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# **GATEWAY LIBRARY JOURNAL**

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## ACADEMIC STAFF UTILISATION OF INFORMATION AND COMMUNICATION TECHNOLOGIES (ICTS) IN NIGERIAN TERTIARY INSTITUTIONS: A STUDY OF TEN SELECTED UNIVERSITIES

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### ABSTRACT

*This study examined the availability and usage of Information and Communication Technologies (ICT) by academic staff in ten selected Nigerian tertiary institutions. Data was collected using the questionnaire method. 172 copies of a questionnaire were mailed to academic staff in the 10 institutions studied out of which 136 copies were returned representing 76.2% response rate. Analysis of the questionnaire revealed the level of ICT competence and rate of ICT adoption by the academic communities vis-à-vis the facilities on ground as well as the various ways it is being used. The outcome of the study showed that ICT is gradually being accepted by tertiary institutions in Nigeria.*

Keywords: ICT, Tertiary Institutions, Availability, Utilization, Use.

### INTRODUCTION

The implementation of information and communication technologies (ICTs) has received widespread attention and to a certain extent has taken a central place in many areas of personal and institutional management. Reasonable integration of ICTs into the processes of production and administration has given rise to new forms of work organisation, management and planning which has helped in the process of production operations, control, quality control and information transfer as well as facilitate the process of adaptation to the ongoing evolution of the current economic, social and cultural environment (Hafaied, 1996). This observation is also applicable worldwide in the management and delivery of education. The education sector and tertiary institutions in particular are becoming primary users of ICTs and this trend has been driven by the recognition of the fact that ICTs provide for flexible teaching and learning approaches.

ICTs have given rise to new modes of organising the educational



environment in schools and new concepts of the teaching process as well as the recasting of the roles played by the participants in the educational process. The continuing turbulence in the academic environment, the changing nature of work, opportunities afforded by electronic integration and the changing competitive climate have all combined to present academics with compelling reasons to rethink their structure, roles and missions as well as the manner in which they go about their businesses.

The education sector is one area in developing economies where ICTs are gradually making an impact. Adoption and use of ICTs in education is a landmark that is carrying education delivery to its possible heights. In Nigeria, development in ICTs is becoming more and more important in the education sector since its adoption or otherwise to a large extent is believed to have a positive or negative effect on the performance of the education sector. In essence, the output of education is improved with the use of ICTs.

Basically, ICTs are virtually becoming essential in universities such that institutional management almost everywhere now sees it as necessary in the process of learning and teaching. The use of ICTs in education has changed what is learnt, how learning takes place, and where. ICTs have introduced the concept of new methods of learning, new methods of teaching and new methods of conducting research and have brought into education facilities for on-line learning, on-line teaching, on-line research and collaboration. The increasing availability, use and globalisation of ICTs have begun to create relationship between their application and competitiveness and productivity within the academic community.

There are several studies on ICT development and utilisation by academic staff in tertiary institutions in the developed world and several models of growth and use had been proposed. However, comparatively very little is known about the utilisation of ICTs by academic staff in tertiary institutions in developing countries even though more and more of these tertiary institutions are beginning to acquire ICT facilities while more and more of the academic staff are beginning to have access to the facilities. There is thus an urgent need to understand the extent of ICT utilization by the academics in developing countries so as to identify the factors that influence their use of the facility.

Consequently, a research on the utilization of ICTs by academics in tertiary institutions in Nigeria will provide some information on their perception and level of exploitation. It will also examine the extent of use

of ICT as well as the drive to use ICT as it relates to the academics.

### **OBJECTIVES OF THE STUDY**

This study sets out to achieve the following objectives:

1. To identify the ICT facilities available for use by the academic staff in Nigerian tertiary institutions.
2. To determine the extent/level of ICT utilization among academic staff in Nigerian tertiary institutions
3. To identify areas of use of ICT application by the academic staff in Nigerian tertiary institutions.
4. To ascertain the competence level of academic staff in the use of the ICT facilities

Distribution of academic scholars in tertiary institutions across Nigeria is very wide. Thus to promote effectiveness of the research and to give focus to the study, data collection for this study was limited to academic staff in ten (10) tertiary institutions in Nigeria. The tertiary institutions were selected from Ogun and Lagos States. The two states have a widespread of various categories of tertiary institutions in Nigeria (i.e. Universities, Polytechnics, Colleges of Education, Colleges of Technology, Government and privately owned institutions). The ten (10) tertiary institutions selected for this research are University of Agriculture, Abeokuta (UNAAB); Olabisi Onabanjo University (OOU); Moshood Abiola Polytechnic (MAPOLY); Lagos State University (LASU); University of Lagos (UNILAG); Lagos State Polytechnic (LASPOTECH); Yaba College of Technology (YABATECH); Babcock University, Ilisan-Remo; Covenant University, Ota and Lagos City Polytechnic. These institutions all have ICT facilities within their domain which provide focal point of innovations that should obtain in other tertiary institutions in Nigeria.

### **LITERATURE REVIEW**

The demands of the knowledge economy have revolutionized the education sector and consequently made formal education systems more versatile and flexible. The education system is now regarded as more "porous and permeable". In the traditional education system, learning takes place mainly in the confines of the four walls of a classroom. The new world order, characterized by abundance and ready availability of digital information means that information has become ubiquitous and therefore can be obtained at any time and in any location no matter the distance as long as necessary infrastructural devices and the skills to retrieve information from global information networks are available. Adeogun (2003) emphasized that ICTs have broken the barriers of time,



distance and location which used to impede the growth of formal education.

In Nigeria today, ICTs have enabled education to break the barriers of confinement as virtual learning and collaborative education activities are taking place across geographical boundaries. Currently, through ICT strategies, the contents of education programmes can be expanded and extended to increase effectiveness.

ICTs on their own cannot reform the entire Nigerian educational system, but as part of a skillfully implemented programme, they can provide the opportunity to challenge many of the existing ideas about the educational process which are considered outdated and slow to change (Williams, 1991).

Rapid development of ICTs has led to many changes in the statutory responsibilities of the academics in tertiary institutions. Institutions are becoming globalized and traditional methods of doing academic work are fast becoming inappropriate. Lepper & Gurtner (1989) emphasized that the introduction of ICTs into education raised hopes for radical changes and improvements in the teaching-learning processes, providing greater and more equitable opportunities. They are serving as new and unique delivery systems that afford an interactive environment for experimental and exploratory learning and for the cultivation of powerful intellectual skills.

Academics being at the forefront of knowledge generation, processing and transmission have a crucial role to play in efforts to transform our institutions into an information society. They must be at the forefront of capacity building focusing on various aspects of ICTs in the process of education.

The introduction of ICTs has impacted profoundly on these tasks and skills of teachers, as well as in both the pattern and quality of lecture delivery. Mogbo (2002) also emphasized that it is not only the academic staff that should be involved in the use of ICTs but students should also have restructured training that is ICT oriented. Thus, Mogbo faults the emphasis by most of the literature on academics only as regards ICT use. Since the education process involves the two categories of people, it would be absurd to neglect one of the groups, i.e. students.

ICTs are altering the way research is being conducted, and indeed the

very definition of research itself. They have done much to reduce constraints of time, cost, and distance on the academic staff. ICTs are profoundly changing the way researchers communicate and collaborate. Information retrieval with the aid of ICTs permit researchers to get what is pertinent to their interest and as such the researchers become familiar with using ICTs to access online databases, thus transforming the process of conducting research.

Ehikhamenor (2002) emphasized that Internet is indeed changing the ways in which academics seek information, communicate with each other, conduct research and distribute research results. To develop and/or expand research partnerships, it is therefore necessary to ensure ICT competence. This should help academics to develop Internet skills and competence. According to Lacey (1999) few researchers in developing countries have developed adequate ICT skills. It is often believed that ICT is of greater use to researchers in sciences than to those in humanities.

#### **METHODOLOGY**

The sample for this study consisted of one hundred and seventy two (172) respondents randomly chosen from the 10 tertiary institutions in the southwestern part of Nigeria. The stratified sampling technique was used to categorize the institutions into private owned and government owned universities, polytechnics and colleges of education. Three private owned tertiary universities (i.e. Babcock University, Covenant University and Bowen University) University of Agriculture, Abeokuta (JNAAB), Olabisi Onabanjo University (OOU), Moshood Abiola Polytechnic (MAPOLY); Lagos State University (LASU); University of Lagos (UNILAG); Lagos State Polytechnic (LASPOTECH) and Yaba College of Technology (YABATECH) were selected for the study. The universities were selected based on their age, availability of functional ICT facilities within their domain and the existence of a well designed ICT development programme and utilization.

A total of one hundred and seventy two (172) copies of the questionnaire was administered to the respondents (i.e. academics in tertiary institutions and only 131 copies of the questionnaire were completed and returned in usable form representing 76.2% response rate.



## FINDINGS AND DISCUSSION

### ICT Availability and Use

One major factor affecting the use of ICT facilities is the availability of these technologies i.e., use is heavily dependent on provision and availability.

**TABLE 1:**  
**ICT AVAILABILITY TO ACADEMIC STAFF**

| ICT Facilities             | Availability<br>(Institution/<br>Personal) | No response |
|----------------------------|--|-------------|
| Stand alone Computers      | 88 (67.2%)                                 | 43 (32.8%)  |
| Fax Machine                | 79 (60.3%)                                 | 52 (39.7%)  |
| Telephone Facilities       | 70 (53.4%)                                 | 61 (46.6%)  |
| Internet Connection/E-mail | 91 (69.5%)                                 | 40 (30.5%)  |
| Scanning Machines          | 56 (42.7%)                                 | 75 (57.3%)  |
| Electronic Photocopier     | 66 (50.4%)                                 | 65 (49.6%)  |
| Printers                   | 72 (55.0%)                                 | 59 (45.0%)  |
| Telegraph                  | -  | 131 (100%)  |
| Wireless Radio Phone       | -  | 131 (100%)  |
| Cellular Phone (GSM)       | 129 (98.5%)                                | 3 (2.3%)    |

The data from Table I indicate that cellular phone GSM 129 (98.5%), Internet connection/E-mail 91 (69.5%), Computers 88 (67.2%), Printers 72 (55.0%), Telephone facilities 70 (53.4%) and Electronic photocopier 66 (50.4%) are the most commonly available ICT facilities for academic staff utilization. However, availability may be institutional or through personal arrangement by the academic staff. The least commonly available ICT facilities for the academic staff is scanning machines, 56 (42.7%).

**TABLE II:  
FREQUENCY OF ICT USE BY ACADEMIC STAFF**

| ICT Facilities                 | Occasionally | Always      | No response  |
|--------------------------------|--------------|-------------|--------------|
| Computers                      | -            | 88 (67.2%)  | 43 (32.8%)   |
| Fax Machine                    | 55 (42.0%)   | 76 (58.0%)  |              |
| Telephone Facilities           | -            | 105 (80.2%) | 26 (19.8%)   |
| Internet Connection/<br>E-mail | 28 (21.4%)   | 80 (61.1%)  | 23 (17.6%)   |
| Scanning Machines              | 68 (51.9%)   | 32 (24.4%)  | 31 (23.7%)   |
| Electronic<br>Photocopier      | 32 (25.2%)   | 98 (74.2%)  | 1 (0.8%)     |
| Printers                       | 25 (19.1%)   | 103 (78.7%) | 3 (2.3%)     |
| Telegraph                      | 22 (16.8%)   | -           | 109 (83.2%)  |
| Wireless Radio Phone           | -            | -           | 131 (100.0%) |
| Cellular Phone (GSM)           | -            | 123 (93.9%) | 8 (6.1%)     |

Of all the ICTs facilities, cellular phone (GSM) 123 (93.9%), telephone facilities 105 (80.2%), printers 103 (78.7%), electronic photocopier 98 (74.2%), and computers 88 (67.2%) were the most regularly utilised ICT facilities by majority of the academic staff in Nigerian tertiary institutions. Scanning machines were considered the least regularly used ICT facilities by the academic staff.

**TABLE III:  
FREQUENCY OF USE OF ICTs FOR ACADEMIC ACTIVITIES**

| Use of ICT Facilities                            | Occasional use | Regular use | No response |
|--|----------------|-------------|-------------|
| For research activities                          | 38 (29.0%)     | 67 (51.1%)  | 16 (51.1%)  |
| For teaching and learning purposes               | 36 (27.5%)     | 85 (64.9%)  | 10 (7.6%)   |
| Community development activities, e.g. workshops | 80 (61.6%)     | 24 (18.3%)  | 27 (2.1%)   |
| Getting in touch/communicating with colleagues   | 24 (18.3%)     | 98 (71.8%)  | 9 (6.8%)    |
| Scientific and scholarly endeavours              | 59 (45.0%)     | 54 (41.2%)  | 18 (13.7%)  |

Academic staff employ ICT facilities in carrying out their statutory duties. Thus, Table III indicates that majority of the academic staff i.e. 98(71.8%) regularly used ICT for getting in touch/communicating with their colleagues. Also ICTs are being regularly used for teaching and learning, i.e. 85(64.9%) and for research activities 16(51.1%).

The competency level of the academic staff in the use of ICT also has a bearing on their level or frequency of use and this is presented in Table IV.

**TABLE IV:  
ACADEMIC STAFF COMPETENCY LEVEL IN THE USE OF ICT  
FACILITIES**

| ICT Facilities             | High competency level | Low competency level | No response |
|----------------------------|-----------------------|----------------------|-------------|
| Computers                  | 101 (77.1%)           | 25 (19.1%)           | 5 (3.8%)    |
| Fax Machine                | 69 (52.7%)            | 62 (47.3%)           | -           |
| Telephone Facilities       | 107 (81.6%)           | 9 (6.9%)             | 15 (11.5%)  |
| Internet Connection/E-mail | 99 (75.6%)            | 7 (5.3%)             | 25 (19.1%)  |
| Scanning Machines          | 48 (36.7%)            | 71 (54.2%)           | 12 (9.2%)   |
| Electronic Photocopier     | 102 (77.9%)           | 17 (13.0%)           | 12 (9.2%)   |
| Printers                   | 111 (84.6%)           | 20 (15.3%)           | -           |
| Telegraph                  | -                     | 59 (45.0%)           | 72 (54.9%)  |
| Wireless Radio Phone       | -                     | 33 (25.2%)           | 98 (74.8%)  |
| Cellular Phone (GSM)       | 131 (100.0%)          | -                    | -           |

The respondents have a high competency level in the use of cellular phone (GSM) with 131(100%) response rate, telephone facilities with 107(81.6%) response rate, Printers 111(84.6%) and stand alone



computers with 101(77.1%) response rate. The ICTs in which the respondents have the lowest competency level are scanning machines 71(54.2%) and telegraph 59(45%).

### CONCLUSION AND RECOMMENDATIONS

The ICT facilities commonly available to the academic staff in Nigerian tertiary institutions are computers, Internet facilities/E-mail, printers, telephone facilities (landline) and electronic photocopiers. The academic staff make regular use of these ICT facilities while they make use of the other identified ICT facilities on occasional basis. This confirmed that use is a function of availability. Similarly, the academic staff in Nigerian tertiary institutions make use of the ICT facilities mainly to get in touch or communicate with their colleagues for research activities and as well as for teaching and learning purposes in their respective institutions

Academic research is also augmented with the use of ICTs in order to extend access to research findings thereby keeping the academics abreast of current development in their respective disciplines and other disciplines of interest. With ICT use, academics are better informed in their chosen profession. Also the use of facilities such as the cell phone (GSM), the telephone, the fax machine, computers and Internet connection/e-mail help in facilitating interaction of academics with their colleagues (both local and international).

The frequency of use of ICTs among the academics is very high as they make use of ICTs facilities frequently. It could also be concluded that the acquisition of competence and skills for ICT use among the academics was a result of personal efforts and investment by the academics themselves as most of the institutions surveyed do not have training facilities on ICT use for their academic staff. The academics acknowledged the value of ICTs, hence the need for them to invest in ICTs as according to Ho (1992), ICTs are the key to gaining competitive advantage in today's economy. Benefits of ICTs therefore outweigh the problems associated with their use.

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