

Information and Communication Technology (ICT): A Modern Tool for Education Management in Nigerian Universities

Chika C. Uchendu

ABSTRACT

This study investigated the provision of information and communication technology (ICT): A modern tool for management in Cross River State Universities. Ex-post factor design was adopted. To guide the study two hypotheses were formulated. Data collection was carried out using self constructed instrument called information and communication technology education management questionnaire (ICTEMQ). The hypotheses were tested with independent t-test statistical technique at 0.05 alpha level and 166 degree of freedom. Results obtained showed that there is a significant difference between federal and stated universities in their provision of ICT facilities in respect to students' record management, staff record management and financial record management, research and publication, teaching and examination management. It is recommended that Nigerian Government at federal and state level should make more funds available to universities to provide more ICT facilities for educational management.

Contact:

Dr. Chika C. Uchendu Ph.D

Department of Educational Administration and Planning

Faculty of Education

University of Calabar - Nigeria

Email: chikauchendu@yahoo.com

Introduction

Education is a powerful instrument that unlocks the door to modernization and economic growth. It is one of the main keys to development and improvement of mankind. Since education has been shown to be the bedrock for nation building, its quality management is necessary. Information and communication technology (ICT) is a modern tool for education management because it has a critical role to play in development effort in Nigeria.

The issue that ICT integration into education management yields good results is no longer a subject of debate. It has been shown by many researchers that ICT holds

huge benefits for education management. ICT can be used to accelerate, enrich and deepen skills, helps to relate school experiences to work practices, helps to create economic viability for tomorrow's workers contributes to radical changes in school, strengthens teaching and provides opportunities for connections between the institution and the world (Yusuf 2005). ICT can help schools to be more efficient and productive when the tools are available for the academic and non-academic staff.

Aginam (2006) revealed that the level of application of ICT in Nigerian Universities is less than five percent. He further argued that most of these universities have little or no infrastructure for cyber-centers, computer-equipped classrooms or high speed internet and may not have the funds to implement such infrastructure. Initially, educators viewed the use of ICTs in the classroom mainly as a way to teach computer literacy. Most now see a broader role: that of delivering teaching content at lower cost and with higher quality than traditional methods of teaching. In addition, schools and universities increasingly use ICTs, as do other large organizations, to reduce the costs and improve the efficiency of educational administration. The impact of ICT utilization has cut across economics, politics, education, medicine and other fields of human development. It is involved in research, teaching/learning, economic transactions and in the processing and disseminating of information.

ICT is the application of communication technologies consisting of hardware, software, networks and media for collection, storage, processing transmission and presentation of information data, text or image (Qiang 2003). Thioune (2003) views ICT as the possibilities offered by the convergence of data processing technologies, electronic data, media and telecommunication. Yusuf (2005) defined ICT as computer based tools used by people to work with the information and communication processing needs of an organization. It is a broad term that has to do with the harnessing of process, the methods and the product of electronic and communication related technologies, and other related resources in today's knowledge driven society, for enhancing the productivity, the spread and efficiency of a set of programmed activities geared towards the achievement of clearly determined goals. In education, ICTs are tools that comprise electronic devices which are utilized for

information and communication needs of institutions, organizations, students and individuals. These devices include computer (hard and software), networking, telephone, video, multimedia and internet (Onuma 2007). ICT tools for education also includes electronic learning (e-learning), virtual library, virtual laboratory and video conferencing. ICT in context of education is the combination of technologies for collecting, storing, processing, communicating and delivering of information (Ubanu 2005). Oketunji (2001) recommends that University management reappraise their services delivery capabilities by ensuring that they respond adequately to awareness and practical use of ICTS in education management.

Literature Review

ICTs are the modern tools for effective education management. In this rapid changing world, the informational needs of many universities are increasing. ICT becomes an indispensable part of higher educational administration (Yusuf 2005). Aragba-Akpore S. (2004) in his work on E-learning in varsities, identified some key benefits of ICT: access to quality and timely information anywhere, anytime in the country, access to local information through digitizing of local content, reduction in cost of accessing information, preservation of information through electronic resources, reduction in risk of physical journeys to acquire and disseminate information and increase in productivity.

Okorie (2005) research on application of information and communication technology (ICT) in the management of public and private universities observed that private universities provide and applies ICT facilities more than government universities both state and federal. Bassey et al (2007) worked on the impact of technological infrastructures on academic staff work performance in southern Nigerian Universities, and discovered federal universities academic staff faired better than their state universities counterparts in their work performance, owing to the provision of more technological facilities. It was then recommended that government at the federal and state levels should make more funds available to universities to enable them procure more technological infrastructures, so that they can remain relevant in this age of science and technology. Nwafor (2005) study found no significant difference between

the opinion of senior non-academic administrators at the University of Port Harcourt (UNIPORT) and their counterparts at Rivers State University of Science and Technology (RSUST) on the types of information technology systems available for university administration in River State. It was recommended that the two institutions should procure large information technology systems (mainframe computers) for economy, increased speed of information processing and a greater capacity to adapt university administration to changes in the super-highway of new information technology. This study examined the level of provision of ICT facilities for management effectiveness and staff work performance in universities.

Research Methodology

This research was conducted in the southern universities in Nigeria. The federal and state universities are situated in Cross River State-south geo-political zone of Nigeria. Ex-post factor design was adopted for the study. To guide the study, two hypotheses were formulated.

1. There is no significant difference between federal and state universities in their provision of ICT facilities for education management in aspects of students' record management, staff record management and financial record management.
2. There is no significant difference between federal and state universities in their provision of ICT facilities for education management in aspects of research and publication, teaching and examination management.

The population consisted of 468 senior non-academic administrative staff in the federal and 220 in the state. Through stratified random sampling technique, 127 and 101 senior nonacademic administrative staff was selected to constitute the sample. They were drawn from Vice-Chancellors, Registrars, Bursars, Librarians, Deans and HODS offices of the both universities.

Data collection was carried out using researcher's constructed instrument called information and communication technology education management questionnaire (ICTEM). It contained sections A and B. Section A was made up of demographic

variables containing 6 items, while section B was made up of 24 items arranged on 4 point Likert scale, measuring the provision of ICT facilities on education management. The face validity of the instrument was carried out by experts in measurement and evaluation. While the trail test yielded a reliable coefficient of 0.62 to 83, it was considered appropriate for this research. The researcher personally administered the questionnaire to the sampled subjects and the return rate was 100%. Data were analyzed using independent t-test statistical analysis.

Results

Hypothesis one: There is no significant difference between federal and state universities in their provision of ICT facilities for education management in aspects of students' record management, staff record management and financial record management. This hypothesis is tested for significance using independent t-test statistical analysis to compare the mean (\bar{x}) scores of the universities provision of ICT and management effectiveness. The result of the analysis is presented in table 1.

Table 1: Independent t-test statistical analysis of the difference between federal and state Universities provision of ICT facilities management effectiveness

S/N	Variables	Schools	N	X	SD	t-value
1.	Students' record management	Federal State	127 101	21.04 18.22	4.32 4.15	4.24
2.	Staff record Management	Federal State	127 101	23.36 19.52	4.16 4.26	2.58
3.	Financial record Management	Federal State	127 101	20.44 18.48	4.28 4.24	3.20
4.	Overall provision For management effectiveness	Federal State	127 101	56.04 47.81	9.82 8.43	3.15

Significant at 0.5, $df=166$, critical t-value -1.972.

Results presented in table one show that the calculated t-values are 4.24 student's record management, 2.58 - staff record management, 3.20 -financial record management and 3.15 overall provision for management effectiveness, while the critical t-value is 1.972 at 0.05 level of significance and 166 degrees of freedom.

Since the calculated t-values are higher than the critical t-value, null hypothesis is rejected and the alternative hypothesis is accepted. This means that there is a significant difference between federal and state universities in their provision of ICT facilities for education management, in aspects of students' record management, staff record management and financial record management.

Hypothesis Two: There is no significant difference between federal and state universities in their provision of ICT facilities for education management in aspects of research and publication, teaching and examination management. This hypothesis is tested for significance using independent t-test statistical analysis to compare the mean (X) scores of federal and state universities in their provision of ICT facilities and staff work performance. The result of the analysis is presented in table 2.

Table 2: Independent t-test statistical analysis of the difference between federal and state universities in their provision of ICT facilities and staff work performance

S/N	Variables	Schools	N	X	SD	t-value
1.	Research and Publication	Federal State	127 101	19.53 17.38	4.15 4.32	2.89
2.	Teaching Management	Federal State	127 101	18.95 17.04	4.02 3.25	3.25
3.	Examination	Federal State	127 101	19.46 17.95	4.48 4.80	2.86
4.	Overall provision of ICT and Staff work performance	Federal State	127 101	51.34 48.74	8.42 8.78	2.74

Significant at 0.5, df=166, critical t-value -1.972.

Results presented in the above table show that the calculated t-values are 2.89-research and publication, 3.25-teaching, 2.86-examination, 2.74 -overall ICT provision and staff work performance while the critical t-value is 1.972 at 0.05 level of significance and 166 degrees of freedom. Since the calculated t-values are higher than the critical t-value, the null hypothesis is rejected and the alternate hypothesis

is accepted. This means that there is a significant difference between federal and state universities in their provision of ICT facilities for education management in aspects of research and public, teaching and examination management.

Discussion of Findings

Results in Table 1 revealed that there is a significant difference between federal and state universities in their provision of ICT facilities for education management in aspects of students' record management, staff record management and financial record management. This finding concurs with Bassey et al, (2007) that federal universities have significantly higher level of provision of technological infrastructure than their state counterparts.

Nwafor (2005) affirmed that information technology as one of the basic resources for university education and administration. It is just as important as the other resources of manpower, machine, money, material and management. Adeogun (2009) posits that the government should ensure that ICT usage is given its proper place in management education. This finding indicates that federal university is higher in their provision of ICT facilities for management effectiveness. This is true because it enjoys relatively better funding than their state counterparts (Uchendu, 2006).

Result of hypothesis 2 as presented in Table 2 revealed that there is a significant difference between federal and state universities in their provision of ICT facilities for education management in aspects of research and publication, teaching and examination management -staff work performance. This means that the provision of ICT facilities in federal and state universities has significant relationship with staff work performance though the provision is higher in federal university. The major reason for this inadequate provision of ICT facilities is lack of fund. According to Daily Sun 2nd February, (2005) the government allocation to education was 7 percent in 2001 and 6.1 percent in 2002. This poor funding may affect the provision of ICT facilities in Nigeria Universities.

Conclusions

The findings of this research clearly establish that there is a significant difference between federal and state universities in their provision of ICT facilities for education management in aspects of students' record management, staff record management and financial record management. Nigerian Universities are lagging behind in the provision of ICT facilities for education management and if the government does not take urgent action it will affect their efficiency, effectiveness and productivity. There is a significant difference between federal and state universities in their provision of ICT facilities for education management in aspects of research and publication, teaching and examination management-staff work performance.

Recommendation

Nigerian Government at federal and state level should make more funds available to universities to provide more ICT facilities for education management. Universities should allocate more funds to ICT facilities for efficiency, effectiveness and productivity in the institutions.

References

- Adeogun, A. A. and Olisaemeka B. U. (2009). Promoting Teaching Effectiveness using information and communication technology (ICT) in Colleges of Education in Lagos State Nigeria. *International Journal of Higher Education Research*. Vol.4 NO.1.
- Aginam, E. (2006, October 18) Nigerian Higher Education has less than 5% ICT application. Retrieved from file <http://www.vanguardngr.com/articles/htm/on11/2/2007>.
- Aragba-Akpore, S. (2004) E-learning in varsities, others underway. *The Guardian*, 12 October.
- Bassey, U. U., Umoren, G. U., Akuegwu, B. A., Udida, L. A., & Akpama, S. I. (2007). Impact of technological infrastructures on academic staff work performance in southern Nigerian universities. In A. W. Abdul-Ghani, T. J, Sulliwani, H. S. Dhindsa, A. Chamberlain, D. Boorer, K. Wood & A. Baimba (Eds). *Changing contours of education: Future trends* (pp. 113-126). Darussalam: Sultan Hassanul Bolkih Institute of education, University Brunei Darussalam.

Daily Sun Newspaper (2005). Academic Staff Union of Universities. Wednesday 2nd February p.38.

Nwafor, S. O. (2005) Information Technology: A Modern tool for the Administration of Universities in Rivers State. *Nigerian Journal of Educational Administration and Planning* Vol.5 NO.2.

Oketunji, I. (2002) Library and Information Service to the Nation: A Compendium of Papers Presented at the 40th National Annual Conference and AGM of Nigerian Library Association at Eko Lagos. June 16-21 p.3-11.

Okorie, D. N; Agabi, O. G. and Uche, C. M. (2005) Application of Information and Communication Technology (ICT) in the Management of Public and Private Universities. *Nigerian Journal of Educational Administration and Planning*. 5(2).

Onuma, N. (2007) Utilization of Information and Communication Technology in Schools: Problems and Suggestions. In J. B. Babalola, G. O. Akpa, A. O. Ayeni and S. O. Adedeji (Eds) Access, equity and quality in higher education. Lagos: NAEAP.

Qiang C. A., Ayers S. (2003) Contribution of Information and Communication Technologies to growth. World Bank Working Paper NO.24:1.

Thioune R. M. (ed) (2003) Information and Communication Technologies for Development in Africa Vol. 1 Ottawa: International Development Research Centre.

Ubanu, M. (2005) in Njoku, S. (2006). ICT and Nigerian Teachers, Time to catch up with the Rest of the World. Presented at Teachers' Registration Council of Nigeria National ICT Skills Acquisition, Summits and Campaigns for Registered Teachers in Nigeria.

Uchendu, C. C. Akuegwu, B. A. and Nwi-ue, F. D. (2006) Quality Assurance in the Management of Federal and State owned Tertiary Institutions in Imo State. *Nigerian Journal of Educational Administration and Planning*. 6 (1).

Yusuf, M. O. (2005) Information And Communication Technology Analyzing the Nigerian National Policy for IT. *International Education Journal*. 6(3), 316-321.