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INFORMATION AND COMMUNICATION TECHNOLOGY: A POTENT INSTRUMENT FOR ORGANIZATION AND MANAGEMENT OF TERTIARY SCHOOLS IN NIGERIA

EIMUHI, Justina Onojerena, PhD
Department of Educational Foundations and Management
Faculty of Education; Ambrose Alli University
P.M.B. 14, Ekpoma-Edo State, Nigeria, West Africa.
justinaeimuhi@gmail.com; GSM No: +2348036871999

ABSTRACT

Information and Communication Technology (ICT) is recognized as being increasingly utilized for the purpose of meeting challenges facing humanity. Particularly ICT is helpful in facilitating teaching and learning. Yet the application of ICT to the field of education in Africa, particularly in Nigeria, is limited even at the tertiary level such as being used for documentation of staff files, memoranda, meetings, working documents etc, which helps in reducing problems of school managers and this contributes to national development. This paper examines the necessity for proper utilization and integration of ICT skills and competencies in relation to diverse knowledge and availability of ICT resources. It is therefore evident that ICT is a useful tool of a school manager. The library research method was adopted in this research. This paper recommends that all academic staff should have capacity for computer skills and competences. Finally, enabling environments should be created for ICT to prevail.

Keywords*:* ICT, Instrument, Management, Potent and Organisation.

Introduction

The education in every nation is believed to be a large social service enterprise which is basically made up of pre-primary, primary, secondary and tertiary educational levels. It is also believed to embrace the adult non-formal including the open and distance, special and early childhood education. It is to be noted that the dynamics of social change and the demands on education has always been the reason for the consistent review of the National Policy on Education. According to the Federal Government of Nigeria (FGN, 2013), the consistent review of the national policy on education is engendered by some policy innovations and changes, one of which was the introduction of Information and Communication Technologies (ICT) into the school system and the government is believed to be committed to providing basic infrastructure and training for the realization of this goal at all levels of the education system.

Flowing from the above, the Federal Government of Nigerian re-affirms that education is a potent instrument for solving most of the problems plaguing the nation in order to bring about national development. This implies that the tertiary institutions of learning need to be properly managed to be result oriented. Since education is accepted as a veritable instrument for national

development, it is believed that it is only when it is effectively managed through the assistance of ICT initiatives for set goals to be attained that a sustainable national/economic development can emerge.

Information and Communication Technology (ICT) has become an important driver of everyday life and economic activities in the present world. The on-going technology revolution encompasses new ways of capturing, processing, storing and displaying information and is capable of increasing productivity and competitiveness through information provision (Mangesi, 2010). The importance of ICT is widely recognized both in the workplace and at home (Preston & Cox, 2000). According to Maki (2008), ICT plays a vital role in supporting efficient management and administration in the education sector and it is specified that technology can be used right from student administration to various resource administrations in an educational institution.

It is believed that the effective co-operation of Information Communication Technology in the organization and management of tertiary education has positive effects in its administration. This positive effects may include improvement of the school standards in terms of academics, financial status and in co-curricular activities. Information and Communication Technology (ICT) is an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer, networking, hardware and software, satellite systems and so on, as well as the various services and applications associated with them such as videoconferencing and distance learning. These technologies can be used for school managerial purposes to support and improve the organization of the school.

In line with this, Kirschner and Weperies (2003) opined that information and communication technology can make the school more efficient and productive, by organising a variety of tools to enhance and facilitate teachers' professional activities. Yusuf and Onasanya (2004) also stated that Information Communication Technology provides opportunities for school to communicate with one another through e-mail, mailing list, chat room and other facilities. It provides quicker and easier access to more extensive and current information. ICT can also be used to do complex tasks as it provides researchers with a steady avenue for the dissemination of research reports and findings.

Honey and Mandinach (2003) advanced three major reasons for information and communication technology in education. They, however, suggested that it is a tool for addressing challenges in teaching and learning situation; a change agent; and central force in economic competitiveness. As a tool for addressing challenges in teaching and learning, technology has the capabilities for delivery, management and support of effective teaching and learning. As a change agent, it is capable of changing the content, methods and overall quality and quantity of teaching and learning, thereby reducing teachers' workload and ensuring constructivist inquiry-oriented classroom. Moreover, ICT a central force in economic and social shifts that has technology skill critical to future employment of today's students.

The demand for computer/ICT literacy is increasing in Nigeria, because employees realize that computers 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 a computer literate. With the high demand for computer literacy, the teaching and learning of the skills is a concern among professionals (Oduroye, N.D.). This is also true of other ICT components. New infrastructural techniques that use ICTs provide a different modality of instruments. 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 (Emuku and Emuku, 1999 & 2000).

Necessity for Proper Utilization and Integration of ICT Skills and Competence

Improvement in competence and changes has been happening at an uneven pace in the education sector and most especially in the Nigerian tertiary institutions. Rapid growth in the field of education has made competence in academic sector a very complex task. The 21st century has witnessed tremendous advancements in technology which has led to far-reaching developments in the administrative system. Cost-effective technology combined with the flexibility in learning and administrative activities is essential to enhance efficiency. Computers can be used extensively for educational administration and the following are some of the areas where computers can be used for effective educational administration (Ben-Zion, 1995): general administration, pay roll and financial accounting, administration of student data, inventory management, and personnel records maintenance and library system.

According to Christiana Maki (2008), Information and Communication Technology (ICT) plays a vital role in supporting powerful, efficient management and administration in education sector. It is specified that technology can be used right from student administration to various resource administration in an education institution. Researchers over the years have suggested that there is need for ICT integration into administrative activities of higher education institutions to achieve a high level of competence in the management of tertiary institutions.

There are various ways or strategies incorporating information communication technology and these are sending e-mail notices and agendas to staff, rather than printing and distributing them, Submission of lesson plans through e-mail, foster technology growth by asking parents to write e-mail addresses on medical forms, insist that all teachers create a class web page, attend technology conferences to see what other schools are doing, what other teachers are doing to integrate technology, what principals are doing to encourage the use of technology in their schools and classrooms, admissions through web-enabled services an all day-to-day activities of the institution (general administration) and staff administration.

According to Ashish Kumar and Arun Kumar (2005), Information Technology (IT) as a modern day techno-management tool is

of great importance to institutions of higher education. Gumala (2005) reported that universities have been changing fast due to the development of new Information and Communication Technologies (ICT). The author has mentioned that user satisfaction is a widely used measure of ICT success. Gumala (2005) further stressed that ICT is used in the management of tertiary institutions to support the business strategies and processes of higher education institutions, and a "dynamic new shift occurred in higher education" due to the application of ICT in University administration. This facilitated creation of large and complex institutions that could function with increased efficiency and user-friendliness.

Flowing from the above, Gumala also opined that the usage of ICT in higher education administration involves "harnessing technology for better planning, setting standards, effecting change and monitoring results of the core functions of universities. One of the key conclusions arrived at is that the integration of ICTs in higher education is inevitable (UNESCO, 2009) Olive Mugenda (2006) stated that ICT fosters the dissemination of information and knowledge by separating content from its physical location. This flow of information is largely impervious to geographic boundaries allowing remote communities to become integrated into global networks and making information, knowledge and culture accessible, in theory, to anyone. It is mentioned that Information Communication Technology improves day-to-day management of institutions and the various functional areas in which it could be used are timetabling, student admission and tracking, financial management, medical services, procurement and store management and data distribution and management.

In view of the necessities for the integration and utilization of ICT skills in enhancing competence in tertiary institutions in Nigeria, Magni (2009) stated that the incorporation of ICT in the management of tertiary institutions determines the overall effectiveness of administration. Magni further stressed that ICT helps in providing a good communication system in higher education system. The author also opined that ICT helps in providing timely information to all concerned. Communication could be for internal and external information acquisition and dissemination. It includes communication between the important stakeholders of the system such as sending e-circulars to students, faculty and staff. The dissemination of information about the institution using e-kiosks is also a very important item to be considered. Rajeev Singh (2008) has specified that ICT has played a major role in reducing operational inefficiency and improving decision-making in many areas of governance.

Availability of ICT Resources in Tertiary Schools in Nigeria

Generally, the educational relevance of computers and other components of information technology cannot be over emphasized. From the period when Skinner applied programmed instructions to teaching machines, through Brunner's experiment with computers in instruction, to the current wave of information transmission and storage. Availability is a performance criterion for repairable systems that accounts for both the reliability and maintainability

properties of a component or system. It is defined as the probability that the system is operating properly when it is requested for use. That is, availability is the probability that a system has not failed or undergoing a repair action when it needs to be used. Availability is always associated with time and has to do with the accessibility of system resources in a timely manner; for example, the measurement of a system's uptime.

Availability of ICT facilities and service can be measured by the number of ICT facilities available in academic libraries for students to use in sourcing for information. Lack of such access affects the ability of users to improve their learning with educational software, acquire valuable technology skill. Availability not only means that ICT facilities are provided but it also entails accessibility. Availability is meaningless if those who want to make use of the ICT facilities cannot have access to them. Above all, it is through accessibility that utilization is possible. According to Ogunsola (2004), the utilization of communication tools such as e-mail, fax, computer, Internet, video conferencing, World Wide Web, CD-ROM, overcomes barriers of space and time, and opens new possibilities for learning.

Osuchukwu, Obuezie and Ogwuche (2017) investigated the availability and utilization of information communication technology facilities in a private university library in Nigeria. It employed the descriptive survey design with self-structured questionnaire and observation checklist for data collection. Three hundred students made up the population of the study. The data was analysed using simple frequency, percentages and mean scores. A benchmark of 2.5 was used for acceptance or rejection of data collated. The findings showed that the ICT section has resources and facilities that are available which the students utilized to certain extent. It also showed the frequency of use by the users. Although there are issues as some ICT facilities are not available, thereby not utilized by the students. Other challenges are inadequate assistance from staff, epileptic power supply and irregular internet connectivity among others.

Yusuf, Bashir and Dare (2013) investigated the assessment of the availability, utilization and management of ICT facilities in teaching English Language in secondary schools in Kaduna State, Nigeria. The study adopted a descriptive survey research design. A questionnaire titled "Availability, Utilization and Management of Information and Communication Technology in teaching English Language in Secondary Schools" (AUMICTSS) was used for data collection. Twenty randomly selected secondary schools from Kaduna metropolis were used for the study. A total of 100 teachers participated by responding to the items on the questionnaire. The data collected was analysed using frequencies and percentages. The findings of the study revealed that there is a dearth of ICT facilities in secondary schools in Kaduna as there are only very few of such facilities available in most of the schools visited. It also revealed that most teachers were not competent in the use of these facilities as the management of these facilities requires training and re-training.

Yaku and Obe (2012) carried out a study on Information and Communication Technology and Guidance Counselling education in Jos North Local Government

Area of Plateau State. The target population of this study were all the 200 secondary school tutors and students in Jos North Local Government Council. The students and lecturers in the Department of Computer Science, University of Jos were also targeted for this study. Four hundred respondents were selected for the study, 200 male and 200 female to avoid gender bias. Four research questions and three hypotheses were formulated and tested in this study. Stratified random sampling technique was used in selecting four hundred respondents for the study. Purposive sampling was used to select school administrators and the lecturers. The main instruments for data collection were questionnaire and unstructured interview. From the finding of the study, it was discovered that shortage of manpower, ignorance of policy makers, inability of the machines to respond in human manner and the loss of vital information have been overwhelming phenomena in the use of ICT facilities.

The Interaction between Utilization of ICT and Effective Organization and Management of Tertiary Schools in Nigeria

The management of tertiary schools focuses on various activities in areas such as teaching and learning accounts, management of students' data and general administration. These administrative works are found to have enhanced greatly under the application of ICT. The management of universities is the scientific approach to the management of human and material resources to achieve the goals and objectives of the university. Maki (2008) opined that the usage of information and communication technologies is crucial to university administration. The 1990s witnessed advances in information and communication technologies (ICTs), particularly with the Internet expanding into the public domain. The usage of ICTs, in the university system, involves harnessing of technology for better planning, setting standards, effecting change and monitoring results of the core functions of universities such that the integration of ICTs in higher education is inevitable (UNESCO, 2009).

In view of the interaction between utilization of ICT and effective management of tertiary schools, Ozdmemir and Abrevaya (2007) asserted that ICT is making the provisions for employers and supports enduring learners. According to Hossein Zainally (2008), "Information and Communication technology provides several facilities and possibilities for educational administrators to do their tasks". There is a mention that communication and information systems have changed the very nature of higher education, allowing information to be transferred, stored, retrieved, and processed by almost all who work, study or interact with a given institution.

Deepak (2018) is of the view that there is an increase in managerial effectiveness and efficiency through usage of Information and Communication technologies The various research studies conducted to evaluate the extent of usage of Information and Communication technologies in multiple aspects of higher education revealed that heads of faculties utilized technology in planning, and to a large extent in the supervision and evaluation of academic affairs, student affairs, financial affairs and administrative affairs. Deepak also noted that ICTs give students and

teachers new tools with which to learn and teach in effective manner. ICTs extend opportunities to supervise, coordinate and to control day-today administrative activities of the academic institution in easy and transparent ways. It has been proven by a number of studies that application of ICTs in administrative services is the need of the hour. The areas in education administration where ICTs may play a significant role may depend upon the institutional requirements.

Maki (2008) noted that the usage and integration of ICT relate to the management of university through the personnel administration of students, resources, finance and general administration. The integration of ICTs into this process enhances the overall effectiveness in admission activities of universities by making it more accessible to many (Kwaku & Obeng, 2004). Information and communication technologies and their applications in recent times have offered many opportunities for economic and human development and ICTs decentralise power, democratize information and brings together people, processes and organisations in greater ways than ever before.

Innovation in academics management constitutes the most important tool, and indeed, the very essence of the management function particularly in Educational Management. Innovation is needed for all types of decision and at all levels in the academic management process. It is worthy to point out that most of the problems of academic management innovation in Nigeria may be traced back to the problems of poor management of information on education. In each Ministry of Education, School Board or Educational Institution, there are a wide variety of innovation in the form of correspondence, enrolment figures, accounting department/documents, staff personnel files, staff payroll, circulars, memoranda, minutes of meetings, working documents, student registration/examination records, list of courses, government policies and guideline, etc. Accurate and timely innovative practices on these would reduce the common problems of school management such as:

- Uncompleted education reforms.
- Poor programme scheduling.
- Ghost teachers, students, etc. on school registers.
- Lack of clear idea about available facilities or the facilities needed or that requires repairs.
- Difficulties in finding information needed to take a decision or to respond to an inquiry.
- Unpaid/overpaid teachers' salaries and allowances

It can be strongly said that a good innovative system/practice lies at the center of proper management.

Furthermore, Ohakwe and Okwuanaso (2006) contended that the integration of computer application software's such as spreadsheet, excel, computer-aided design and database are important skills which enables institutional administrators in processing relevant data for the governing bodies, institutional agencies for decision making towards quality assurance and ensuring effectiveness and efficiency in the management of tertiary schools. Specifically, application of ICT to higher education institutions has redefined activities in teaching and learning process, research and information sourcing, administrative services/management of

students' records, as well as communication among teachers, students and others in these institutions.

Conclusion

The use of ICT makes administrative and teaching process more flexible, less time consuming, less expensive and so most of the universities are trying to assume the benefits of ICT. Also, in considering that ICT enhances easy communication is used as a research tool and provides solutions to assignments etc. Therefore, Information Communication Technology is fast becoming an integrative part of national higher education policies and plans all over the world.

Suggestions

It was therefore necessary to recommend that;

1. Educational managers should be able to adapt, adjust and utilize the innovations in the education industry.
2. School boards should provide adequate and timely adaptive innovation practices in educational institutions that would reduce common problems of school management in Nigeria.
3. Government and school leaders should create enabling environments for Information and Communication Technology (ICT) to prevail

REFERENCES

Adomi, E.E. & Anie, S.O. (2006); Tyler (1998). An Assessment of Computer Literacy Skills of Professionals in Nigerian University Libraries. *Hi Tech News 23 (2): 10-14*.

Ahmed, J.U. (2009). Use of ICT in the Private Universities of Bangladesh *International Journal of Educational Administration, 1(1) 77 – 82.*

Ashish Kumar and Arun Kumar (2005),"IT based KM for Institutions of Higher Education A Need" , Paper published in A weekly *Journal of Higher Education* in India from Association of Indian Universities, New Delhi India. *43(30). 25-31*, July.

Awoleye, M.O. (2008). Adoption Assessment of Internet Usage Among Undergraduates in Nigerian Universities - A Case Study Approach *Journal on Technological Management Innovation, 3, (1) 84–89.*

Ben-Zion, B. (1995), *Information Technology in Educational Management*. London: Chapman and Hall.

Christiana Maki (2008),"Information and Communication Technology for Administration and Management for Secondary Schools in Cyprus", *Journal of Online Learning and Teaching Vol. 4 No. 3*.

Deepak, P. (2018). Role of ICT on Universities Administrative Services and Management. *International Research Journal of Engineering and Technology. (IRJET), 5(11), 266-271*

Emuku, U.A. & Emuku, O. (1999 & 2000). Breaking Down the Walls: Computer Application in Correctional/Prison Education. *Benin Journal of Educational Studies. 12/13 (1/2): 64-71*.

Gunmala Suri (2005), "*Organizational Culture in ICT Implementation and Knowledge Management in Spanish and Indian Universities*: A conceptual Model",

published in A Special Interest Groups of CSI.

Honey, M., & Mandinach, E. (2003). A Retrospective in Twenty Years of Educational Technology Policy. Available at *http://www.nationaledtechplan.org/ participate/20years.pdf.*

Kirschner, P. and Woperies, I.G.J.H. (2003). Mind Tools for Teacher Communities: A European Perspective. *Technology, Pedagogy, and Education, 12 (1), 127-149.*

Kwaku, T. O. (2004), "Practical Application Of ICT To Enhance University Education In Ghana", *Feature Article*. Ghana Web 2004.

Magni (2009),"ICT usage in Higher Education", *International Technology and Education and Development Conference, Spain March 9-11 2009.*

Maki, C. (2008). "Information and Communication Technology for Administration and Management for Secondary Schools in Cyprus". *Journal of Online Learning and Teaching, 4 (3), 18-20.*

Mangesi, K. (2010). *A Comparative Study of Approaches to ICT Policy Formulation and Implementation in Ghana and South Africa* (Unpublished master's thesis). University of Kwa-Zulu Natal, South Africa.

Oduroye, A.P. (n.d.). Challenges of Learning and Teaching with Computers. Available: *http://www.itnetwork.org.uk/56.htm*.

Ogunsola, L.A. (2004) Nigerian University Libraries and the Challenges of Globalization: The Way Forward. *Electronic Journal of Academic and Special Librarianship. 5(2-3).*

Ohakwe, S. & Okwuanaso, S. (2006). The Access Centre: Improving Outcomes for all Students K-8 Department of Education Programme. *Office of Special Education*. Washington DC.

Osuchukwu, N. P., Obuezie, A. C & Ogwuche, G. O. (2017). Availability and Utilization of Information Communication Technology Facilities in a Private University Library in Nigeria. Information Impact: *Journal of Information and Knowledge Management, 8(3), 16-25.*

Preston, C. Cox, M. & Cox, K. (2000). Teachers as Innovators: An Evaluation of the Motivation of Teachers to use Information and Communications Technology. *Report Summary*. South Croydon, Miranda Net.

UNESCO (2009). Information and Communication Technology in Education: A Curriculum for Schools and Programme of Teacher Development (Eds. J. Anderson and T. Van Weert), UNESCO, Paris. *http://unesdoc.unesco.org/images/0012/ 001295/129538e.pdf.*

Yusuf, H. O., Bashir, M. & Dare, M. O. (2013). Assessment of the Availability, Utilization and Management of ICT Facilities in Teaching English Language in Secondary Schools in Kaduna State, Nigeria. *Advances in Language and Literary Studies, 4(1), 20-26.*

Yusuf, M.O. and Onasanya, S.A. (2004). *Information and Communication Technology (ICT) and Technology in Tertiary Institution.* In E.A. Ogunsakin (Ed). *Teaching in Tertiary Institutions (67-76).* Ilorin: Faculty of Education.