

ADDRESSING THE PROBLEMS MILITATING AGAINST EFFECTIVE INTEGRATION OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) IN THE NIGERIAN UNIVERSITY SYSTEM

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Abstract

The university system in Nigeria reflects the highest platform for teaching and learning, and therefore should be a key player in the use of information and communication technology (ICT) .. Information technology, while an important area of study in its own right, is having a major impact across all curriculum areas. Rapid communication, plus increased access to ICT in the home, at work, and in educational establishments, could mean that learning becomes a truly lifelong activity—an activity in which the pace of technological change forces constant evaluation of the learning process itself. In this paper, sensitive factors militating against effective integration of ICT in our universities are identified and measures to ameliorate these problems are examined. It is expected that the recommendations so reached would help Nigerian universities to greatly embrace ICT.

Information and Communication Technology (ICT), is a composite term which embodies three important concepts. To understand ICT, one must understand all three concepts.

"Information" means many things to many people depending on the context. Scientifically, information is processed data. Information can also be loosely defined as that which aids decision making. Information, though abstract, could also be visualized as a commodity, which could be bought or sold.

Communication refers to the transfer or exchange of information from person to person or from one place to another. When action produces a reaction, whether positive or negative, communication has taken place.

Communication reflects the passing of messages using signals which that could be understood by all parties involved in the process. In the communication process ,ideas, facts, opinions, attitudes and beliefs between people are expected to be exchanged.

Technology refers to the use of scientific knowledge to invent tools that assist human beings in their efforts to overcome environmental hazards and impediments to comfort. In this regard, technology refers to the things like the computer, telephone, cell phone, GSM handsets, television, radio, etc.

In order to educate students to be life-long learners and successful contributors to the new global market, educators must change the way they teach and the way students learn. We need to remember that if we want to help students achieve a high level of competency and competitiveness, we have no choice but to make technology an integrated tool in the field of education.

The rapid rate at which ICTs have evolved since the mid 20th century, the convergence and pervasiveness of ICTs, give them a strong role in development and globalization . ICTs have a significant impact on all areas of human activity . The field of education has been affected by ICTs, which have undoubtedly affected teaching, learning, and research (Yusuf, 2005)..Nigerian universities must push ahead and become arrow heads in the use of ICT amidst the seeming obstacles.

Review of Literature

The current information revolution and increasing impact of information and communication technologies have modernized the process of teaching, learning and research in most universities (Kumar and Kaur 2005) .Several studies provide details about ICT adoption. Expert systems, wireless networks, virtual collections, interactive web interfaces, virtual reference services, and personal web portals have brought changes since the start of the new millenium (.Ramzan 2004) .The application of web-based information retrieval trends of researchers is ever increasing and the electronic material will eventually replace the traditional library and users need not go there to find and collect information they need . The Internet helps university users to save time, find up-to-date information and compare with their colleagues. Almost all users of the internet would want to improve their Internet use skill through formal training. Availability of information does not necessarily mean actual use. This shows that users are not aware of the availability of such resources or they do not know how to access them or they do not know what they offer. These call for continued information literacy programme , (Kinengyere,2007). Over the years, the Internet has become an all important technological tool in the production, marketing, and use of information world wide. The exponential growth in information and knowledge and

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the corresponding increase in user needs have stipulated a greater degree of technological inventions and strategies towards the management, transmission/dissemination, organization and the use of information,(Bemah,2002).

Information and communication technologies have also had profound impact on the tasks and skills of teachers in both the pattern and quality of lecture delivery (Mogbo, 2002). Rapid development of ICTs has led to many changes in the responsibilities of the academics in tertiary institutions. The traditional methods of doing academic work are fast becoming inappropriate. ICTs are changing the ways in which academics seek information, communicate with each other, conduct research and distribute research results,(Ehikhamenor,2002). All these point to the fact that information and communication technologies are very important for effective teaching, learning ,and research activities in an academic environment.

The Need for ICT Application in Nigerian Universities

Improved university education is essential to the creation of effective human capital in any country (Evoh, 2007). The need for ICT in Nigerian university system 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 computers and other ICT facilities (Tyler, 1998). This calls for early acquisition of ICT skills by students. For the student, ICT use allows for increased individualization of learning. In schools 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.

ICT application and use will prove beneficial in improving Nigeria's educational system and giving students a 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 problems in Nigeria and other parts of the world (Goshit, 2006).

The importance of ICT is quite evident from the educational perspective. Though the chalkboard, textbooks, radio/television and film have been used for educational purposes over the years, none has quite impacted on the educational process like the computer. While television and film impact only on the audiovisual faculties of users, the computer is capable of activating the senses of sight, hearing and touch of the users. ICT has the capacity to provide higher interactive potential for users to develop their individual, intellectual and creative ability.

There is no doubt that ICT provides productive teaching and learning in order to increase people's creative and intellectual resources especially in today's information society. Through the simultaneous use of audio, text, multicolor images, graphics, motion, ICT gives ample and exceptional opportunities to the students to develop capacities for high quality learning and to increase their ability to innovate.

Nigeria cannot afford to lag behind in using multimedia to raise the intellectual and creative resources of her citizens. This would be clearly vital for those that will be exposed to the challenge of internet in the future. Nigerian children need to be taught by radically new educational programme and variety of educational contents with multimedia playing key roles.

ICTs have undoubtedly, impacted on the quality of teaching, learning and research in various educational institutions. In concrete terms, ICTs can enhance teaching and learning through its dynamic interactive and engagement of students in learning. It is the responsibility of the Government to provide necessary infrastructures and training for the integration of ICTs in the high school system in recognition of the role of ICTs in advancing knowledge and skills in the modern world. It should be noted that it was not in 2004 that the Nigerian Government made the first attempt to introduce computer education in schools. In an earlier attempt to keep pace with development in computer education, Nigerian Government had, in 1988, enacted a policy on computer education. The plan was to make computer education necessary in the school system, unfortunately, at the stage of distribution and installation of personal computers to schools, the project did not take off.

Problems

The ICT, as useful as it is cannot be said to have been properly domesticated in Nigeria the way many developed nations have done to improve their education system. Although there continues to be growing awareness about it in the country, the fact remains that the percentage of the population that is aware of it, and who also are computer literate would be infinitesimal when compared to the sea of Nigerians who are still in the dark concerning what ICT is all about. That explains why today in most Nigerian universities, lectures and other academic activities are still being conducted in the way of the past.

Lack of Funds

Computer networking, especially for large campuses, could be very expensive. Universities do not receive grants regularly and when they do, what they receive is hardly enough to pay salaries not to talk of investing in networking. There are of course some of the universities that have initiated ICT resource centers in their respective campuses so as to be abreast of the 21st century challenges. The

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problem of accessing funds to procure ICT facilities by the university authorities is one big problem that has militated against efforts at making their campuses ICT driven. Most of the ICT centers opened by universities are either done through the collaborative efforts from the government and corporate bodies or private sector.

Absence of Well Trained Personnel

Even where there are ICT facilities on ground, the challenges of well trained personnel who would serve as tutors to students remains daunting for university authorities. This suggests that there is a need for retraining of school educators in the application of ICT in education. They have to be taught both in theory and practice on how to integrate ICT into the education sector. This has to involve experts from within and outside the country. The main problem facing Nigeria and its ICT programme is workforce training (Goshit, 2006). 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. lecturers in Nigeria need to be trained on educational technologies and the integration of computers into classroom teaching. Teachers need effective tools, techniques, and assistance that can help them develop computer based projects and activities especially designed to raise the level of teaching in required subjects and improve student learning .

Lack of Commitment by University Administrators

Many university administrators may have their priorities placed elsewhere and not on ICT development. They do not see the essence of fully implanting ICT in their universities ,hence, the ineffective integration.

Lack of Professional Staff to give Direction

It has been difficult to employ and retain professionally qualified IT personnel who should give a sense of direction in ICT development in the university environment. The universities need to see the relevance and significance of having very high level experts that can direct the way in which ICT is to be embraced.

Lack of Infrastructure

Basic infrastructure needed for the effective functioning of ICT is in short supply in most of the Nigerian universities. Most universities lack adequate infrastructural facilities for establishing computer networks (e.g. buildings, telephones, etc).You can have the best and most sophisticated software or ICT system generally, but if the support services are lacking, the resultant effect would be total failure and collapse of the entire system. For instance, ICT would be more effective in an educational system with adequate power generation. Mobile

telecommunication currently covers 60% of the national territory, but mobile telephone companies generally power their base stations using electric power generators since the Power Holding Company of Nigeria (PHCN) is unable to supply them with power. This phenomenon is prevalent nationwide and constitutes the bottleneck to effective countrywide deployment of ICT in education. It is projected that Nigeria will be a net supplier of electric power when its massive cross-country electric power grid construction and interconnection projects are completed.

Disruptions in Academic Programmes

The Nigerian university system has the common tendency of disruption in the academic calendar due to strikes and closures of universities. This goes a long way to affect any development project in the school environment. Effective integration of ICT can hardly thrive in this kind of system.

Poor ICT Policy/Project Implementation Strategy

The Nigerian Federal Government's 1988 policy introduced computer education to the high schools (Okebukola, 1997). The only way this policy was implemented was the distribution of computers to federal government high schools, which were never used for computer education of the students. No effort was made to distribute computer to state governments or private schools. Although the 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. Thus, most schools do not yet offer ICT training programmes (Goshit, 2006). The NEPAD e-Schools Project is expected to take care of an estimated 600,000 African schools. This means that not all schools will benefit from this initiative. Most countries participating in the NEPAD e-Schools Project have an ICT development policy or are creating one, but very few have clear implementation plans (Aginam, 2006)

Lack of/Poor Perception of ICTs among Teachers and Administrators

There is widespread ignorance and misconception about ICTs amongst Nigerians. 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).

Prospects

It is glaring to state that all hope is not lost in the struggle for effective integration of ICT in the Nigerian university system. All that needs to be done is for the Nigerian government and all stake holders to wake up to the challenge of ICT

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integration in the university system. Adequate funds should be made available, steady power supply should be given priority attention, manpower should be trained and especially the university lecturers should be well equipped in the use of computers and computers be made available to them, adequate infrastructure should be provided, there should be total commitment by the university administrators. When these and more are properly addressed, then the prospects will be brighter.

The National Universities Commission (NUC), which is the government agency responsible for registering and regulating universities, prescribed PC ownership for universities as follows: one to every four students, one PC to every two lecturers below the grade of Lecturer 1, one PC per Senior Lecturer, and one notebook per Professor/Reader. While some universities, like the Nnamdi Azikwe University, have achieved a better ratio for their faculty, the same cannot be said for the PC-to-student ratio. However, some universities have made giant strides in campus-wide area networking and e-learning course deliveries. The Obafémi Awolowo University (OAU) boasts of having the best-developed ICT system in the country with its own VSAT access to the Internet and a campus-wide intranet. OAU has embarked on the progressive application of ICT to all its functions and services – academic, research, and administrative. The OAU has more than 6,000 users on more than 1,000 computers distributed in 15 computer laboratories across the campus.

Meanwhile, among the universities, the University of Jos (UNIJOS) is blazing the trail for content development and e-learning in addition to campus networking. UNIJOS, in collaboration with AVOIR (African Virtual Open Initiatives and Resources) and the Carnegie Corporation (USA), has developed e-learning programmes for several departments. One notable achievement is the medicine by e-learning Web site of the Department of Anatomy of UNIJOS that permits students to undertake virtual electronic dissections – a phenomenon believed to be the first of its kind in medical training worldwide. Under a collaborative programme, lecturers from the Universities of Oxford and Cambridge have facilitated courses as part of the ICT initiative sponsored by A.G. Leventis.

The authorities in other universities have organised study tours to the OAU and UNIJOS sites as part of preparatory activities towards the implementation of their own laboratories and campus networks.

The university of Calabar has also established an organized data base center, dealing with admission issues, registration of students, examination results computation, etc. Other universities have also taken bold steps in this direction.

The National Open University of Nigeria (NOUN), established in 2002, has created over 27 study centres across the country. NOUN's dream is to establish study

centres not only in each of the 36 states of the federation but also at local government area in order to make tertiary education available to all citizens. Each NOUN study centre is a computer laboratory/cyber café equipped with a minimum of 25 computers in a Local Area Network (LAN) configuration. The centres are yet to be connected to NOUN's REPRODAhq (repository, reproduction, distribution and administration headquarters) through a wide area network (WAN) to enable the mainstreaming of the following activities: Training and learning, Assessment and testing

Interactive sessions and Communications (e-mail, chat, forums), Internet access, Access to virtual library, Other computer applications. NOUN uses the WAN to deliver distance learning courses to all the study centres. Each study centre has facilitators (instructional and tutorial) and student counsellors responsible for guidance and counselling services to the learners. The facilitators and counsellors are drawn from within the community or nearby communities. NOUN's ICT applications presently cover :Management of student records (on-line application, admission, registration, and exam procedures), Learner management system (e-learning and the virtual library),Communication (e-mail, SMS, video-conferencing, and Internet), Delivery of the human resource and finance courses. The pdf files of these two courses are already available on-line. The goal of NOUN is to use the REPRODAhq to eventually reproduce all course materials in electronic form.

Acquisition of basic ICT skills and capabilities have recently been made mandatory as part of the national minimum standard for teacher education at the Nigeria Certificate of Education and first degree in education levels. Also, some universities in Nigeria have made ICT skills a requirement for continuing and graduating students. Thus, the teacher education colleges have also been impacted by the current ICT revolution.

A great deal of research has proven the benefits to the quality of education (Al-Ansari, 2006). ICTs have the potential to accelerate, enrich, and deepen skills, to motivate and engage students, to help relate school experience to work practices, create economic viability for tomorrow's workers, as well as strengthening teaching and helping schools change. ICT induces scientific, economic, technological, information and multicultural literacy and global awareness. It promotes inventive thinking,. It also gives you a sense of using real-world tools with effective, relevant, and high quality results, It leads to high productivity, can enhance educational efficiency. ICT will offer the university lecturers improvement in the techniques of research.

As far as ICT driven university education is concerned, it holds the key to unlock a lot of difficulties that are hitherto associated with study at higher level. Just

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as cited earlier, in the case of e-Registration, ICT may also serve as data bank for both students and their lecturers to seek relevant and up-to-date information and of course, text books. Thus, removing the known physical library. Through e-mailing and e-chatting, students may submit their assignments or consult with their lecturers without having to meet them physically.

An ICT driven university system takes care of keeping mountain of files in offices as information in them can be processed, stored and retrieved within the university if the systems are networked. Presently, in some universities, students check their examination results on-line as opposed to the usual practise of queuing at the door of the course lecturer to check their results.

Just as it is done in universities in advanced nations where information about each student is made available online for all purpose, Nigerian universities should not be seen as laggards in this practise. It will guide against problems such as cheating, forgery and perjury, as well as assist students in time of problems. But, the rate at which universities in the country are approaching the whole issue of ICT cannot be less encouraging, at a time the world is growing at jet speed. It behoves on the federal government to sit up to face the challenges of integrating ICT fully into the nation's university education by providing necessary and adequate funds as well as other logistics so that learning can be without tears. If formidable steps are taken ,Nigerian university system would be transformed in into what is obtainable elsewhere in the global ICT community.

Conclusion

The use of information and communication technologies no doubt is gaining momentum in Nigerian universities. The Internet is used by faculty, staff and students in sourcing information. Information and communication technologies assist libraries in providing efficient and current information services. Once the staff and students are able to use these technologies effectively, the teaching, learning and research activities in the university will be made easier for the university community. ICT usage will facilitate overall development since there will be free flow of information.

Recommendation

The following recommendations are worthwhile.

- The Nigerian Government should wake up to its duty of funding the promotion, integration and development of ICT in the university system. This will help in the purchase and maintenance of the ICT facilities and more.
- The government should be committed in the provision of basic infrastructure that are required for the effective functioning of ICT in universities

- Efforts should be directed towards the training of manpower resources, this is the best way to ensure participation and effective skill acquisition and use of the ICT facilities.
- The Nigerian government and all stake holders should embark on radical awareness creation on the relevance and significance of ICT .

References

- 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.icaap.org/v7n01/adomi-e01.htm](http://southernlibrarianship.icaap.org/v7n01/adomi-e01.htm).
- Aginam, E. (2006). NEPAD scores students' ICT education in Africa Low. *Vanguard*.
- Al-Ansari, Husain (2006). The Internet use by faculty members of Kuit University. *The Electronic Library*, 26(6):791-803
- Bemah, G. B. (2002). *Internet Information resources usage among undergraduates at the University of Ibadan*, unpublished Thesis, University of Ibadan, Nigeria.
- Ehikhamenor, F. A. (2002). Internet resources and productivity in Nigerian universities. *Journal of Information Science*, 29 (2): 107-115.
- Evoh, C.J. (2007) Policy networks and the transformation of secondary education Through ICTs in Africa: The prospects and challenges of the NEPAD E-schools Initiative. *International Journal of Education and Development Using Information and Communication Technology (IJEDICT)* 3 (1), 64-84. Available: [http:// ijedict. dec.uwi. edu/ include/ getdoc. php? id=2198 &article=272&mode=pdf](http://ijedict.dec.uwi.edu/include/getdoc.php?id=2198&article=272&mode=pdf)
- Goshit, T. (2006). *Nigeria's need for ICT: SP. 259 technology and policy in Africa*. Available: <http://ocw.mit.edu/NR/rdonlyres/Special-Programs/SP-259Spring-2006/891209EE-E63B-4617-BA9D-7635A63C754B/0/goshit.pdf>
- <http://www.vanguardngr.com/articles/2002/features/technology/tec527092006.html> .
- Kinengyere, A. A. (2007) . The effect of information literacy on the utilization of electronic information and resources in selected academic and research institutions in Uganda. *The Electronic Library* 25(3):328-341.

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- Kumar, R. & Kaur, A. (2005). Internet and its use in the Engineering Colleges of Punjab, India: A case study. *Webology* 2(4): 1-22.
- Mogbo, T.C. (2002). Information Technology in environmental education discipline in Nigeria: Need for Improvement. *Journal of Computer Literacy* 3(1): 12-15
- NITDA (2003). *Use IT: National Information Technology Development Agency, Abuja Nigeria*. Available: http://www.nitda.gov.ng/use_it.htm.
- Okebukola, P. (1997). Old, new, and current technology in education. *UNESCO Africa* 14 (15): 7-18.
- Ramzan, M. (2004). Does level of knowledge impact librarians' attitude toward information technology (IT) applications ? 2nd International CALIBER-2004, New Delhi, 11-13 February. Saharan Africa. *African Journal of Library, Archival, and Information Science*
- Tyler, K.D. (1998). *The problem in computer literacy training*. Available: <http://www.ccs.new.edu/home/romulus/papers/mywu/report.htm> .
- Yusuf, M.O. (2005). Information and communication education: Analyzing the Nigerian national policy for information technology. *International Education Journal* 6 (3), 316-321.