

**ICTS EDUCATION IN SCHOOLS IN THE
BRACED STATES: A REVIEW**

BY

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Abstract

Nigeria like any African country is under pressure by accelerated globalization. She is facing a dramatic dilemma of establishing a high quality system of education quickly or face development regression. The leaders of the South - South (Bayelsa, Rivers, Akwa Ibom, Cross River, Edo and Delta (BRACED) states of Nigeria view education and human capacity development as critical to the overall development of the geo-political zone. Information and Communication Technology (ICT) is known to offer a rapid remedy. To achieve a rapid development of ICT in schools, there must be specific policy for ICT education and a strategy for enforcement. In 2007, the Federal Ministry of Education created its ICT department and has since been collaborating with several government agencies and other stakeholders in the private sector to initiate ICT-driven projects and programmes to impact all levels of the education sector. Like every issue of development in the country the BRACED States are struggling to access the technology. Attempt has been made in this paper to review few of these initiatives and the objectives for their establishment. Major challenges in the effective zonal development of ICT in education are critically reviewed and specific ways of practicalizing the use of ICT in classroom instructions despite identified inhibiting factors are given.

INTRODUCTION

Development in Science and Technology has brought to the lime light the indispensable role of the Information Communication Technology (ICT) tools in education. Today, computer technology in schools is one of the most far reaching and fast growing developments in education. Proprietors of private institutions use the number of computer systems they can afford to attract students. Parents also assess the quality of the school by the number of the available computer systems and their connectivity. For effective utilization of any ICT tool, one must be computer literate. As a matter of fact, it is essential that every lettered individual be computer literate. It is the right of every citizen to be able to read and write. In analogous to reading, a computer puts out messages that require interpretation by the learner (the reader) and in analogous to writing, the learner (the writer) generates messages that can instruct the computer on what to do. These are the two fundamental aspects of computer literacy.

Career opportunities and individual's welfare depend on these fundamental skills (reading and writing). In this age of information explosion, one's skill in the use of computer will largely determine one's value in the work force. Computer literacy will likely have such impact on career opportunities in the future just as the ordinary or conventional literacy has had in the past. Just as verbal and mathematical literacy gave one job freedom, so shall computer literacy in future. It is essential therefore that youths from the BRACED States of this nation are not unwittingly pushed out of global job market due to poor quality education.

Moreover, reports from examination bodies like the West African Examination Council (WAEC) and National Examination Council (NECO), have revealed that performance of students in Science subjects is poor in the Niger Delta region. The Niger Delta Development Commission set out measures to address the problem including hosting of a workshop tagged,

“Knowledge Enhancement and Pedagogical Training”. ICT could be a power and most effective tool in such training. There is need for an impacting computer education programme to equip the youth for national development. A former secretary general of United Nation, Kofi Annan observed that the internet holds the greatest to humanity for long distance learning and universal access to quality education. It offers the best chance yet for developing countries to take their rightful place in the global economy. The BRACED states with all the socio-economic challenges they faced could address their educational problems through ICT.

It is against such background that we need to appreciate the organizers of this summit for this timely zonal conference of stakeholders.

Computer Literacy: A Sine Qua-Non For Effective Utilization of ICTs

Information Communication Technology (ICT) uses a variety of media referred to in this paper as tools. They have a revolutionary impact on how we see the world and how we live. The phenomenon has given birth to the contemporary e-commerce, e-government, e-medicine and e-learning. Computer, radio receivers, television monitors, talking books, mobile phones etc are examples of some of these tools. Computer is one indispensable ICT tool and everybody needs to be literate to use it.

What Exactly is Computer Literacy?

Can one who operates a computer well enough to play games, send e-mail or surf the web be considered computer literate? Does ability to do basic word processing be sufficient for one to be classified a computer literate individual?

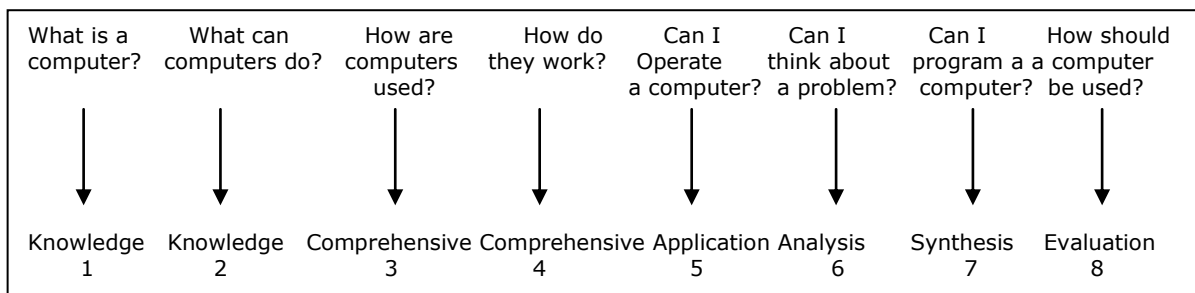
Beekman and Rathswohl (1999) defined computer literacy as the ability to use computers. In Wikipedia (2010), it is regarded as the knowledge of computer and the ability to use it and the technology; computer programmes and applications associated with computer. Oluwatayo

(2012) defined Computer Literacy as the amount of knowledge and skills acquired by an individual to perform a given task using computer system.

In this paper, the concept is regarded as existing along a continuum from general awareness to the user's ability to write programmes. Thus, the knowledge and skills acquired in this area could be very high, high or low or very low depending on the individual's exposure to computer facilities. Computer literacy therefore involves:

- Mental knowledge of hardware, software, data processing, concepts, and application of computer,
- Attitudes towards computer (including a willingness to use it where appropriate in daily use situations without fear), and
- Skills (requisite skills to operate the system; modify existing programmes to suit daily instructional needs and programming new application, etc).

Computer Literacy On A Continuum



(Adapted from Heinich, et al 1989)

Knowledge of the use of computer generally has become so important in everyone's life. This is because the technology is known for its capacity to store and retrieve information accurately and with immediacy. Information, it is said, is power. The introduction of this particular tool of ICT into education and training in the 1950s marked the third revolution in education, the first and second being the introduction of printing and libraries respectively. The development of this technology has been so

dynamic that nobody can pretend not to be aware of its existence. What one may not be able to say exactly is the knowledge of people's awareness of this technology and the possible roles or functions it is capable of performing. For the youths of the BRACED states, evidence abound to demonstrate that a great number of them spend time daily at cyber café surfing the net (Ekpo, 2002; Agyeman, 2007).

Policy Frame Work on ICT in Education Sector

In 1988 the Federal Government launched the National Policy on Computer Literacy at Primary, Secondary and Tertiary levels of education with the aim of equipping the pupils/students with computer skills for the next century. There was no driving force to achieve much success. Later, the Federal Executive Council established the National Information Technology Development Agency (NITDA) as the implementing body for ICT in the country. The National ICT policy of 2001 empowers NITDA to enter into strategic alliances and to collaborate with the private sector for the purpose of realizing the nation's vision of making Nigeria an IT capable country in Africa. Specifically the policy's objectives were to;

- ensure that ICT resources are readily available to promote efficient national development,
- guarantee that the country benefits maximally, and contributes meaningfully, by providing the global solutions to the challenges of the Information Age,
- empower Nigerians to participate in software and ICT development,
- encourage local production and manufacture of ICT components in a competitive manner,
- establish and develop ICT infrastructure and maximize its use nationwide,
- empower the youth with ICT skills and prepare them for global competitiveness,
- integrate ICT into the mainstream of education and training,

- create ICT awareness and ensure universal access in promoting ICT diffusion in all sectors of national life,
- create an enabling environment and facilitate private sector (national and multinational) investments in the ICT sector,
- encourage government and the private sector joint venture collaboration,
- develop human capital with emphasis on creating and supporting a knowledge-based society, and
- create a mass pool of ICT literate manpower using the NYSC, NDE, and other platforms as a train-the-trainer scheme for capacity-building.

The economic blueprint called Vision 20-20-20 is widely acknowledged as achievable if education and ICT play key roles. ICT must be made an enabler to transform the socio-economic sectors of this country. Armed with the ICT policy and the driving force of vision 20 - 20 - 20 one would have thought that the potentials of ICT tools will serve as catalysts for the required development. A closer look at the three tier of Nigeria's education system reveals that no provision is specifically made in the national policy of education for ICT exposure. Nigeria's objective for primary education for instance does not elicit the knowledge of ICT specifically. Rather, emphasis is on:

- Widening of access to basic education,
- Eliminating of inequalities in the enrollment between the urban and rural populations, and
- Ensuring greater retentions in schools and ensuring long-term permanent literacy for the graduate of the programme.

However, while ICT knowledge is not evoked in the vision set for primary school pupils, Agyeman (2007) reported that the government did order one million laptops for primary school pupils and some of the primary

schools have computer laboratories especially those located in the high class zones of the big cities.

A non-profit organization called, 'School Net Africa' also created learning communities of educators and learners to use ICTS for enhancement of education and collaborated with the Busy Net computer company in setting up ICT laboratories in four schools each in some states, (Fall, 2010).

The Vanguard Newspaper of 8th February, 2007 also reported of another collaborative initiative by Zinox computers with Microsoft to revolutionize ICT usage in education from primary to university level. Zinox strategy targeted all-students, lecturers and their institutions.

The Zinox Company provided computer at very highly discounted prices to enhance Nigerian government in achieving its proposed 75% ICT application by 2010. This private computer company worked with the First Bank of Nigeria Plc in bankrolling the project. ICT laboratories were thus set up for schools to repay in two to three years. Lecturers were also given loans to purchase laptops and these are repaid in one year.

This ICT revolution has also registered corporate backing not only with the computer companies like Zinox but also with financial houses. It is reported that over 80 schools have benefited from the Zenith Bank's ICT for Youth Empowerment Scheme which started few years ago. The scheme from inception has focused on assisting Nigerian Youth to bridge the 'digital divide' through an early introduction of ICT facilities. Each of the 80 schools received a minimum of 10 computers. To encourage the use of the systems, in addition to providing these computers, the bank organizes an annual ICT empowerment forum that attracts about 2000 secondary and tertiary level students. In 2006, the bank is said to have distributed 100 Personal Digital Assistants (PDAs) to the first 100 participants (students) who arrived at the venue, (Agyeman, 2007).

At the tertiary-level of education Okhiria (2007) noted that National Universities Commission (NUC) did prescribe that there should be at least one computer to every four students and one Pc to every two lecturers below the grade of lecturer I, One Pc per senior lecturer and one notebook per professor/reader were equally recommended. NUC has gone further to establish e-learning platforms fitted with twenty SmartBoards in twelve Federal universities for the promotion of the use of ICT in teaching and learning.

Majority of the Nigerian Universities have not achieved this recommended system ratio for their faculties, though some have made giant or notable strides in campus wide area networking and e-learning course deliveries. Institutions like:

- Obafemi Awolowo University (OAU) boasts of its best-developed ICT system in the country with a personal VSAT access to the internet and a campus wide intranet services.
- University of Jos which is blazing the trail for content development and e-learning in addition to the campus networking, (Liverpool et al, 2009).

Very few of Public Higher Institutions in the country are capable of meeting the ICT needs of their staff. Many of the lecturers have to go to commercial cyber cafés in town before they have access to a computer that is internet connected. The private universities seem to be better off since majority of them like Covenant University (CU), Afe Babalola University, American University of Nigeria (AAUN) etc have 24-hour internet connectivity in their campuses. At AAUN for instance, each student is provided a laptop with the cost factored into the fee structure. That of course will not be within the reach of too many students.

From the forgone review, it is evident that education sector has been fully sensitized with the gains of ICT in the development of that sector and in

enhancing learning at the three levels of schooling. There is a wide expectation that online learning or internet based educational technologies have the capability to improve the quality of education and its delivery system while costs are contained. The past decade has been characterized by theorization of issues, experimentation and exploration of opportunities, problems and solutions in ICT. There is great expectation from all the three levels of interactions for the development of educational system. Specifically, educators are now beginning to identify common factors associated with successful use of ICT in schools. These include:

- a. Pedagogical issues like the need to re-design courses for different delivery modes,
- b. Resourcing issues like class size, students and teacher preparation for the new modes of learning and teaching and for the use of associated technologies, provision of instructional support services to the teacher and maintenance of the technology, and
- c. Instructional issues like matching the instructional strategies and technologies to the learners and provision of incentives to motivate teachers to adopt the innovation.

United Nations has on several occasions admitted that it has achieved so much in rural and peri-urban development since the advent of ICT. ICT tools could equally be utilized in the education sector with great impact. So far, the ICT revolution is yet to attain that critical mass required for it to register the necessary impact in teaching, student's learning and on the general public nationwide. While few of the institutions cited in this paper could be said to be in the vanguard, the majority of Nigerian Universities, Polytechnics, Colleges of Education, Schools of Nursing, Secondary Schools etc lack even stand-alone computers. With the activities of International donor agencies like UNESCO, DFID, UNICEF, and national organizations like NITDA, TETFund (ETF), School Net Africa and other stakeholders as well as ICT partners (Microsoft, Zinox, HP etc), it is envisaged that Nigeria should be moving gradually towards the

realization of its ICT vision. However, there is need for effective coordination to achieve success.

Major Factors Militating Against ICT Adoption In Nigerian School System Generally

Pedagogical Challenges

The understanding of ICTs in Nigerian school system is that ICT tools will be used to support the learning process. Whether the learning is offered from a Distance Learning System (DLS) or Computer Assisted Learning (CAL) or provided online (e-learning) etc, all these systems will use a network of computers to deliver content and to support discussion and interactions. Thus, internet is the central component of the e-learning. With myriads of other national challenges, internet connectivity has not been achieved by most institutions of learning. Many contemporary programmes utilizing ICT tools in education have therefore resorted to using "Blended Learning System" – a system that combines both the traditional face to face learning opportunities with online learning. In this regard, the key challenge for this approach is how to design courses such that the best elements of classroom learning are harnessed to provide notable learning experiences. The New Partnership for Africa's Development (NEPAD) observed that about 75% of teachers in African schools including Nigeria have very limited experience and expertise in ICT and educational applications. There is need therefore to train and retrain teachers in ICT skills for effective use of ICT in schools.

Presently, the low percentage of teachers in the BRACED States who have ICT skills, Ekpo (2002, 2005); Agyeman, (2007) and the massive ICT education drive needed to correct and develop the required human resources based at the national state or institutional levels is worrisome.

Resource Issues

It would appear from the review of all the initiatives that resource issues have received greater attention. However, electric power supply has been very sporadic, and several urban cities lack constant electric power. Nigeria generates 3,500 megawatts of electricity as against a required minimum of 5,500 megawatts. That means only about 40% of the citizens enjoy electricity from the national grid. Proprietors of schools may find it cheaper to provide ICT tools like computers, radio receivers, television sets, and PowerPoint projectors in their schools but to afford a 24-hour alternative power source to operate the equipment could be a nightmare. About 57 of the 774 local government's headquarters in Nigeria are yet to be connected to the national grid. Rural communities are worse off because of the absence of other infrastructure, BRACED states communities inclusive.

Inadequate ICT Infrastructure

The lack of requisite telecommunications infrastructure capable of transporting multimedia message is another major challenge to utilizing ICT in schools. Lack of infrastructure including high cost of bandwidth access is a major hindrance to the use of ICT.

Similarly, lack of or uneasy access to computer equipment and other accessories at close proximity to the use area both at institutional and personal levels is inhibitive.

Under Funded School System

The overall educational system is under funded, therefore available funds are often used to solve more seemingly urgent and basic survival needs by institutions

Institutional Issues

Challenges of creating learning environments that can promote active learning, critical thinking, knowledge creation and collaborative learning

are some challenging issues in the effective utilization of ICTs. Few teachers are still scared of innovations. They are probably worried about their identity, their tasks and the impact of the changes to come. There is also the challenge of encouraging faculty or school wide adoption of the innovations in teaching and learning with IT.

ICT Politicized

At both, state and national level, provision of ICT tools to schools are highly politicized. Akwa Ibom State for instance made bold to start a systematic ICT education in secondary schools. Few schools were identified as pilot ICT schools. Soon after the infrastructural preparation, the project was suspended and the workstations were distributed to all schools as stand-alone system because of political pressure to serve all ethnic groups. Even at the institutional level, there is much politicking such that innovations are encouraged depending on the initiator's relationship with the management. Information is still being hoarded to the detriment of the national development.

ICT in Schools: Practicalizing the Use of the Tools in Classroom Teaching and Learning. There is a report of availability and use of ICT in library collection development in the Niger Delta region (Emojorho Nwalo, 2012). A survey of most private schools in the region show a wide use of ICT in primary and secondary schools. The picture is different in public schools. There is a dangerous gap in ICT. The use of ICT in schools will definitely create a child – friendly approach to education therefore it should be encouraged. Practical steps to take include:

- developing an interest for creativity and innovative learning,
- creating learning environment for ICT use in the class and around the school,
- de-emphasizing the structured school curriculum,
- varying the format of class activities and Take Home Assignments,
- emphasizing the continuing professional development of teachers,

- general improvement of funding structure for education, and
- monitoring of teaching and mentoring of teachers.

Conclusion

It is impossible to guarantee a high quality education for youths in the BRACED States if they are disconnected from the rest of the world in this age of internet services. Scholars are quite conscious of what they lose by not being connected with the rest of the world. Once internet access is in place, the creation of digital local content stimulates the rapid use of ICT especially if this local content drives users to complimentary webs resources, as it frequently happens.

Nigerian school systems – primary to the tertiary system are sufficiently sensitized as to the gains of ICT in their teaching and learning. They are ready for e-learning as soon as computers and a network are put in place and the pedagogical considerations are attended to. Until then, the ICT known to some schools in the zone is the stand-alone-computers as found in most institutions of learning.

In the interim, every teacher should be encouraged to use as much of the available software in their daily class instructions. For instance, Microsoft Word, Excel, CorelDraw and PowerPoint programmes should be integrated into appropriate teaching/learning events. All teachers should endeavour to communicate with their pupils/students using e-mail. Course contents and class assignments should be sent online through such medium. By this development, the students will learn to interact and collaborate with peers using blended learning strategy.

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