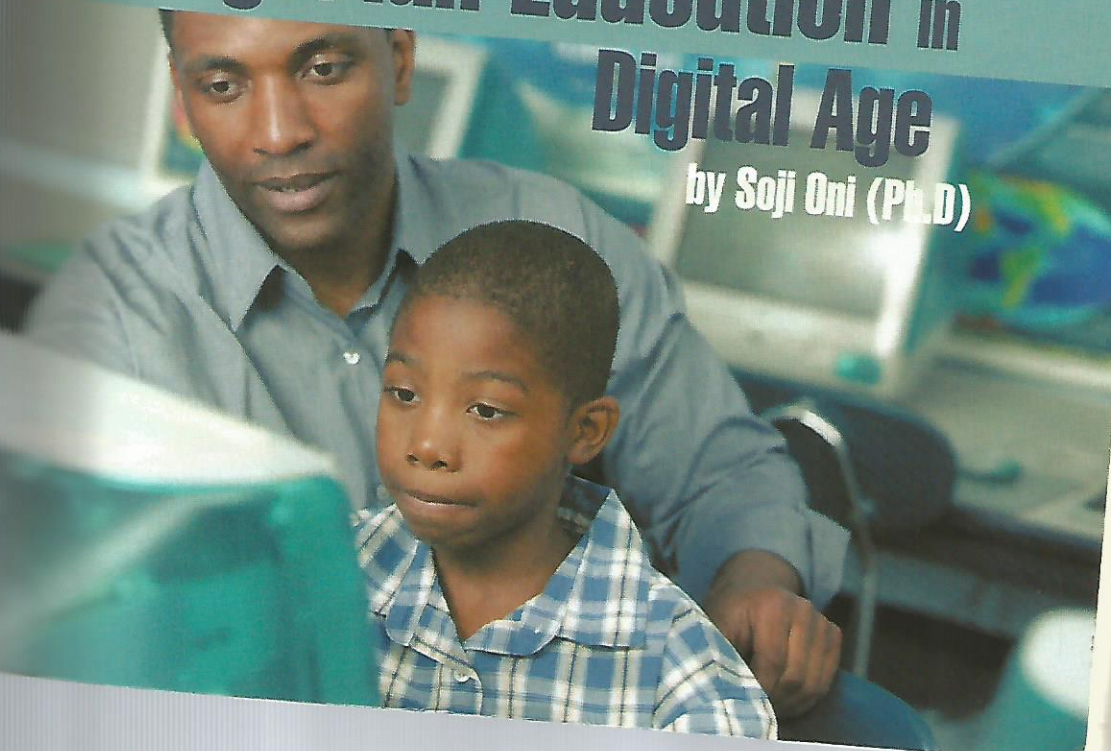




Revitalizing
Nigerian Education in
Digital Age

by Soji Oni (Ph.D)



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Effect of the Digital Age on Adult Education Practice in Nigeria

T. V. Bakare

Introduction

The current digital age, also known as the computer or information age, is characterised by people's ability to use electronic technology to generate, record, process, receive, transmit, and display information. The digital age encourages people to have instant access to unprecedented and unlimited amount of information and to be able to manipulate and transfer it freely to ultimately create an information or knowledge society. UNESCO (2005) posited that knowledge societies are about capabilities to "identify, produce, process, transform, disseminate and use information to build and apply knowledge for human development . . ." It is one thing to have access to the tools though, and another to be able to use them meaningfully to achieve development. The world has moved from the use of analog to digital tools, and thus the digital age is characterised by the widespread use of computers and related technology. Digital age largely deals with the movement of information and is concerned with the simplification of the way that information is exchanged and disseminated especially for educational purposes.

The rapid changes in the world's constitution, new technology, information overload, better awareness, and a changing society have affected the type, volume, quality, quantity, and speed of information. The "shelf life" (duration of relevance) of things have been drastically reduced and the environment, demography, physiology, and every aspect of human life is haunted by obsolescence and anxiety over continued relevance and so on. There is therefore the need to be constantly informed, and this is why there is an information age, creating a knowledge society in a shrinking world.

Things are changing, and there is always new knowledge to help to adapt to the new challenges so that they can be better managed.

Adult education is any and all types of education that makes the adult function, fit in, and remain relevant in his environment. Houle (1996: 41) described adult education as the process by which men and women, alone, in groups or institutions seek to improve themselves or their society by increasing their skill, knowledge, or sensitiveness. The flow of information is central to this process. Adult education leads to sustainable development for the nation which ensures that the development of the present generation is achieved in a manner that will not adversely affect the future generation. It is education given to mature and responsible individuals to fit them for the world of work and make them productive members of their family and society. This is a necessity in the digital age as technology is changing so fast that it is imperative for the learning adult to continue to adapt. Adult education is that which goes beyond compulsory schooling. It is largely non-formal learning and conducted out of school, although may still be institutionalised and structured. In adult education, communication is vital, but the peculiar nature of its conduct makes it even more imperative to utilise the innovative and different means of using information. The adult learner is typically one who has a full-time job, has several social obligations (like family and community), may be located far from the institution and so has to be more creative in making time for learning to keep up. There are different types of adult education: Literacy, Vocational, Leisure, Foundation and Continuing Education, and Workers Education (Bakare, 1999), and they all use technology differently.

The digital age has deeply affected and revolutionised learning generally but adult education in particular. Digital technology has changed, not only the way we learn, but also *what, when, how, where* we learn, *who* we learn from, and *whose* truth we accept. The new frontier of technology has unleashed a wealth of information that was hitherto unavailable before the digital age and in a constantly shrinking world. In addition, the declining cost of digital technology has also made it more accessible to a multitude of people all around the world and throughout life. The possibility of linking these available resources worldwide boggles the mind as it will create a robust and remarkably rich medium for learning. Thus for adult education, a new paradigm of digitally enriched mediated learning has emerged through social networking, Virtual Library, etc. This is what the digital age has to offer apart from integrating the learner into the process.

The new technology has transformed the speed, means and levels of access to education for the adult learner. It has proved to be not only useful in widening the access to education but also in supporting a diversity of educational provision, leading to better educational participation and even better outcomes of adult learning (Selwyn and Furlong, 2006).

Those who are facilitating adult learning are also involved in the incorporation of twenty-first-century technologies as it becomes more imperative for the adult educator to reformulate teaching strategies and materials. This chapter therefore explores the effect of the digital age on adult education practice in Nigeria. It reviews previous practice as well as problems of the digital age and ends with a proposition of what is expected in adult education practice in the future of the digital age in Nigeria.

Types of Digital Tools

Many digital age tools like the digital telephone, camera, and computer, among others, are used to support different media techniques and can all be used to aid learning. Many of these technological tools are used to collect information, analyze, store, manage, display, or exchange qualitative and quantitative data. Popular examples of the digital age tools that facilitate the removal of distance between teacher and learner in adult education include the following:

Compact Discs (CDs): The different types (CD-ROM, re-writable, VCD, etc.) are used in storing information. They were originally made to record and play back music but now have other functions and can be used to store and transfer data. The CD is compact and cheap enough, and it is used in most distance education institutions to conduct curricular activities. They play an invaluable part in linking teacher and learner who can use them to exchange assignments and other pertinent information for learning.

Computer: It is one of the single most important inventions of the twentieth century, ranging from the desktop, laptop, palmtop to computer-embedded products. It is a programmable machine that has revolutionised the way we communicate and learn. It is capable of input, process, and output functions, taking in data or information, processing, storing, and displaying the output in various forms, or it can be collected by another external storage device. It is central to the Information Communication Technology (ICT). The computer started as analog but the digital age

has birthed more innovative computers that are more compact, efficient, effective, and with bigger memories.

Electronic Book: It is one of the newest inventions that have helped simplify the educational process. The electronic or digital book is a book-length publication in digital form that can be read on the computer and other electronic devices, the latest example of which is the *Kindle*. This allows the reader to subscribe or download full-length books from various sources and is a strong arm of the Virtual Library.

Flash drive or memory stick: This has also greatly impacted the way information is stored, transported, and transmitted. It is one of the most compact ways (apart from the Internet) of transferring information and can be manipulated in several ways to be even more effective. It is a mode of digital distribution that has overtaken other devices like the CD, diskette, etc.

The interactive media: This is the commonest mode of communication, culminating in the social media and games. At the heart of these is the *Internet*. This is about the local and global system of interconnected computer networks using the Internet Protocol Suite (IPS) to link users worldwide for purposes of business, education, entertainment, government, public, and private through the use of optical electronics and wireless networking technologies. The Internet is now used for instant messaging, social network, financial services, and other business, and it is believed that up to a third of the world's population now use the Internet services. Most digital technologies are networkable, interactive, and can be manipulated. Examples are the Internet, Websites, computer multimedia, and CD-ROMs among others. The Internet has opened up a new vista for learning with its almost limitless reach for information. Other new media used for learning include television, e-books, and films or a combination. The social media is currently one of the single most unifying technologies available. It is used for a multitude of things—learning, commerce, counselling, and generally sharing ideas and ensuring that information is shifted around in a manner that truly makes the world a global village. Things that have proved difficult or impossible to do before are now easily achieved through computer interaction. The computer transcends classroom applications alone and the social network (like Facebook and Twitter) also constitute a rich source of information and education.

Radio and the television: They are popularly used for mass education to entertain, educate, and inform. They can also be made interactive for instant feedback.

The telephone: This has changed over the years from the analog and rotary of old to modernised versions from hands-free cell phone to the latest *Smart-Phones* that can perform a lot of complex functions simultaneously. The smart phone, apart from its general computing capabilities, can also do SMS, text messaging, e-mail, and allows for Internet access, Bluetooth, games, and photography. Generally, the mobile phone receives and makes calls over a radio link that allows it to be mobile by connecting it to a cellular network. Apart from using it to gather and disseminate information and compute, it can also perform several other useful functions.

Virtual or e-library: This is a library that fully functions in cyberspace. It is an improvement on the traditional book library to give more opportunity to access numerous books online, and many traditional book-based libraries are trying to update by going virtual.

The use of these digital tools help learning to take place anywhere and at any time. All these devices are available in Nigeria, but the more sophisticated and expensive new gadgets like the I-phone and I-pad are beyond the reach of many financially and are used only by a few elite. They are all possible resources for conducting adult education in Nigeria but only some of them are used sparingly for this purpose; mainly because of the problems of affordability as well as the epileptic supply of electricity. However, the compact disc, radio, television, and the computer are more popularly used for educational purposes. The television and radio are usually used to disseminate information to a larger audience and remain a viable method of adult education, especially the radio, for its wider appeal, reach, and affordability; it is cheap and can be used in remote locations without electricity. The computer is the most coveted mode of education, but many can still not afford the desktop or laptop and have not had exposure and therefore lack the technical skill required for manipulating the computer. The mobile phone is also another compact device that is more generally used to circulate information and for other educational purposes.

Methods Used in Adult Education Practice in Nigeria before the Digital Age

Before technologies became popular as a support for mainstream education, the traditional mode of teaching and learning was face-to-face with physical contact between teacher and learner, using mostly the lecture method and the printed book. Most programmes in adult education in Nigeria were conducted largely in the Formal mode instead of the more desirable Non-Formal method. Also, classroom situations dominated the types of adult education programmes run, and conventional education was based on authoritative, top-down, standardised system, but the application of new technologies have enabled more interactive and collaborative learning which is not featured in traditional learning institutions. New technology has dramatically encouraged self-learning, a key cornerstone in adult education, creating new learning possibilities. Adult education probably lags behind in the adoption of technology generally. This could be partially attributable to the natural human fear of change, the cost implications as well as accessibility to the necessary tools. In Nigeria, technological skills are low (Alabi, 2004) even at the university level. Apart from the few who registered for computer sciences, expertise in the field is still largely acquired in a solitary and self-directed manner by most, except for those who attend computer institutes to learn.

The Present Status of Adult Education in Nigeria

The digital age has revolutionised the conduct of adult education. The typical adult classroom now has at its disposal a plethora of digital tools to use in the conduct of adult education. With the advent of the digital media and better exposure, the popularity of alternative means of education through distance learning, self-education, and others have all boomed. These types of education demand different modes of pedagogy because of the separation between teacher and learner; the computer and other digital media have thus become very familiar in the educational system. Adult education in Nigeria is conducted through workers education, literacy, continuing education, foundation, vocational and leisure education. All of them can benefit from the use of technology in different ways. Some of them can be conducted using "distance education" method while others can use Internet and other technologies. Some of the adult education types are best conducted face-to-face like vocational or skill training, initial literacy, and others like community development. These types may also

benefit from the use of different forms of technology like multimedia, radio and television, and so on. The more formal adult education types like continuing education can equally be supported with suitable technological devices.

ICT use in Nigeria has been largely for communication—few use it for leisure activities like Do-It-Yourself (DIY) and Music. A study by Bakare (2009) supported that majority of Internet users use it for other activities than for educational research purposes but rather more for games and the social network. Adults mainly use the computer for word processing and only a few know how to use the Internet effectively. Adult education is lifelong and now goes beyond the institutionalised, contact-based, structured, and formal education to more non-formal learning even for those who have finished with obligatory schooling. In the context of adult education being from cradle to the grave and for the adult learner to successfully continue learning through life, there is the need to make a conscious effort to overcome any obstacle that may arise daily. The digital age thus presents technology that can assist the adult learner to learn in his own space, at his own pace, and at a convenient time, since technology adds value to educational outcomes and increases efficiency and productivity. Siemens (2005) even added that the use of ICT can also improve the quality of learning for the adult.

Adult education practice in Nigeria is now premised on Knowles' theory and principle of andragogy which purported that the learning adult is self-directing, problem-centred, has experience that can also serve as a resource, is internally motivated, and needs to learn for immediate use related to real life issues (Knowles, 1980). All these fit well into the use of computer technology. Knowles et al. (2005) maintained that technology is a force that presents great opportunities for andragogical adult learning. This is because the use of technology helps to enhance classroom instruction in a way that directly caters to the adult's desire to be self-directed in his learning. Nigeria still struggles to uphold the principles of andragogy in adult learning along with active learning to give authentic adult learning experiences and create learning communities. In the digital age, ICT is used to empower learners through collaborative learning and social networking, using the computer.

Effect of the Digital Age on Adult Education Practice in Nigeria

As a result of the use of digital media, education is now conducted differently. The technology of the new millennium is in the use of everything that is digital to support learning and the transfer of information (like digital photographs, computer, and even digital print media [like books, etc.]); information can now be exchanged through the computer, camera, phone, and the personal digital assistant (PDA). Adult education is now concerned with learning that is focused on developing critically reflective adult learners who will not only create and adapt knowledge from their new understanding and practice but will ultimately contribute to the knowledge economy. Thus adult learning in Nigeria is moving away from the traditional passive acquisition of facts to the application of knowledge such that the learner now constructs his own knowledge and idea as independent and self-directing individuals or in groups. Different adult education types that have benefited from the use of technology in Nigeria include distance education, among others.

Distance Education (DE) is the totality of all education that is characterised by physical separation (in time and/or distance) between the individual learner and the teacher (unlike in the traditional classroom setting), where content is then delivered through alternative media like print and ICT. The need for the use of different media techniques in teaching and learning is often informed by the level of distance involved between the learner and teacher. Many of the different media whether print or electronics lend themselves well to distance education. Examples are computer-based, Internet-based, computer-aided instruction, CDs, multimedia like video or TV, radio, print, etc.; and all these appeal to different learning styles like visual, kinesthetic, and auditory.

The past Secretary General of the United Nations in an address noted that *the internet holds the greatest promise humanity has known for long distance learning and universal access to quality education* (Annan, 2003). He saw it as a chance for developing countries to join the noughties and take their rightful place in the global economy—which Nigeria is capable of, given the right circumstances. Distance education has therefore taken centre stage in adult learning methods. It has become even more sought after as a result of the inability of the regular admission system to meet up with the demand for higher education in Nigeria. It has also boosted self-learning which can be conducted through e-books, the virtual library, and virtual

university. Distance education is one of the most popular modes of adult education in Nigeria today but still suffers from erratic use of technology. Other areas of adult education where the digital age has a more direct impact are in Workers Education (whether on or off the job, as part time, etc.), and use of multimedia is popular with Training programmes. Any nation needs an educated workforce who can contribute meaningfully to development. Others are Continuing Education, University Education, and Leisure Education. Technology is used to enhance the conduct of any of these adult education types although its use may be limited for some types like Initial Literacy and other skill trainings that require contact. The digital age has impacted adult education, but on a much wider level, in the way it is applied in everyday life through communication, commerce, etc. There is no way anyone will not, on a daily basis, come in contact with or have to use some form of technology or the other. The commonest application is the cell phone which virtually everyone uses daily for educational, entertainment, and commercial purposes. The use of ICT has seriously changed the way we learn and boosted the efficacy of distance education and the other adult education types. This is because it allows for unprecedented dynamic interaction between teacher and learner and learner and learner, especially while they remain on the job so that it helps to widen and deepen their skill base and create economic viability while engaging the learner in a knowledge society that will ultimately fit into the global economy.

Use of Digital Devices as Teaching Aid

Digital tools are also used to support learning in different ways. One of the commonest usages is as a support to conventional teaching. This can be through the Internet, satellite, and other virtual reality situations. Digital devices can thus be used independently or in collaboration with different methods of teaching in order to clarify, enhance, enrich, or further explain concepts. Examples of such devices include digital video, multimedia, and Internet interaction among others.

Using the Internet to learn has birthed collaborative learning. Web interface has also encouraged more horizontal modes of access rather than the usual hierarchical one, and this further makes for collaborative learning. This is because the knowledge is not necessarily coming only from the credentialed elite and information can be gathered from experts as well as from other people's experience (Selwyn et al., 2006). The use of ICT as a support in

the educational system has become a familiar concept. Different devices are now used to enrich classroom learning experience. Popular among these are the computer and Internet, the CD, and PowerPoint presentation among others. Using ICT as teaching aid opens up almost unlimited possibilities and adds value to the teaching and learning experience. ICT is also capable of fostering development which is the goal of any nation through its contribution to the enhancement of educational, economic, and socio-cultural progress. As the erstwhile Secretary General of the United Nations (Kofi Annan) noted—*if harnessed properly, ICT has the potential to improve all aspects of our social, economic and cultural life and serve as an engine for development in the 21st century*—Annan (2003).

Another area where ICT is necessary for adult educators is that it helps open them up to more innovative ways of communicating and engaging the learners in a mutual journey of discovery that is fully participatory. Digital age has gone beyond the use of technology in the classroom and spilled over into the everyday daily routine use, and the discerning adult educator will be appropriately trained and be able to harness and maximise the use of technology for adult learning opportunities.

Problems of the Digital Age

There have been several challenges in fully embracing the digital age in Nigeria. A big part of this is attributable to the ineffectual policy and implementation along with fragmented policies by various agencies. National IT policy was not particularly articulated for ICT in education which translates to the lack of IT policies in Nigeria (Mutula, 2003); in addition, other pronouncements have included that all stakeholders must belong to the national ICT network, that government will provide the infrastructure and facilities for promoting ICT at all levels of education along with a virtual library project. The Federal Government struggles to provide the infrastructure and training to the educational system though this has been slow and largely ineffectual right from the failed first attempt in 1988 to subsequent efforts with the IT policy of 2001 which vowed to integrate ICT into mainstream education and training. Unfortunately, these and other well-meaning efforts have failed to go beyond initial distribution and installation of computers in schools. There is still a yawning gap between IT skills, technological education, and the provision of the necessary tools.

Some of the factors that have shaped and impacted adult learning opportunities in the digital age include provision and availability of the necessary digital tools. The average Nigerian does not have access to the necessary tools, cannot afford them, or does not have electricity to run them, among other challenges. An alarming figure posited by Olubamise (2006) reckons that the entire African continent does not have up to 50% of the computers and telecommunications facility of just one city (New York, USA). This means that we still have a long way to go as there is the need to move from mere computer acquisition, operation, and maintenance to the level of manufacturing our own hardware, software, and firmware if we are indeed to successfully join the developed world. We are fast approaching the time when all contact and learning will be fully dependent on technology.

Another cog in the wheel of technological advancement is the digital divide which is when the disparity in access to ICT makes the disadvantaged group unable to contribute to or benefit from the digital age. Nigeria is particularly affected by the digital divide in terms of adult education because, as a developing nation, majority of the population still live in rural areas and do not have access to education, talk less of technology. This disadvantaged position is further exacerbated because efforts to progress have been stymied by such problems like the lack of the necessary technological educational background in Nigeria (Alabi, 2004). This is due, in part, to the reticence of the technologically savvy nations to transfer technological ability along with their investments in developing nations who lack the capacity to operate, maintain, or manage such technological facilities (Baro, 2011). All these draw more attention to the necessity for various forms of adult education to rectify these anomalies.

Another problem comes from the use of the computer in adult education. Selwyn et al. (2006) found that it was used largely in solitary and self-directed manner and used to learn *that* rather than *how*. Nigeria seems to be stuck at the level of learning *about* the computer rather than learning *through* it. Selwyn and co-workers' research on adults in Great Britain further draws attention to the use of computer in adult education and questions whether using the computer actually helps adults to learn. They opine that use of computer helps to build on previous learning behaviour rather than create a new-found desire for learning. If this is a challenge in developed nations, it exposes the need for adult learners in Nigeria to be properly trained in order to maximise technology opportunities.

Future of the Digital Age in Nigeria

The future of technology is bright in Nigeria, especially if the necessary steps are taken. The digital age has opened up unprecedented doors for learning as different technologies have made it possible for man to reach out to hitherto unreachable places. This means that the world is indeed a global village and information can travel anywhere in the world. This enriches adult education and makes it possible to be a lifelong process as well as something that can truly be achieved anywhere, anytime, from anyone on any subject in the comfort of one's home and at one's pace making it a truly adult education experience. There is so much potential that we will be doing ourselves a grave injustice if we do not join the global economy in the information age. There is too much information travelling on the information super highway, and we must not be left in the dark. We are also going into a paperless society where most transactions will be done online.

While many of the developed nations already have comprehensive ICT policies and plans in place or at the advanced stages of implementation, Nigeria still struggles with a viable, all-encompassing policy that will truly catapult her to the digital age and boost her technological advancement. Nigeria has shown interest in technology through policy and other effort, but the implementation has been slower than anticipated for several reasons. Bakare (2009) noted some of these setbacks as being a result of cyberphobia, lack of access to technological tools, inability to afford the necessary tools, the lack of electricity to power as well as connectivity, among others challenges.

There is the need to institute a strong foundation, which is presently lacking for ICT use along with the relevant policies. What then will catapult us into the twenty-first century in terms of ICT. The desire seems to be there and there is now the awareness; what seems to be lacking is the full political power to back it up and will to commit totally to the cause, the process through operationalisable policies and genuinely sincere implementation and funding. We must learn to prepare the learning adult for the new world so that they can be empowered to fit in, adapt, cope better, and be optimally productive and relevant. They must learn for the digital age.

Conclusions and Recommendations

1. Nigeria needs a stronger and integrated policy base that would help with the acquisition, organization, storage, and distribution of information which will impact positively on education and development efforts.
2. There is the need for the necessary computer literacy to move learners from learning about the computer to actually using them as the resource-rich potential it represents.
3. There is the need to harmonise the efforts of the communication industry, education, energy for a cooperative and interdependent strategy that will bring out the best in all. This will help to avoid lack of coordination of efforts, repetition, or unnecessary competition between different stakeholders. This goes beyond the mere passing of the IT Policy Bill in the National Assembly. This should also be followed by the needed supply of uninterrupted power to operate the computer, a good telephone network for data transmission, and computer-literate personnel to manage a successful IT use.
4. There is a need for the government, along with the awareness level, to invest more in technology by way of increased funding to universities, encourage computer training across board, and support local initiatives to develop technology.
5. The ideal of the digital age is premised on creating a society that will continue to learn throughout life. The use of ICT in adult education is an effective way to bridge the digital divide and improve the quality of human resource in Nigeria (Kayode, 2007). A good way of doing this is to intensify the development of technology and train the necessary personnel.
6. There is the need to update adult education practice in Nigeria to favour more use of ICT. There should also be a quality assurance process build into adult education practice especially to periodically review ICT performance and use the result to plan for the future.
7. Nigeria can hardly afford to sideline the digital age; information is knowledge, and if we live in an information age, the only way to move forward is to arm the adult learner with the digital tools to function adequately; after all, the digital age has come to stay. ICT is necessary for us to move into the noughties and compete

effectively in the global economy along with the leading nations in the developed world. Other African nations like Ghana, South Africa, and Mali already have successful ICT development. Nigeria can also do it while striking a healthy balance between being connected and not.

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