INTEGRATING INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) INTO ADULT AND NON-FORMAL EDUCATION FOR SUSTAINABLE DEVELOPMENT

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Abstract

Campaign for adult literacy has been a serious business in Nigeria. It is one of the efforts of federal government to wipe away illiteracy and poverty. Some of the problems militating against this lofty goal are ill-equipped study centres, late delivery or inadequate study materials, absence of motivational factors and poorly planned time spent at the study centres. This paper examines these challenges with a view to offering suggestions of alternative solutions through the use of Information and Communication Technology.

There is no gainsaying that education brings about development. Therefore, for any community to be developed, it must ensure that all her citizens are educated. Education is a major item in any national development agenda, and, Nigeria like other developing nations in the world needs education for development. However, it must be stated that development is not affected only by formal education but adult and non-formal or out of school education also has a significant impact on the development of a nation.

Courtney (1989) defined Adult Education is an intervention into the ordinary business of life--an intervention whose immediate goal is change, in knowledge or in competence. An adult educator is one, essentially, who is skilled at making such interventions.

Coombs and Ahmed (1974) defined non-formal education as "any organized, systematic, educational activity carried on outside the framework of the formal system to provide selected types of learning to particular subgroups in the population, adults as well as children".

The various definitions of adult and non-formal education portray it as a response to the educational needs of men and women. They tend to emphasize the whole range of part time educational provision for persons whose social and economic responsibilities give them adult status within a community. Adult and non-formal education is part of the wider process of life long learning, and includes fundamental or remedial, agricultural extension, co-operative education, skill training, vocational, political, recreative education and community development in general.

Historical Development of Adult Education in Nigeria

According Ngwu, (2006) quoted in Omolewa (1981), adult education in the modern sense could be said to have started in Nigeria in 1845 in Badagry with a literacy class for the youth and adults. The interest of colonial government on adult education was primarily to enable adults read government instructions with a view to appreciating the danger of breaking the rules. Adult education activities got a boost during the Second World War with the aim of mobilizing the needed support by the colonial government for Nigeria to contribute to the war effort. The development traits of adult education in Nigeria continued through the periods such as 1943 Advisory Committee on Education in Africa Report titled "Mass Education in African Society", the appointment of a pioneer mass education officer, A. I. Carpenter in 1946; the subsequent launching of mass literacy programme in the same year 1946; the launching of the campaign against illiteracy (Yaki - da - jahilci) in 1956; 1982 launching of National mass literacy campaign.

Challenges with Adult and Non-Formal Education.

Non-Provision and Late Delivery of Course Materials Not all the public institution produce regularly course materials for participants. And in some cases materials are not supplied promptly to learners. Yet, it is clear that these course materials are the central learning implements.

Non Use of Multi-Media For meaningful vocational and science subjects, the use of multimedia equipment is important. This limits their curriculum to liberal arts subjects and thus reduces their contribution to the development of technical manpower.

Ill-Equipped Study Centres There is hardly any studies centre that is well stocked with relevant and current books.

Funding Chronic under-funding that made it impossible for the rehabilitation of infrastructures, late payment and under payment of allowances for resource persons also affected the effectiveness and participation in Adult and Non-formal Education.

Information and Communication Technology (ICT)

Information and Communication Technologies (ICT) can be defined as electronic means of capturing, processing, storing and disseminating information. It is the convergence of micro electronics, computing and telecommunications which has become a global phenomenon of great importance and impact in all spheres such as labour, productivity, trade, commerce and others (Sesan, 2001). It is a technology that uses computers, software, peripherals and internet infrastructure required to support information processing and communication functions (UNDP, 2001).

Enhancing Adult and Non-Formal Education through the Use of Information and Communication Technology

Early Adult and Non-Formal Education projects used print, radio, television, audiotape, videotape, and satellite transmission as an efficient and cost-effective way to provide illiterate adults and out-of-school learners with educational opportunities. Further innovations in ICTs like Very Small Aperture Terminal (VSAT) satellite communications, the Internet, and CD-ROMs are helping to create new innovative learning tools that will profoundly change the way Adult and Non-Formal Education is delivered.

Many nations have developed e-learning and m-learning strategies, and are rapidly expanding the use and knowledge of ICT in educational activities by incorporating ICT into lesson plans, teaching methodologies and curricula, and devoting funds to procuring ICT-related resources.
The following methods suggest ways of using Information and Communication Technology (ICT) to enhance Adult and Non-Formal Education delivery.

Skyping

Skype Technologies has offered free video and phone conferencing service since 2003, though at the time, many schools weren't equipped with the technological hardware, like webcams, and high-speed connectivity necessary for video correspondence. But with improving technology infrastructures, modifications to the Skype software and an increasing push for teachers to find new ways to give their students educational experiences, educators appear to have turned more to Skype later in the decade. In addition to combating logistical hurdles, educators say targeted use of Skype can bring pedagogical benefits, as it makes students conduct research necessary for a video presentation more seriously, encourages instructors to focus on broader concepts instead of individual problems because tracing and fixing student work directly is more difficult, or exposes students and teachers to real-time technology problem-solving.

Blogging

A blog is a personal *journal* published on the *World Wide Web* consisting of discrete entries ("posts") typically displayed in reverse chronological order so the most recent post appears first. From an educational perspective the availability and ease of use of blogging software makes creating blogs a viable classroom activity and a means for teachers to communicate with other teachers.

Social Media Network

Social media includes web-based and mobile based technologies which are used to turn communication into interactive dialogue between organizations, communities, and individuals. Kaplan and Haenlein (2010) defined social media as "a group of Internet-based applications that build on the ideological and technological foundations of *Web 2.0*, and that allows the creation and exchange of *user-generated content."* Social media is ubiquitously accessible and enabled by scalable communication techniques. Social Media becomes more popular among older and younger generations; sites like *Facebook* and *Youtube* gradually undermine the traditionally authoritative voices of news media. Social Media could be used in the following ways**:** Integrating real-world applications into teaching, networking with colleagues, collaborative learning, cross-cultural communication and language learning, assessments, distance learning, parent communication, course assignments, community outreach and professional development.

Flexible Skills Development

Blended learning refers to a mixing of different *learning* environments. It combines traditional face-to-face classroom methods with more modern *computer-mediated activities*. According to its proponents, the strategy creates a more integrated approach for both instructors and learners. Formerly, technology-based materials played a supporting role to face-to-face instruction. Through a blended learning approach, technology will be more important.

The concept of flexibility in the delivery pace of educational programmes is not new (Morre & Kearsley, 1996). Use of the technology, however, has extended the scope of this activity and whereas previously off-campus delivery was an option for students who were unable to attend campuses, today, and many more students are able to make this choice through technology-facilitated learning settings (Ron Oliver, 2002).

In concert with geographical flexibility, technology-facilitated educational programs also remove many of the temporal constraints that face learners with special needs (Morre & 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).

Mobile Learning or M-learning

The term M-Learning, or "mobile learning", has different meanings for different communities. Although related to *e-learning* and *distance education*, it is distinct in its focus on learning across contexts and learning with *mobile devices*. One definition of mobile learning is: any sort of learning that happens when the learner is not at a fixed, predetermined location, or learning that happens when the learner takes advantage of the learning opportunities offered by mobile technologies (Guidelines for learning). In other words mobile learning decreases limitation of learning location with the mobility of general portable devices (*www.wikipedia.com*).

M-learning is convenient in that it is accessible from virtually anywhere. M-Learning, like other forms of E-learning, is also collaborative; sharing is almost instantaneous among everyone using the same content, which leads to the reception of instant feedback and tips.

Podcasting

Podcasting consists of listening to audio recordings of lectures, and can be used to review live lectures (*Clark & Westcott, 2007)* and to provide opportunities for students to rehearse oral presentations. Podcasts may also provide supplemental information to enhance traditional lectures (*McGarr, 2009* and *Steven & Teasley, 2009).*

Psychological research suggests that university students who download podcast lectures achieve substantially higher examination results than those who attend the lecture in person, but only in cases in which students *take notes (Callaway & Ewen 2009)*. Podcasts may be delivered using *syndication*, although it should be noted that this method of delivery is not always easily adopted (*Lee, Miller & Newnham 2009).*

E-Learning

E-learning comprises all forms of electronically supported *learning* and *teaching.* The *information* and *communication systems*, whether *networked learning* or not, serve as specific media to implement the learning process (Tavangarian, Leypold, Nölting, Röser, 2004). The term will still most likely be utilized to reference out-of-classroom and in-classroom educational experiences via technology, even as advances continue in regard to devices and curriculum.

E-learning is essentially the computer and network-enabled transfer of skills and knowledge. E-learning applications and processes include Web-based learning, computer-based learning, *virtual education* opportunities and digital collaboration. Content is delivered via the Internet, intranet/extranet, audio or video tape, satellite TV, and CD-ROM. It can be self-paced or instructor-led and includes media in the form of text, image, animation, streaming video and audio.

Advantages of Using ICT in Adult and Non-Formal Education

Ogedegbe and Oyaniyi (2010) stated that there are so many reasons for integration of ICT in Adult and Non-Formal Education apart from the fact that there is need to embrace new technology. Firstly, majority of Nigerians live below poverty level thereby depriving them of attending urban based institutions and thus remain deprived of education despite their superior merit. Secondly, those who joined workforce without completing their education due to family commitments are unable to combine their work with studies and very few of them who have strong desire for education could not do so because of the limited offer in the traditional institution of learning. Thirdly, the tradition of childhood, early marriage and religious beliefs in the country deprive the majority of female population from education. Also, physical disabilities, remoteness of localities, exorbitant tuition fees in most privately owned institutions are some of the impediments that deprive majority of Nigerians of education. ICT-enabled learning provides avenue for higher education for such a vast under-privileged population (Ogechukwu and Osuagwu, 2008). Some of the advantages provided by ICT enabled education include:

- provide a wider access to education
- ensure equity and equality of opportunities in education
- enhance education for all and live-long learning
- provide the entrenchment of global learning culture
- provide flexible, but qualitative education
- reduce the cost, inconveniences, hassles of and access to education and its delivery
- enhance more access to education
- it provide student courses round the clock i.e. 7 days, a week and 24 hours a day, which further attracts working class students and individual.

Limitation to Infusion of ICT in Adult and Non-Formal Education.

Integration of ICT is still a dream in the Nigeria educational sector because of the poor ICT infrastructure and other socio-economic reasons. Ogedegbe and Oyaniyi (2010) stated some of the impediments to its full integration as follows:

Digital Divide This is the inequality of access to the technology by the students. The costs of personal computer and laptop are still very high in Nigeria.

Literacy and Local Content Barrier Interfaces have been developed using icons,

graphics, touch screens and voice recognition for the illiterate and neo-literate. Information available through ICTs is mostly in English, which the majority of developing countries rural communities cannot read. There is a marked shortage of relevant materials in local languages that respond to their needs.

Technology Infrastructure Public access to ICT is available to various extents in most of the larger urban centers in all countries through cyber cafés, but access is largely nonexistent in rural areas. Lack of infrastructure (electricity, telephone connections and hardware) is still the major challenge for introducing ICT in rural areas..

ICT Policy and Implementation The absence of policy at the ministerial level has not helped coordinate ICT projects and programmes being carried out separately by various agencies operating in the education sector, and will lead to resource wastage and duplication.

Gender Equity Traditional daily household demands still take priority over girls' education especially in the Northern states.

Maintenance and Technical Support There is few technical staff to maintain the system; this makes it very expensive for few students that have PCs to maintain them when a technical problem is noticed.

Cost and Sustainability

The costs associated with setting up ICT infrastructure are forcing many governments to make difficult choices. For most national governments, the priority is primary education. Ironically, the pressure to achieve Education for all (EFA) goals could be forcing a number of national Governments to sideline the education of out-of-school youth and non-literate adults. Similarly, the pressure to produce the necessary human capital for a "knowledge-based" economy is resulting in greater investments being made in formal higher education systems.

Further, meeting the ongoing costs of maintaining equipment, staff training, connectivity, content materials acquisition, and development and consumables are major challenges. Donor funded projects have failed to run after the funding period ends as community funds are not mobilized for the project.

Conclusion

In conclusion, ICT can be of great use in helping to achieve the goals of Education for All (EFA) and lifelong learning. Its focus should be on reducing digital divide between rural and urban areas and engendering community development and empowerment. ICT tools are very powerful and can go a long way in addressing certain issues like adult illiteracy, education for school dropouts and women empowerment.

In order to archive success of ICT enabled Adult and Non-Formal Education, Community involvement, formulation of a comprehensive policy, sharing of best practices among communities and countries, creating localized content, and constant technology upgradation/responsiveness should be ensured.

Recommendation

Having considered the impediments to integration of ICT into Adult and Non-Formal Education, the following recommendations are made:

- Government should endeavour to allocate a substantial part of its yearly budget on Adult and Non-Formal Education
- The use of NIGCOMSAT-1 to connect schools to the internet will be of advantage since it is owned by Nigerian Government.
- Agreement should be made with major stakeholders like Microsoft, CISCO, and others to spread the knowledge and usage of ICT including the production of Nigerian language versions of Microsoft products and other software.
- Policies must take into account ongoing capacity building of trainers/teachers in enabling them to effectively use ICT in Adult and Non-Formal Education. Teachers need to consciously redesign learning environments so that students can transfer their newly gained ICT skills to other applications that can be used in an ICT rich environment.

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