

INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) FACILITIES AND THE MANAGEMENT OF TERTIARY INSTITUTIONS IN BENUE STATE

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Abstract

This study investigated Information and Communication Technology (ICT) facilities and the management of tertiary institutions in Benue State. Two research questions and two hypotheses guided the study. Descriptive survey research design was adopted for the study. The population of the study was made up of 6,805 academic staff from 12 tertiary institutions of learning in Benue State. A sample of 340 academic staff was selected from 5 higher institutions of learning using stratified random sampling technique. A 10-item structured four-point scale questionnaire titled "Information and Communication Technology (ICT) Facilities Questionnaire (ICTFQ)" with reliability coefficient of 0.82 was used for data collection. Data obtained from the field study were analyzed using descriptive and inferential statistics. Mean and standard deviation were used to answer the research questions while the Chi-square (χ^2) test of goodness of-fit was used to test the null hypotheses at 0.05 level of significance. The findings indicated that internet and computer services have significant influence on the management of tertiary institutions in Benue State Nigeria. It is

recommended among others that tertiary institutional administrators should ensure that all her academic and non-academic staff undergo computer training to enable them know how to use internet on computers to undertake research and enhance effective teaching and learning in their various universities.

Keywords: Information and Communication Technology (ICT), management of tertiary institutions, internet and computer services

Education can be seen as an investment that brings about returns for the individual and society at large. In fact, the economic benefits of education derive not just from increases in cognitive skills, but to a far greater extent from the increase in non-cognitive abilities as reflected by changes in a person's ideas, perceptions and attitudes. Furthermore, it is regarded as an instrument for the wholesome development of individuals in the modern world, especially, in this highly evolving technological environment (Kadzo, 2011). Education is also seen as large social service enterprise made up of pre-primary, primary, secondary (including vocational-technical) and tertiary educational levels. It also embraces the adult non-formal including the open and distance, special and early childhood education (FRN, 2013). The dynamics of social change and the demands on education had always been the reason for the various editions of the National Policy on Nigerian education. The Policy asserts that the fourth edition was necessitated by some policy innovations and changes, one of which was the Introduction of Information and Communication Technologies (ICTs) into the school system.

Moreso, Government of Nigeria in recent years have not only been allocating resources to education but have also been carrying out some educational innovations and reforms which have given birth to the Introduction of Information Communication Technology (ICT) into the education system. This introduction of ICT projects in schools is not far from e-learning which tends to have taken us back to the history of globalization and technological change which have created a new global economy powered by technology, fuelled by information and driven by knowledge. The emergence of this new global economy seems to have serious influence on the management of tertiary institutions. This is because, it seems to have created a better learning environment and improvement in administrative performance of the functions of school administrators.

The term Information and Communication Technologies (ICTs) is currently used to denote a wide range of services, applications and technologies using various types of equipment and software, often running over telecom networks (Heathcote, 2010). They are technologies used to communicate, create, manage and distribute

information. A broad definition of ICT includes computers, the internet, telephone, television, radio, satellite and audio-visual equipment (Wolf & Mackinnon, 2002). The Information and Communication Technology (ICT) is one of the important innovations for modern development. The term ICT comes from the convergence of telecommunication, computing and broadcasting through the use of digital information. It covers any product that will store, retrieve, manipulate, transmit and receive information electronically in a digital form.

In a similar perspective, Njoku (2006), identified three categories of ICT to be processed: information (computer systems), disseminated information (telecommunication systems), and represented information (multi-media systems). Information Technology systems available for tertiary institutions administration in Nigeria have been listed as e-mail, internet, intranet, teleconference, facsimile (Fax), minicomputer, micro-computer, main-frame computer, word processing computer, and basic website (Nwafor, 2005). Moreover, Odeh and Tyokyaa (2014:174) identified common ICT facilities used in secondary school management to include: desktop computer, laptop computer, computer library, computer networking, scanning machine, printing machine, photocopy machine, internet, satellite dish for global information, e-mail service and internet phone. Others are: school cyber café, school world-wide-web (www), school virtual library, digital satellite television (DSTV), fax-mail machine, public address system, audio tape player, digital camera, electronic classroom, examination scoring machine and counting machine. According to Odeh and Tyokyaa, the use of these ICT facilities in administration of tertiary institutional functions will likely enhance efficiency and effectiveness in the achievement of set objectives. Though, the main focus of this study is on the use of internet and computer services which as speculated by relevant educational stakeholders in the study area, may have influence on the management of tertiary institutions.

Internet is an ICT facility which is observed by the researcher to have likely influence on the management of tertiary institutions in the study area. Internet is a conglomerate of thousands of computer networks, utilizing a common set of technical protocols to create a worldwide communication medium (Imoko, 2006). According to Bill (2000), the internet carries an extremely large number of network services including the worldwide web, electronic mail, internet phone, audio, video and file transfer. Internet services play an important role in teaching and learning process at university level and provide superior assistance to its users. Tgwugh and Nevkar (2006) observe that Internet devices and services have been used in education dating as far back as 1920's. They identify radio, television, audio-visual and even school telephone as facets of internet devices in education. Currently, instructional software, E-mail and the worldwide web (www) is added to the catalogue of internet devices that are used in the school system both for administrative and teaching efficiency.

Commenting on the role of internet in the management of institutions, Blurton (2005) asserted that, the internet and its services are vital parts of the educational process. The awareness of it provides staff resources for learning, tutorials, lesson plans and courses are available online for both students and staff usage to enhance performance. Similarly, Tiough and Nevkar (2006) stated that through the internet, team work, shared intelligence, problem solving and high level skills can be achieved by teaching staff for enhanced performance. Also, learners will be linked to information sources by teachers, learners, progress can be better monitored. In the opinions of Long (2009), internet is a valuable source of information for students looking for ideas for project and assignments. Anosike (2003, p.94) maintains that “the internet is advantageous in almost every sphere of life especially in education. According to Anosike, internet is informative, educative, entertaining, improves financial transactions of the institution and many more.

Computer is also another ICT facility which may have influence on the management of tertiary institutions as observed by the researcher. A computer according to Stokes (2007) is a general purpose device that can be programmed to carry out a set of arithmetic or logical operations automatically. Since a sequence of operations can be readily changed, the computer can solve more than one kind of problem. Nakpodia (2000) states that computer hardware and software introduced into Nigerian school system are used for adequate storage, manipulation, utilization and retrieval of records. The use of computer technology thus reduces the manual task of managing records. In the same vein, Kimberly (2014) posits that, computers are great resources for school administrators and teachers. They can find suggestions, practical support and materials on the internet that can boost or enhance their performance.

In another perspective, Aduwa-Ogiegbaen and Iyam (2005) posit that computers could help in facilitating administration functions by replacing laborious paper work in the filing of records accumulated over a long period. They can further facilitate budgeting and accounting on expenditure and correspondences by reducing paper work. Similarly, Abdullah (2002) notes that administrators use computers in the library to manage and improve lending of books, support curriculum and access to information and facilitate collaboration and promote equity. This brings improved circulation of resources, extensive reporting, efficient book issue system and increased access to resource collection.

Reporting the importance of ICT in the management of institutions, Babalola (2007), notes a major reform and development in tertiary education to be significant improvements in communication and ICTs growth with its positive influence on teaching and research technologies. Moreover, a major tertiary education reform recommended by the World Bank (2002) was that there should be electronic networking involving e-mail communication capacities for teaching, learning, research, management and performance monitoring of systems. The Association of Nigerian Universities

according to Emetarom (2001), believes that the tertiary institutions should be sensitized to improve their management practices, especially their records and data collection processes, with a view to implementing Management Information Systems (MIS) and strategic planning of their programs. Because of the enormous volume of information to be managed in the university of Today, it is apparent that the computerized MIS is a *sine qua non* for effective goal attainment. Such situation seems not happen without exception of tertiary institutions in the study area which has demands investigation. It is against this background that this study was undertaken to investigate Information and Communication Technology (ICT) facilities and the management of tertiary institutions in Benue State with particular focus on internet and computer.

Statement of the Problem

There has been much concern expressed by educational stakeholders in recent years over the importance of Information and Communication Technology (ICT) use in institutions of learning today. Their emphasis on the use of ICT facilities in institutions of learning is born from the fact that there has been a significant paradigm shifts of the entire society from the traditional or manual way of doing things especially handling of some administrative issue and teaching to that of the digital way. Even though with this agitation for the use of ICT in tertiary institutions in particular, there has been some irregularities such as: the use of files in records keeping, manual typewriter in typing and use of textbooks among others.

The use of these conventional facilities seems to cause delay as well as make it difficult to handle both administrative and teaching task. This scenario seem to have bordered the relevant educational stakeholders particularly as it seem to be attributed to lukewarm attitude of some school administrators and teachers in undertaking courses in ICT so as to be vast in knowledge of the se of ICT facilities in enhancing the smooth management of the institutions. The researcher also observed that lecturers find it difficult to get materials for their lessons where as school administrators use much time to handle office issues. Registration of new and old students also seem to be a problem as it takes a long period of time for some tertiary institutions to finish semester registration and start lectures using the old form of handling administrative issues.

Based on such irregularities in handling administrative and teaching functions in institutions of learning, one may wonder if there are no alternatives means that would bring about effectiveness and efficiency. The researcher is thus, interested in finding out the situation in the study area whereby, schools administrators and teachers seem to have been largely held responsible for ineffectiveness and inefficiency in the management of institutions. Thus, the problem of this study stated in question form therefore is: How has Information and Communication Technology (ICT) facilities influence the management of tertiary institutions in Benue State, Nigeria?

Purpose of the Study

The main purpose of this study was to investigate Information and Communication Technology (ICT) facilities and the management of tertiary institutions in Benue State. Specifically, the study sought to:

1. ascertain the influence of internet on the management of tertiary institutions in Benue State, Nigeria.
2. ascertain the influence of computer on the management of tertiary institutions in Benue State.

Research Questions

The study was guided by the following research questions.

1. What is the influence of internet on the management of tertiary institutions in Benue State, Nigeria?
2. What is the influence of computer on the management of tertiary institutions in Benue State?

Hypotheses

The following hypotheses were formulated and tested at 0.05 level of significance.

- Ho₁. Internet has no significant influence on the management of tertiary institutions in Benue State, Nigeria.
- Ho₂. Computer has no significant influence on the management of tertiary institutions in Benue State.

Methodology

The study adopted the use of descriptive survey design which is one in which a group of people or items are studied by collecting and analyzing data from a few people considered to be representative of the entire population (Emaikwu, 2011). The study was confined to Benue State, Nigeria which comprised of 23 local government areas. The population of the study comprised 6,805 academic staff from 12 tertiary institutions of learning in Benue State. A sample of 340 academic staff was selected from 5 higher institutions of learning using stratified random sampling technique. A 10-item structured four-point scale questionnaire titled “Information and Communication Technology (ICT) Facilities Questionnaire (ICTFQ)” with reliability coefficient of 0.82 was used for data collection. The instrument used for data collection was constructed four point rating scale with a response mode of Strongly Agree (SA) = 4, Agree (A) = 3, Disagree (D) = 2 and Strongly Disagree (SD) = 1. The instrument was validated by two experts, one in Educational Management and one in Measurement and Measurement in Benue State University, Makurdi. The reliability of the instrument was conducted on 10 lecturers in two private tertiary institutions that were not part of the sample for the study and a reliability coefficient of .82 was obtained which showed that the instrument was reliable

to use for the study. Descriptive statistics of mean and standard deviation were used to answer the research questions. A mean cut-off point of 2.50 was used for decision making. Any mean score of 2.50 and above was regarded as having the desired influence while any mean score below 2.50 was regarded as not having influence. The hypotheses were tested using chi-square (χ^2) test of goodness of fit at .05 level of significance.

Results and Findings

This section presented and discussed the results of the study.

Research Question One

What is the influence of internet on the management of tertiary institutions in Benue State, Nigeria?

Table 1: Mean Ratings and Standard Deviations of the Respondents on the Influence of Internet on the Management of Tertiary Institutions in Benue State, Nigeria

Item No	Item Description	SA	A	D	SD	X	SD	Decision
1	Internet help lecturers get lecture materials at easy.	189	120	21	13	3.41	0.77	Agree
2	Through internet, the school save some documents in their website for future use.	171	142	11	16	3.38	0.76	Agree
3	Lecturers use internet to send papers for publications easily.	201	108	7	24	3.43	0.84	Agree
4	School administrators and lecturers use do not use internet to send and receive information easily.	14	9	181	136	2.26	0.90	Disagree
5	It is difficult for school management to get update on recent happenings on educational matters without internet.	166	148	19	7	3.39	0.69	Agree
Cluster Mean/Standard Deviation						3.17	0.79	Agree

Data on Table 1 shows that the mean rating for items 1-5 were 3.41, 3.38, 3.43, 2.26 and 3.39 respectively with their corresponding standard deviations of 0.77, 0.76, 0.84, 0.90 and 0.69. Based on the decision rule, it means that respondents accepted item 1, 2, 3 and 5 in the cluster that have mean scores above the cut-off point of 2.50. Mean while item 4 was not accepted hence it is below the cut-off mark of 2.50. The standard deviation scores of the respondents are small signifying homogeneity for the items raised. The cluster mean of 3.17 was also found to be above the cut-off point of 2.50. This implies that internet influence the management of tertiary institutions in Benue State, Nigeria.

Research Question Two:

What is the influence of computer on the management of tertiary institutions in Benue State?

Table 2: Mean Ratings and Standard Deviation of the Respondents on Influence of Computer on the Management of Tertiary Institutions in Benue State

Item No	Item Description	SA	A	D	SD	X	SD	Decision
6	Computer is used by schools administrators to save and retrieve information for future use.	192	126	12	10	3.47	0.71	Agree
7	Large volume of work like calculations of finances within a short period of time is done using computer.	174	117	21	28	3.29	0.91	Agree
8	The use of computers in tertiary institutions of learning enhances easy registration of new and old students.	137	149	15	39	3.13	0.94	Agree
9	It takes several days for both new and old students of the institutions to register their courses without the use of computer.	198	129	8	5	3.53	0.62	Strongly Agree
10	The use of computer technology does not help to reduce the manual task of managing records.	11	7	212	110	1.33	0.82	Strongly Disagree
Cluster Mean						2.95	0.80	Agree

Data on table 2 indicates that the mean ratings for items 6–10 were 3.47, 3.29, 3.13, 3.53 and 1.33 with their corresponding standard deviations of 0.71, 0.91, 0.94, 0.62 and 0.82. Based on the decision rule, it means that respondents accepted item 6, 7, 8 and 9 in the cluster that have mean scores above the cut-off point of 2.50. Meanwhile, item 10 was not accepted because it had mean score below the cut-off mark of 2.50. The standard deviation scores of the respondents are small signifying homogeneity for the items raised. The cluster mean of 2.95 was also found to be above the cut-off point of 2.50. This implies that computer influence the management of tertiary institutions in Benue State.

Testing of Hypotheses

Hypotheses One:

Internet has no significant influence on the management of tertiary institutions in Benue State, Nigeria.

Table 3: Chi-square test of the Influence of Internet on the Management of Tertiary Institutions in Benue State, Nigeria

Opinions	Observed N	Expected N	Residual	Level of Sig.	df	χ^2 -cal	P-value	Decision
SD	13	85.0	-72.0	0.05	3	254.71	0.00	Sig.
D	14	85.0	-71.0					
A	132	85.0	47.0					
SA	181	85.0	96.0					

a. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 85.5.

Table 3 revealed that $\chi^2=254.71$ at $df=3$ and $p=0.00$. Since p -value of $0.00 < 0.05$ at 3 degree of freedom, the null hypothesis which states that internet has no significant influence on the management of tertiary institutions in Benue State, Nigeria is therefore, rejected. This implies that internet has significant influence on the management of tertiary institutions in Benue State, Nigeria.

Hypotheses 4:

Computer has no significant influence on the management of tertiary institutions in Benue State..

Table 4: Chi-Square test of the Influence of Computer on the Management of Tertiary Institutions in Benue State

Opinions	Observed N	Expected N	Residual	Level of Sig.	df	χ^2 -cal	P-value	Decision
SD	13	85.0	-72.0	0.05	3	287.74	0.00	Sig.
D	8	85.0	-77.0					
A	126	85.0	41.0					
SA	193	85.0	108.0					

a. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 85.5.

Table 4 revealed that $\chi^2=287.74$ at $df=3$ and $p=0.00$. Since p -value of $0.00 < 0.05$ at 3 degree of freedom, the null hypothesis which states that computer has no significant

influence on the management of tertiary institutions in Benue State was therefore, rejected. This implies that computer has significant influence on the management of tertiary institutions in Benue State.

Discussion of Findings

The first finding of the study indicates that internet has significant influence on the management of tertiary institutions in Benue State, Nigeria. This finding supports Bill (2000) who states that internet carries an extremely large number of network services including the worldwide web, electronic mail, internet phone, audio, video and file transfer. Bill further states that internet services play an important role in teaching and learning process at institutional level and provide superior assistance to its users. The finding is also in agreement with Tgwugh and Nevkar (2006) who observe that internet devices and services have been used in education dating as far back as 1920's. They identify radio, television, audio-visual and even school telephone as facets of internet devices in education. Currently, instructional software, E-mail and the worldwide web (www) is added to the catalogue of internet devices that are used in the school system both for administrative and teaching efficiency. The finding also relates with Blurton (2005) who asserts that, the internet and its services are vital parts of the educational process. The awareness of it provides staff resources for learning, tutorials, lesson plans and courses are available online for both students and staff usage to enhance performance.

The second finding of this study revealed that computer has significant influence on the management of tertiary institutions in Benue State. This finding is in agreement with Nakpodia (2000) states that computer hardware and software introduced into Nigerian school system are used for adequate storage, manipulation, utilization and retrieval of records. The use of computer technology thus reduces the manual task of managing records. In the same vein, Kimberly (2014) posits that, computers are great resources for school administrators and teachers. They can find suggestions, practical support and materials on the internet that can boost or enhance their performance. The finding is also in line with Aduwa-Ogiegbaen and Iyam (2005) who posit that computers could help in facilitating administration functions by replacing laborious paper work in the filing of records accumulated over a long period. They can further facilitate budgeting and accounting on expenditure and correspondences by reducing paper work.

Conclusion

Based on the results of the study, it was concluded that Information and Communication Technology (ICT) facilities such as: internet and computer services have significant influence on the management of tertiary institutions in Benue State Nigeria.

Recommendations

Based on the findings of this study, it is recommended as follows;

1. Tertiary institutions administrators should ensure that all her academic and non-academic staff undergo computer training to enable them know how to use internet so as to enhance research, effective teaching and learning in their various institutions.
2. Administrators of tertiary institutions should make adequate provision of computers in their respective institutions and encourage its use for both administrative and teaching purposes. This will go a long way in enhancing effective and efficiency in school administration.

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