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University Administrators' Use of Information and Communication Technology for Information Dissemination in the University Environment and Productivity of Academic Staff of Universities in Anambra State, Nigeria

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ABSTRACT

This study investigated information and communications technology in the university environment and academic staff productivity in universities in Anambra State of Nigeria. Two hypotheses were formulated to guide the study. Stratified random sampling technique was used to draw a sample of 300 academic staff from a total population of 1998 academic staff of the two public universities in the State. Data collection was carried out with the use of researchers-constructed questionnaire titled ICT Use for Information Dissemination in the University Environment and Academic Staff Productivity Questionnaire (ICTUIDUEASPQ). The instrument was face-validated by experts in Measurement and Evaluation in University of Calabar. It reliability coefficient ranged from 0.73 to 0.86. Population t-test and Pearson product moment correlation analysis (r) was used in analyzing the obtained data. Results obtained revealed that availability of ICT facilities for information dissemination in the university environment in Universities in Anambra State, Nigeria, is significantly low; and there is a significant relationship between ICT-based information dissemination to academic staff productivity and academic staff's actual productivity. Based on these results, recommendations were made to enhance the provision and utilization of ICT facilities for information dissemination purposes in Nigerian universities.

Key words: ICT facilities, Information dissemination, University environment, productivity, academic staff.

INTRODUCTION

University Education plays a major role in the quest for national development and socio-economic self-reliance of any nation. Ayeni (2005) asserted that the mission of university education is generally teaching, research, publication and social service for the production of qualitative graduates worthy in learning and character. It is also connected to the creation of up-to-date knowledge and innovation for the total socio – economic and even the political development of a given nation. The above activities are used to measure the productivity of academic staff of universities. However, in order for the production of qualitative graduates and in ensuring that research occupies its pride of place, there is the need for adequate funding of the university system in order to procure necessary tools for the acquisition of information for research, the processing of information and the dissemination of information in the university environment.

Information dissemination is defined by Oweono (2013) as the process whereby knowledge is enclosed in a package and transmitted or communicated from sender to a receiver via some medium. According to Mgbekem (2004), information giving and receiving is the life wire of university management. He further asserted that when people pass information to one another, they are engaged in communication. The receiver decodes the message and gives the sender a feedback based on his/her level of understanding or interpretation of the message.

In the university system, academic staff are the ones who transmit educational objectives into knowledge and who transfer them to students in the classroom. The Vice-Chancellor, on his/her part disseminates information to academic staff, non-academic staff and students routinely in order to ensure organizational health. The rationale for information dissemination in the university system as highlighted by Mgbekem (2004) are to influence the performance of academic staff and non -academic staff; clarify positions, objectives and purposes of certain obscure proposals and in introducing new plan (s); serves as input-inviting mechanism from subordinates and, controls behavior, attitudes and the thinking of subordinates.

Obi (2004) made it known that the way the leader in any organization propagates information to the staff could either motivate them toward higher productivity or plummet their morale in terms of job dissatisfaction. He further warned that the lack of information flow in the school organization could hamper teachers' productivity. The dissemination of information,

according to Lunenburg & Ornstein (2012), can be done orally, in writing, or through the use of modern information and communications technology (ICT) resources.

Olotu (2010) revealed that most universities in Nigeria lacked modern ICT facilities which have become the hallmark of effective information diffusion in the twenty first century. Information and communications technology (ICT) are diverse sets of technological tools and resources employed to communicate, disseminate, store and manage information (Collins, 2008). These technological tools according to Collins (2008) include: computers, the internet, intranet, radio, television, and telecommunications (via global system of mobile communication i.e. GSM), e-mail, CD ROMs, disks drive and projectors. While it is arguably true that in universities in developed countries such as the United States of America, Britain, Japan, Canada, and Germany, these technologies have increased academic staff productivity in various dimensions. The problem of inadequacy and underutilization of these technologies is still noticed in most Nigerian universities.

Lawal (2010) in a study revealed that 68 percent of academic staff expressed ignorance of most of their institutions' and the federal governments' current ICT-based programmes and policies on educational issues such as staff welfare, school curriculum/programmes, fee payments, university funding, admissions, staff development programmes, scholarships, linkage programmes and research grants. Lawal (2010) further made it known that the academic staff studied attributed this to lack of proper information dissemination by the university management concerning such programmes and policies. This has made academic staff unable to apply for and benefit from the opportunities offered by such programmes in order to prove their level of productivity once the communication on them are done online.

Most universities in Nigeria fail to update their websites periodically while others do not emphasize to their academic staff to own personal functional e-mail addresses through which information could be imparted to them (Lulu, 2011). Udum (2014) lamented that most academic staff of Nigerian universities are not computer and ICT-compliant and, therefore, still rely solely on the archaic analogue methods of disseminating information though board or committee meetings, the use of the lecture method for teaching, the use of the bulletin/notice boards and the pasting of posters, letters, and memoranda on walls which all have the tendency to either modify, delay or thwart information.

Ugonna (2009) asserted that due to globalization and the emerging challenges accompanying it the world over, most programme applications as well as pedagogical and research materials are now internet-based. As such, academic staff who are not literate in ICT are inhibited in their different areas of productivity including: research, development of course materials and content, students' evaluation, and lesson presentation among others. Perhaps this explains why Okogie (2008) the National Universities Commissions' (NUC) Executive Secretary, declared that most Nigerian university teachers are incompetent.

The formal observations of Aginam (2006) is that most Nigerian universities have little or no infrastructure for cyber cafes, computer-equipped classrooms or high-speed internet availability and do not even have the capacity to operate implement such infrastructure on their own. In addition to these are the problems of irregular power supply, unpredictable telephone lines, low level of internet connectivity as well as inadequacy in internet bandwidth among other. Salisu (2012) affirmed that the impact of ICT use in education is vital and unavoidable because its proper integration into the education process increases educational productivity. The use of ICT facilities in education provides various opportunities to learners and makes teachers at any educational level aware of new trends, their new roles and responsibilities in teaching and learning process and in fostering national and international collaborations. (Saraki, 2008).

Moses (2012) held that the use of information and communication technology in schools helps educational administrators to discharge various functions such as planning, coordination and dissemination of information to teachers regardless of time and distance. Urvai (2014) stated that lecturers with good knowledge and skills in the use of ICT in today's knowledge-driven economy will be able to easily access information on the internet and utilize their ICT skills in up-to-date research, quality instructional delivery, curriculum planning and lecture content design. This study is, hence, necessitated by the need to see if harnessing university administrators' use of ICT to adequately disseminate information in the university environment could relate to the productivity of the academic staff in Anabra State, Nigeria.

The problem

The place of information dissemination in the university environment for ensuring the productivity of academic staff cannot be overemphasized. Effective information dissemination can be made possible through the use of modern ICT facilities coupled with the ability of university management to become committed to frequent and adequate dissemination of information to

their academic staff. However, these facilities are grossly inadequate in Nigerian universities and especially in public universities in Anambra State due to the inability of the government to adequately fund the education sector, as compared to what is happening in developed countries. These have had adverse effects on academic staff productivity while the nation is on the receiving end of the consequences of insufficient supply of these facilities. The issue tends to invite the question, "What relationship exists between university administrators' use of ICT for information dissemination in the university environment and academic staff productivity?"

Hypotheses

1. Availability of ICT facilities for information dissemination in the university environment is not significantly low.
2. There is no significant relationship between ICT facilities for information dissemination in the university environment and academic staff productivity.

METHODOLOGY

The study adopted a survey research design. The study area was Anambra State of Nigeria with two public universities, namely: Nnamdi Azikiwe University, Awka; and Anambra State University of Science and Technology, Uli whose academic staff total was one thousand nine hundred and ninety eight (1,998) persons. This constituted the study's population. Using the stratified random sampling technique, 300 academic staff were drawn. Data collection was carried out with the use of researchers-constructed questionnaire titled "ICT for Information Dissemination in the University Environment and Academic Staff Productivity Questionnaire (IIDUEASPQ). It had two sections - A and B. Section A sought information on demographic variables while Section B had 20 items arranged on a four-point rating scale. Ten of the items measured availability of ICT facilities for information dissemination while the other 10 measured the relationship between the use of ICT facilities for information dissemination and academic staff productivity. The pilot test yielded a Cronbach reliability coefficient ranging from 0.73 to 0.86, which was deemed good enough for the study. The instrument was face-validated by experts in Measurement and Evaluation. The administration of the instrument was personally carried out by the

researchers with two trained research assistants, a measure which yielded 100 percent filled questionnaire return rate. Population t-test (i.e. test of single mean) and Pearson product moment correlation(r) statistical techniques were used to analyze data obtained for the study.

RESULTS

Hypothesis one

Availability of ICT facilities for information dissemination in universities is not significantly low. Summary of the results is presented in Table 1.

Table 1: Population t-test analysis of availability of ICT facilities for information dissemination in universities (n = 300).

	Expected mean	Observed Mean		
	μ		SD	T
Computers	5.50	6.95	.6760	46.514*
Local Area Networking	5.50	6.8	.7498	38.710*
Internet Connectivity	5.50	6.98	.5622	56.700*
Multi-Media Projectors	5.50	6.97	.8096	39.221*
Global System for Mobile Communication (GSM)	5.50	2.37	.4846	-87.416
Electronic Conferencing	5.50	6.50	.8677	27.946*
Audio-Visual Recording	5.50	6.55	.6873	36.364*
Electronic Mailing	5.50	7.00	.5862	54.909*
Institutional Website	5.50	6.99	.6500	63.639*

*p<.05; df = 299; Critical t-value = 1.968

Results from table 1 showed that the calculated t-values were higher than the critical t-value of 1.968 at 0.05 alpha level and 299 degrees of freedom in respect of computers (t = 46.514, p < .05); Local area networking (t =38.710, p <. 05); internet connectivity (t = 56.700, p <.05); multimedia projectors (t = 39.221, p <.05); electronic conferencing(t = 27.946, p <.05); audio-visual recording (t =36.364, p<.05); electronic mailing (t =54.909, p<.05);

institutional website (t = -63.639, p <.05).This means the availability of these eight ICT facilities for information dissemination in universities is significantly low. With regards to Global System for Mobile Communication (t = -87.416, p<.05) the calculated t-value were lower than the critical t-value, at .05 alpha level and with 299 degrees of freedom. This implies that availability of this one ICT facility for information dissemination was not significantly low.

Further observation of the results in Table 1 indicated that the observed mean availability of ICT facilities for information dissemination in universities was higher for eight of the ICT facilities than the expected mean availability of ICT facilities of 5.50, whereas in the remaining one, it was lower. Statistical comparison of these observed mean values and the expected mean value of 5.50 using population t-test analysis for single mean, positive t-values were obtained for the former, while negative t-values were obtained for the latter. By implication, these findings revealed that the availability of ICT facilities for information dissemination in universities is significantly low except for Global System for Mobile Communication (GSM).

Hypothesis two:

There is no significant relationship between use of ICT facilities for information dissemination in the university environment and academic staff productivity. Using the One-way analysis of variance (ANOVA), the relationship between the two variables: ICT facilities for information dissemination and academic staff productivity were determined. The summary of the result is presented in the Table 2. From Table 2, the calculated r-value of 0.560 is greater than the critical r-value of 0.113 at .05 level of significance with 298 degrees of freedom. With this result the null hypothesis was rejected and the alternate hypothesis accepted. This finding implies that there is a significant relationship between information dissemination in the university environment and academic staff productivity.

DISCUSSION

The result of hypothesis one had it that the availability of ICT facilities for information dissemination in universities in Anambra State is significantly low except for Global System for Mobile Communication (GSM). With this finding, the null hypothesis was rejected in eight of the ICT facilities and

retained in one of the ICT facilities' availability for information dissemination.

Table 2: Pearson product moment correlation coefficient analysis of the relationship between university administrators' information dissemination with ICT and academic staff productivity (n=300)

Variables	Σx Σy	Σx^2 Σy^2	Σxy	r_{xy}
Information Dissemination with ICT facilities(X)	4,943	94,097		
			94,0788	0.560*
Academic staff productivity(Y)	4,945	94,163		

* $p < .05$, critical r =0.113,df =298

By implication this result suggests that the availability of computers, Local area networking, internet connectivity, multi-media projectors, electronic conferencing, audio-visual recording, and electronic mailing, and institutional website is very low for information dissemination in the universities studied. This means that these eight facilities were not available in such a way that university lecturers in the two universities could utilize them to enhance the quality of their productivity in terms of research, development of course materials and content, students' evaluation and lesson presentation. However, the availability of Global System for Mobile Communication (GSM) in the two universities was found not to be significantly low. The reason for this general, low availability of ICT facilities for information dissemination in universities in Anambra State stems from inadequate provision of these facilities occasioned by poor funding of education by Federal and State governments. The poor funding resulting from inadequate budget allocations to education which for years running are far below the 26 percent education funding benchmark espoused by UNESCO, has contributed to low level of provision of these ICT facilities in Anambra schools (Onuma, 2007). This poses serious problems in the universities where ICT facilities are needed not just for assisting in instruction but also in supplying and receiving global information which facilitates research in different subject areas. Furthermore, the low availability of institutional website according to the result could be attributed

to the inability of management of the universities, under study, to frequently update their websites with current events and information which should be of great benefit to academic staff. Conversely, the high availability of GSM in the two universities could be attributed to the fact that virtually every academic staff owns a mobile phone for both personal usage and for communication with colleagues. Despite this, the management of the universities studied are still lagging behind in adequate utilization of GSM to disseminate information to academic staff effectively.

The result of hypothesis two held that there is a significant relationship between information dissemination in the university environment and academic staff productivity. This necessitated the rejection of the null hypothesis and retention of the alternate hypothesis. It implies that the use of ICT for information dissemination will enhance academic staff productivity in terms of research, development of course materials and content, mastery of subject matter, students' evaluation and lesson presentation.This finding is in agreement with Urvai (2014) who stated that lecturers with good knowledge and skills in the use of ICT in today's knowledge driven economy will be able to easily access information on the internet and use their ICT skills in up-to-date research, quality instructional delivery, curriculum planning and content design. Similarly, the findings is in consonance with Moses' (2012) research which lead him to hold that ICT in schools could assist educational administrators to discharge effectively various functions such as planning, coordination and dissemination of information to teachers regardless of time and distance. ICT provides innovative opportunities for teaching and learning, creates advances in research which enable lecturers to improve their content knowledge in different subject areas, and concretize learning by enabling the students to manipulate the facilities. These help to improve the quality of instructional service delivery while the use of old methods of disseminating information in universities will greatly hamper academic staff productivity.

CONCLUSION

The results of this study have clearly shown that the availability of ICT facilities for information dissemination in universities are very low. This is a serious limitation to the productivity of academic staff in contemporary ICT era. It was concluded that there is a significant relationship between the use of ICT facilities for information dissemination in the university environment

and academic staff productivity in terms of research, development of course materials and content, students' evaluation and lesson presentation in Anambra State, Nigeria.

RECOMMENDATIONS

Based on the findings of this study the following recommendations were made:

1. Government should adequately provide functional ICT facilities to universities for use in disseminating information and in teaching and learning.
2. University Administrators should organize training for academic staff on the use of ICT facilities to fast-track innovations and changes in Education in this twenty-first century.
3. University administrators should also endeavor to make good use of modern ICT facilities in circulating information to academic staff in order to enhance their productivity and accord with best practices.

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