

FACTORS ASSOCIATED WITH LOW LEVELS OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) APPLICATION IN NIGERIAN SECONDARY SCHOOLS

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Abstract

This paper focuses on the factors that cause low levels of Information Communication Technology (ICT) application in Nigerian secondary schools. The paper also examined National policy on Information and Communication Technology., the roles of Educational Technology and finally recommendations were made to suggest how the educational system in the country can really make the implementation of ICT to be more effective in achieving teaching and better learning for both the teachers and the learners.

ICT is an acronym for Information and Communication Technology. It has turned the world into a global village where everybody can access anywhere within a short period of time. It is a process of transmitting electronic information from one place to another (Adebayo, 2002). While, computer is an electronic device used in accepting data, processing data, storing data, and producing large amount of information. This process is carried out in a specific way within a short period of time. It is a machine specifically designed for the manipulation of coded information, an automatic electronic machine for performing simple and complex operation far beyond the capacities of man (Peter, 2007).

Information and communication technology is a powerful tool that could link Nigerian schools together into a mini educational village (inter-educational global connectivity) for effective education information sharing and research development. This ICT could also link our higher institutional libraries and facilitate the ongoing revitalization of the educational process.

Information and Communication Technologies (ICT) are electronic technologies used for information storage and retrieval (Adomi & Ekpangban, 2010). Development is partly determined by the ability to establish a synergistic interaction

between technological innovation and human values. The rate at which ICTs have evolved since the mid 21st century, the convergence and pervasiveness of ICTs give them a strong role in development and globalization (Nwagwu, 2006: cited by Adomi & Ekpangban, 2010) . ICTs have a significant impact on all areas of human activity (Brakel & Chisenga, 2003)

Bassey (200) indentified the components of Information and Communication Technology (ICTs) to be communication technologies, network technologies, computer technologies and mobile technologies. Actually, in ICT, the central is the computer because it is the hardware for ICT activities. Computer therefore performs the role of serving as a teaching device, learning resource or device and organization and management. In education, ICTs could be represented thus: Information and Communication Technologies in Education. The field of education has been affected by ICTs, which have undoubtedly affected teaching, learning and research (Yusuf, 2005: cited by Adomi & Ekpangban, 2010). A great deal of research has proven the benefits to the quality of education (AI-Ansari, 2006). ICTs have the potential to accelerate, enrich and deepen skills, to motivate and engage students to help relate school experience to work practice, create economic viability for tomorrow's workers as well as strengthening teaching and helping schools change (Davis and Tearrl, 1999, Lemke and Coughlin, 1998).

Although efforts have been made to ensure that ICTs are available and used in Nigerian secondary school, the level of uptake is still low. It has been observed by Goshit (2006) that most schools, both private and government, do not offer ICT training programmes.

In rapidly changing world, basic education is essential for an individual to be able to access and apply information. The Economic Commission for Africa has indicated that the ability to access and use information is no longer a luxury, but a necessity for development. Unfortunately, many developing countries, especially Africa are still low in ICT application and use (Aduwa-Ogiegbean and Iyamu, 2005).

Okebukola (1997), cited by Aduwa-Ogiegbean and Iyamu (2005), concludes that the computer is not part of classroom technology in more than 90 percent of Nigerian public schools. This implies that chalkboard and textbook continue to dominate classroom activities in most Nigerian secondary schools.

New Partnership for African Development (NEP AD) has scored the level of African continent students' experience with ICTs and their proficiency in using them very low. Fifty-fifty percent of students within the continent, including Nigeria,

Algeria, Burkina Faso, Cameroon, Republic of Congo, Egypt, Gabon, Lesotho, Mali, Mauritius, Mozambique, Rwanda, Senegal, South Africa, Uganda (who are participating in the first phase of the NEP AD e-Schools initiative), stated they had no experience at all in using computers. Other findings included that the typical African school environment provides neither opportunity nor training in using ICTs, and that 75 percent of responding teachers have no or very limited experience and expertise regarding ICT education applications.

The Nigerian Federal Government has commissioned a Mobile Internet Unit (MIU) operated by the Nigerian National Information Technology Development Agency (NITDA). The MIU is a locally-made bus that has been converted into a mobile training and cyber centre its internet. The MIU is also equipped with printers, photocopies, and a number of multimedia facilities. Internet is provided via VSAT with a 1.2m dish mounted on the roof of the bus. It is also equipped with a small electric generator to ensure regular power supply. The MIU takes the internet to places, areas and various primary and high schools (Ajayi, 2003). The number of buses is so small, however, that most rural areas and schools have not yet been covered.

Importance of ICT in Nigerian Secondary Schools

Improved secondary education is essential to the creation of effective human capital in any country (Evoh, 2007). The need for ICT in Nigerian secondary schools cannot be overemphasized. In this technology -driven age, everyone requires ICT competence to survive.

Organizations are finding it very necessary to train and re-train their employees to establish or increase their knowledge of computer and other ICT facilities (Adomi and Anie, 2006; Tyler 1998). This calls for early acquisition of ICT skills by students. The demand for computer /ICT literacy is increasing in Nigeria. Because employees realize that computer and other ICT facilities can enhance efficiency. On the other hand, employees have also realized that computers can be a threat to their jobs, and the only way to enhance job security is to become computer literate. With the high demand for computer literacy, teaching and learning these skills is a concern among professions. This is also true of other ICT components.

New instructional techniques that use ICT provide a different modality of instrument. For the students, ICT use allows for increase individualization of learning. In school where new technologies are used, students have access to tools that adjust to their attention span and provide valuable and immediate feedback for literacy enhancement, which is currently not fully implemented in the Nigerian school system (Emuku and Emuku. 1999&2000).

ICT application and use will prove beneficial in improving Nigerian educational system and giving students better education .A technologically-advanced workforce will lead to ICT growth in Nigeria, with the potential to improve military technology and telecommunications, media communications, and skilled ICT professionals who will be well-equipped to solve IT ICT application in Nigerian secondary schools.

Objectives of ICT in Nigeria

Nigeria has an information vision statement which is to make the country an IT capable country in Africa and a key player in information society by the year 2005. The mission is specifically aimed at:

- (a) Empowering Nigerians to participate in soft ware and K'T development.
- (b) Encouraging local production and manufacture of ICT component in competitive manner.
- (c) Empower children, woman and disable by providing special programs for the acquisition of ICT skills.
- (d) Empowers the youths with ICT skills and prepare them for global competitions.
- (e) Integrating the ICT' into the mainstream education training.
- (f) Creating ICT awareness and ensuring universal use in order to promote ICT diffusion in all sectors of national life.
- (g) Establishing new manufactured ICT institution as centers of excellence to ensure Nigerian's competition in international markets.

Despite of the above mentioned policy and vision statements, ICT as at today have not really got its footing in most of our country's levels of educational system. The ICT proper implementation and utilization have always been at a constant embattlement with lot, normal and regular factors listed below.

Challenges of ICT in Nigerian Secondary Schools

Inadequate ICT Manpower in Schools

The main problem facing Nigerian and its ICT programme workforce training (Goshit, 2006: cited by Adomi & Epkangban, 2010). Teaching as a profession in Nigeria is considered to be for poor people, therefore the few professionals that are available prefer to work in companies and industries where they can earn better salaries. With this deplorable condition, teachers are not motivated to go the extra mile in assisting the students to acquire computer education (Oduroye, n.d).

High cost of ICT Facilities

Cost has been reported as one of the factors which influence provision and use of ICT services (Adomi,2006). The cost of computers is too high for many to afford .Monthly internet rates are exorbitant and the charges for satellite television are

unaffordable for most people in Africa (Brakel and Chiseuga, 2003). This has made it difficult for Nigerian secondary schools to acquire and install ICT facilities for the use of teachers and students.

Lack of/Poor Perception of ICT among Teachers and Administrators

There is widespread ignorance and misconception about ICTs amongst Nigerians (Ighoroje and Ajayi,n.d). One of the major inhibitors to Nigeria fully embracing ICTs is the average Nigerian's general lack of exposure to them. For most Nigerians, information technology is still something unfamiliar, distant, and mysterious. Rather than being seen as a tool for personal and national development, information technology is seen as a hurdle (NITDA, 2003). Some Nigerians are not aware of the existence and importance of the internet (Adomi, Okiy, and Ruteyan, 2003). It has been reported that 75 percent of the teachers in the NEP AD's e- School Project no or very limited experience and expertise regarding ICTs in education.

Limited/Poor Information Infrastructure

Research confirms that ICT development and application are not well established in Nigeria because of poor information infrastructure (Adomi, 2006, Adomi, 2005, Aginam, 2006: cited by Adomi & Kpangham 2010). It has been reported by Suithwood (2004) that more than 40 percent of the population of Africa is in areas not covered by television services. Schools located in such areas will experience ICT connectivity problems.

Lack of Inadequate ICT Facilities in Schools

Ndiku, (2003) discovered that insufficient numbers of computers and peripheral devices inhibit deployment of ICT teachers. Okwudishu (2005) discovered that unavailability of some Information and Communication Technology components in the schools hampered teacher's use of Information and communication Technologies. Lack of adequate research skills, and of access points in the schools were reported as factors inhibiting the use of the internet by secondary school teachers (Kalu, 2005). The absence of ICT in most Nigerian Secondary schools leads students to resort to cybercafés for internet access. Most cybercafé clients in Nigeria are students (Adomi, Okiy and Ruteyan, 2003)

Poor Power Supply

Electricity failure has been a persistent problem militating against ICT application and use in Nigeria (Adomi & Kpangham, 2010). Technology products require effective power supply. The epileptic nature of power supply has adversely affected the application of ICTs (Efegbo, 2011). In some schools where there is

alternative power supply to PHCN, the generators are always breaking down because the hardwares require high power to sustain them.

Poor ICT Policy/Project Implementation Strategy

The Federal Government of Nigeria, in the national policy on Education (Federal Republic of Nigeria, 2004), recognizes the prominent role of ICTs in the modern world, and has integrated ICTs into education in Nigeria. To actualize this goal, the document states that government will 'provide basic infrastructure and training at the primary school. At the junior secondary school, computer education has been made pre-vocational elective, and is vocational elective at the senior secondary school. It is also the intention of government to provide necessary infrastructure and training for the integration of ICTs in the secondary system (Adomi & Epkangban, 2011)

It should be noted that 2004 was not the first attempt the Nigerian government made to introduce computer education. In 1988, the Nigerian government enacted a policy on computer education. The plan was to establish pilot schools and diffuse computer education innovation first to all secondary schools, and then to primary schools. Unfortunately, the project did not really take off beyond the distribution and installation of computers to federal government secondary schools which were never used for computer education of the students. No effort was made to distribute computers to state government or private schools (Okebukola, 1997). Although government planned to integrate ICTs into the school system and provide schools with infrastructure, concerted efforts have not been made to provide facilities and trained personnel.

Roles of Educational Technology

As earlier indicated, educational technology includes the domains of educational technology of learning, resource, educational development and education management and organization functions focusing on the learner, posit educational technology as a method that attempts to solve educational problems through effective planning and integration of techniques, ideas, human and non-human resources for achievement of clearly defined educational objectives.

Educational technology employs principals that make instruction systematic and scientific, where objectives are specific for effective and adequate evaluation of the learning outcomes

- ✓ Educational technology provides learners with resource materials and devices that are learner-friendly and can help the learner acquire experiential, purposeful and meaningful learning

- ✓ Educational Technology exposes the learner to real -world environment through the incorporation of technology -based instructions (computer-based learning, web-based learning internet-technology) etc. Where learning is practical, real and activity oriented.
- ✓ Though the use of technology education, technology takes care every learner both conventional and distance learners.
- ✓ Educational technology exposes the teacher and the learner to a whole lot of materials/devices that will provide the teacher with means of clarifying concepts, arousing and sustaining the learners interest through hands-on /minds-on experiences
- ✓ Though research germane to education and human learning, education technology designs, produces evaluates selects and attend to logistics involved, also it utilizes both human and non-human resource to improve human learning. (Ifegbo, 2011)

The National Policy for Information Technology

FMI (2001) described ICT as any equipment that is used in the acquisition, storage, manipulation, management, control, display, switching, and transmission of information. According to Daily Times of 6th October 1999 the African heads of states were urged to:

1. Show more commitment towards the development of information and Communication Technology (ICT) by integrating it into their socio-economic plans and budgets.
2. Be computer literate, together with their ministers and get connected to the internet by the year 2000 in order to be part of the global village.
3. Introduce it into the senior primary and secondary schools curricula by making its teaching mandatory.
4. Discourage the use of manual type writers and use computers.

Conclusion

The adoption and use of ICT in schools have appositve impact on teaching, learning, and research. Despite the roles ICTs can play in education, secondary schools in Nigeria have yet to extensively adopt them for teaching and learning. Efforts geared towards integration of ICTs into secondary school system, have not had much impact. Problems such as poor policy and project implementation strategy, and limited or poor information infrastructure militate against these efforts.

Recommendations

1. All secondary schools should be made beneficiaries of ICT project
2. Government should ensure that there is steady power supply. Rural areas without power supply should be provided with electricity.
3. Teachers skilled in ICTs should be posted to secondary schools.
4. Government should ensure that ICT policy implementation are translated into reality

An ICT policy implementation commission should be created. This commission should be funded and given the power to provide ICT facilities in schools and monitor their use.

References

- Adomi, E.E., & Anie, S.O.(2006). An assessment of computer literacy skills of professionals in Nigerian university libraries. *Library hi Tech News* 23 (2): 10-14.
- Adomi, E.E (2005a) Internet development and connectivity in Nigeria. *Program* 39 (3): 257-48.
- Adomi, E.E (2005b). The effect of a price increase on cybercafé service in Abraka, Nigeria. *The Bottom Line: Managing Library Finances* 18 (2): 78-86.
- Adomi, E.E.(2006). Mobile phone usage patterns of library and information science students at Delta State University, Abraka, Nigeria. *Electronic Journal of Academic and Special librarianship* 7 (1)
- Available:<http://southernlibrarianship.lcaap.org/v7n01/adomi-e01.htm>.
- Adomi, E.E. (Forthcoming c). African and the challenges of bridging the digital divide. M. Khorsrow-pour (Ed). *Handbook of public information technology*. Pennsylvania: Idea Group (in press).
- Adomi, E.E. (Forthcoming a). Overnight Internet browsing among cybercafé users in Abraka, Nigeria. *Journal of Community Information*. (in press)
- Adomi, E.E., Okiy, R.B., & Ruteyan, J. O. (2003). A Survey of cybercafé in Delta State, Nigeria *The Electronic Library* 21 (5): 487-95.
- Aduwa-Ogiegbean, S.E., & Iyamu, E.O.S. (2005). Using information and communication technology in secondary schools in Nigeria. *Educational Technology & society* 8 (1). 104-112.
- Aginam, E. (2006). NEPAD scores student ICT education in Africa Low. *Vanguard*. Available:www.vanguardngr.com/articles/2002/features/technoiogy/tec527092006.html
- Enuku. U A., & Enuku, O. (1999 & 2000) . Breaking down the walls; Computer application in correctional/prison education. *Benin Journal of Educational Studies* 12/13 (112): 64-71
- Sano, C.(2006). New Information Technology: A challenge for Education. Paris. Eric cument service.

- Federal Republic of Nigeria (2004). National Policy on Education. 4th ed. Lagos: Nigerian Educational Research and Development Council.
- Kalu, F.A. (2005). The use of internet by secondary school teachers in the rural areas of delta State
- Kazaure, M. A. (2003).Secondary Education in Nigeria: The challenges of Information and communication Technology. *Paper presented at NEC meeting of ANCOPSS at Damaturu 12th.*
- Peter, N. (2007). Computing Fundamentals, New York McGraw Hill.
- Yusuf, M.O. (2005). Information and Communication education: Analyzing the Nigerian national policy for information technology. *International Education Journal* 6 (3), 316-321.