction between their experiences and their ideas. Constructivists, such as Dewey (1916),

Vygotsky (1978) and Bruner (1996) believed that learners could learn actively and construct new knowledge based on prior experiences and as a result, instructor's role is to facilitate the learning process (Huang, 2002). According to Merriam, Caffarella, & Baumgartner (2007) as quoted by Collins (2008), constructivism "is a process of constructing meaning; it is how people make sense of their experience".

In the constructivist approach, an emphasis is placed on the development of learners' ability and skills to bring about a solution to their real life problems and as such, there is a merge of problem-solving and free discovery skills. In essence, the process of knowledge acquisition is dynamic and built around the process of discovery (Dewey, 1916 as cited by Huang, 2002). The major thrust of constructivism is centered on learning, as such, it advocates a learner-centred learning environment rather that teacher-centred environment. In a learner-centred learning environment, learners are at the center of the learning experience and this can be aided in a multiplicity of ways. It has been observed that the primary key to constructing new knowledge is by engaging learners in an experienced-based learning and based on this, developing a learning experience that has the capacity to yield maximum benefits to learners requires the facilitator to be cognizant of individual learner's needs (Collins, 2008).

With the use of ICT tools for learning, learners are encouraged to actively construct knowledge because it positions them in a realistic context as well as offering access to supporting tools (Naismith, Lonsdale, Vavoula & Sharples, 2004; Craig & Van Lom, unknown). The advantage of constructivism over other learning theories in the implementation of ICT for learning is that it emphasizes independent learning style and learners tend to learn more when they explore and experiment and whatever knowledge constructed can be used in the real world settings, as such, the learning acquired relatively becomes permanent (Craig & Van Lom, unknown). Also, this theory seems to take into consideration the characteristics of adult learners who are believed to be self-directed, having a wealth of experience, problem-centred in their learning and are intrinsically motivated and these characteristics provide a unique base on which they can construct new meaning (Garmston,1996; Spigner-Littles & Anderson, 1999 as cited by Collins, 2008).

3.   Methodology

The research design adopted for this study was a descriptive design involving a survey developed and adopted to explore various lessons learnt using two ICT tools (laptop computer and mobile phone) in adult literacy programmes in Ibadan metropolis. The survey was developed by the researchers and got reviewed and then revised by experts in the field of Adult Education and Educational Technologist of the University of Ibadan for content validity. A pilot test of the survey instrument was done in a different adult literacy programme and .75 Cronbach's Alpha coefficient was obtained to ascertain the reliability of the instrument. The questionnaire was designed having two sections. Section A was on the demographic characteristics of the participant while section B was structured on a 4-point rating scale of "Strongly Agree" (SA), "Agree" (A), "Disagree" (D), and "Strongly Disagree" (SD).

Non-probability purposive sampling technique were used in selecting 20 participants (10 each) in advanced literacy class from a model literacy centre of the University of Ibadan and Oyo State Agency for Adult and Non-formal Education (Oyo ANFE) organized literacy centre located at Eleyele Police Barrack being the participants that form the population of mobile phone and laptop computer mediated learning intervention programme.

The intervention programme was organized to expose adult learners to technology mediated learning that can serve as a motivational factor to better participation in adult literacy programmes considering the inherent problems associated with the traditional method of learning in the literacy programme which often lead to high drop rate due to rigid class schedules. In order to allow learners to learn at their own convenience anywhere and anytime using ICT tools, the intervention was initiated. The intervention programme made use of Social Studies learning content based on the curriculum of advanced literacy class according to the scheme of Oyo State Adult and Non-Formal Education (ANFE) and was delivered via a Mobile Learning Platform (MLP) hosted on www.cltdpa.com.

After the intervention, the questionnaire was self-administered to the respondents. The data collected was analyzed using descriptive statistics for the research questions.

4.   Findings

Research Question 1: What is the extent of engagement and motivation to participation in literacy programme by adult learners when exposed to ICT tools?

Table 1: Extent of Learners Engagement and Motivation to Participation

S/N	Items	SA	A	D	SD	Mean	Std. D
1	ICTs provide efficient access to course content anytime and anyplace where connectivity is available	13 (65.0)	7 (35.0)	- (0.0)	- (0.0)	3.65	.49
2	ICT allow learners to work independently at their own pace	10 (50.0)	9 (45.0)	1 (5.0)	- (0.0)	3.45	.60
3	It provide learners access to content in manageable chunks	8 (40)	11 (55.0)	- (0.0)	- (0.0)	3.25	.91
4	It engage learners in assignments related to course objectives	7 (35.0)	11 (55.0)	2 (10.0)	- (0.0)	3.25	.64
5	It provide tools for instructors to easily track student work and grades	11 (55.0)	9 (45.0)	- (0.0)	- (0.0)	3.55	.51
6	It allow students to easily access required instructional resources	10 (50.0)	9 (45.0)	- (0.0)	- (0.0)	3.35	.93
7	Allow student to easily access grades on assignments	7 (35.0)	11 (55.0)	1 (5.0)	1 (5.0)	3.2	.76
8	ICT encourages the use of independent learning strategy in the literacy programme	8 (40.0)	11 (55.0)	1 (5.0)	- (0.0)	3.35	.59
9	Learning objectives of each module are quite clear to the learners	12 (60.0)	8 (40.0)	- (0.0)	- (0.0)	3.6	.50
10	Content is organized in an appropriate sequence and in small modules for flexible learning	8 (40.0)	11 (55.0)	1 (5.0)	- (0.0)	3.35	.59
	Weighted Average	**3.4 (85%)**					

Table 1 reveals that adult learners have a high degree of engagement and motivation to participation in literacy programme during and after been exposed to ICT instructional tools (Weighted Average (WA) = 3.4). for instance, the learners agreed with the following items: that ICTs provide efficient access to course content anytime and anyplace where connectivity is available (mean=3.65); that the tools allow learners to work independently at their own pace (mean= 3.45); that The use of ICT helps them to link knowledge e.g. association (mean=3.45); that ICT provide tools for instructors to easily track student work and grades (mean=3.55) and that Learning objectives of each module are quite clear to the learners (mean=3.6). It can therefore be concluded that the learners were really engaged and motivated to participate in the literacy during and after been exposed to ICT instructional tools.

Research Question 2: What are the challenges faced using this ICT tools for learning in the literacy class?

Table 2: Challenges Faced Using ICT Tools

S/N	Items	SA	A	D	SD	Mean	Std. D
1	The use of ICT tools in the literacy class consumes time more than traditional method	- (0.0)	- (0.0)	10 (50.0)	5 (25.0)	2.0	.73
2	Lack of ready access to internet	3 (15.0)	12 (60.0)	3 (15.0)	1 (5.0)	2.75	.97
3	Irregular electricity hampering the utilization of ICT tools for learning	6 (30.0)	8 (40.0)	6 (30.0)	- (0.0)	3.0	.79
4	The high cost of personal computer, internet-enabled phone and the required technical support	8 (40.0)	9 (45.0)	3 (30.0)	- (0.0)	3.25	.72
5	Characters are too tiny to read on the screen	2 (10.0)	5 (25.0)	8 (40.0)	5 (25.0)	2.2	.95

Table 2 shows that adult learners tend to disagree with item 1 and 5 with the mean score of 2.0 and 2.2 respectively. Therefore, the two items can not been seen as part of the challenges faced when exposed to ICT Instructional tools. But they agreed with item 2, 3, 4 with the mean score of 2.75, 3.0 and 3.25 respectively as major challenges faced during the course of exposure to the ICT instructional tools for learning in the literacy programme.

Research Question 3: What are the needed supports for effective utilization of this ICT tools for learning in adult literacy classes?

Table 3: Needed Support

S/N	Items	SA	A	D	SD	Mean	Std. D
1	Formulation and implementation of appropriate policies favouring the use of ICT for learning in literacy classes	10 (50.0)	10 (50.0)	- (0.0)	- (0.0)	3.5	.51
2	Faster internet connectivity/ improved bandwidth	8 (40.0)	10 (50.0)	1 (5.0)	- (0.0)	3.2	.95
3	Appropriate content in appropriate languages	8 (40.0)	11 (55.0)	- (0.0)	- (0.0)	3.4	.94
4	Availability of reliable electricity	10 (50.0)	7 (35.0)	3 (15.0)	- (0.0)	3.35	.75
5	Lower prices of connectivity	10 (50.0)	6 (30.0)	3 (15.0)	1 (5.0)	3.25	.91
6	Provision of technical support for the use of ICT for learning in the literacy classes	12 (60)	7 (35.0)	1 (5.0)	- (0.0)	3.55	.60
7	Training of facilitators in the appropriate use of ICT to enhance teaching and learning process in the literacy centre	10 (50.0)	8 (40.0)	1 (5.0)	1 (5.0)	3.35	.81

Table 3 reveals that all the adult learners involved in the study unanimously agreed that: formulation and implementation of appropriate policies favouring the use of ICT for learning in literacy classes; faster internet connectivity/ improved bandwidth; appropriate content in appropriate languages; Availability of reliable electricity; Lower prices of connectivity; Provision of technical support for the use of ICT for learning in the literacy classes and Training of facilitators in the appropriate use of ICT to enhance teaching and learning process in the literacy centres are all needed for effective utilization of ICT for instructions in adult literacy programmes.

5.   Discussion

The study reveals that adult learners have a higher degree of engagement and motivation to participation in literacy programmes during and after exposure to ICT tools (Weighted Average (WA) = 3.4). This became evident from the fact that the use of these ICT tools gave the learners the opportunity to access their course content anytime and anyplace they desire and enables them to move at their own space. It also serves as a motivating factor as they can learn from the comfort of their homes without impairing on the competing demands on their time. During the course of the research, the learners were encouraged to access the content and at the end of each module, they have a quiz that tests their knowledge on what they have learnt. This strategy really engaged them as they go over the content times without number in order to have a better grasp of the subject content and to obtain a reasonable score in the quiz and upon getting it, they are motivated to move to the next module with a high sense of achievement. They even discuss the marks obtained in each module with their peers and this serves as a motivating factor for others to aspire to get a better score in their own quiz. They come to the class with a load of questions bothering on their experiences using the tools for learning and how to perform other task using the tools. At the initial level of the research, few people signed in to be part of the work but as the work progresses, there was an influx of participant to the extent that the number participants available were more than the needed number of the participant for the study most especially, the mobile phone group. All these revelations affirm the usefulness of ICTs as a veritable instrument that can elicit and sustain adult learners' interest in literacy programmes and thus reduce the level of drop-out in the programme because adult learners have the potentials to garner more effort and stay engaged in activities they find interesting especially providing them with choice about what to do and how to do them increase their intrinsic motivation. Also, as pointed out by Lesgold and Welch-Ross (2012), when adults are enrolled in a literacy programme and develop and maintain a positive attitude about the activities they engage in, they are more likely to persist with learning. According to British Educational Communications and Technology Agency (Becta, 2003), "ICT can stimulate, motivate and spark students' appetites for learning and helps to create a culture of success. This can be demonstrated in their increased commitment to the learning task, their enhanced enjoyment, interest and sense of achievement in learning when using ICT, and their enhanced self-esteem".

In the course of the research, the major challenges faced using the ICT tools for learning are a lack of ready access to the internet, irregular electricity hampering the utilization of the ICT tools and the high cost of a personal computer, internet-enabled phone and the required technical support for their use in adult literacy programmes. It was observed that part of what serve as a major issue from the beginning of this research to the end was the issue of internet access. Most of the participants do not know how to access the internet on their computer and mobile phone even for some that knows, the issue of cost of subscription and who bears the cost was another factor considering the poor economic condition of the participants. Also, electricity was another

issue as most participants complained about not having electricity to charge their gadget and this limits their ability to make use of the tools to learn. And lastly, the cost of acquiring an internet-enabled phone, computer and the required technical support needed to fully use these tools for learning in adult literacy programmes are beyond the reach of the participants as the financial capability to own and the technical know-how to fully utilize these tools is not there. All these challenges pose a threat to the effective utilization of ICT to mediate teaching and learning process in adult literacy programmes.

Lastly, the study identified certain needed supports for effective utilization of these ICT tools for instruction in adult literacy programmes. These include: formulation and implementation of appropriate policies favouring the use of ICT for learning in literacy classes; faster internet connectivity/ improved bandwidth; appropriate content in appropriate languages; availability of reliable electricity; lower prices of connectivity; provision of technical support for the use of ICT for learning in the literacy classes; training of facilitators in the appropriate use of ICT to enhance teaching and learning process in the literacy centres. All these identified support when been put into place, will go a long way in making the adoption of ICT into adult literacy teaching and learning more rewarding and this will equally help in achieving Nigeria's ICT policy which aims at ensuring that ICT resources are readily available to promote efficient national development; integrating ICT into the mainstream of education and training; developing human capital with emphasis on creating and supporting a knowledge-based society among others (Agyeman 2007)

6.   Conclusion

This paper has successfully narrated various lessons learnt in the course of using two ICT tools (computer and mobile phone) in selected adult literacy programmes in Ibadan Metropolis. The study has shown beyond doubt that the use of ICT in adult literacy programmes can serve as an instrument that can better engage and motivate adult learners to participate and sustain their interest in the programme thus reducing the drop-out rate often witnessed in adult literacy programmes. However, In spite of the numerous benefits of using ICT to mediate the teaching and learning process in adult literacy programmes, there are still some attendant challenges as witnessed by the participants. While some had an issue with internet access, some others complained of electricity and the financial burden it places on them. Importantly, the study identified the needed support that can enhance the effective use of these tools for instruction in adult literacy programmes.

7.   Recommendation

Based on the findings, the following recommendations were made:
1. Literacy organisers and facilitators should endeavour to incorporate and prioritise the use of ICT to mediate teaching and learning process as ICT use have the potentials to elicit and sustain adult learners' interest in literacy programmes and thus reduce the level of drop-out usually witnessed in adult literacy programme
2. Literacy practitioners, facilitators, and organisers should work with every sense of purpose to reduce the attendant challenges using these ICT tools in adult literacy programmes
3. Further studies on the efficacy of ICTs use in adult literacy programmes should have more samples for better generalisation

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