Information and Communication Technology (ICT) and Effective Management of Education in Nigeria: Empirical Analysis of Michael Okpara University of Agriculture, Umudike, Abia State

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Abstract
Globalization have enhanced the emergency of Information and communication technologies (ICTs) as a veritable tools for educational change and reform processes through improving both access to education and the quality of that education. The research study evaluated the impact of information and communication Technology (ICT) on effective management of education in Michael Okpara University of Agriculture Umudike (MOUAU), Abia State. The general objective of this research is to examine the impacts of integrating ICTs in management of education in Michael Okpara University of Agriculture Umudike, Abia State. The specific objective includes ascertaining the impacts of PC utilization in the instruction materials developments of lecturers and effective management of education in Michael Okpara University of Agriculture Umudike. The researchers adopted Survey research design to make use of qualitative and quantitative evaluation; collect relevant and substantive data. Primary and secondary sources were used. The study used 276 respondents. The use of questionnaire was employed to gather necessary and relevant data from the respondents. Questionnaire was designed to collect the data on the factors related to Pc Utilization, Internet Utilization and PC networking and interconnectivity utilization .The data was analyzed using inferential and descriptive statistics with the aid of Statistical Packages for Social Science (SPSS) version 20. The descriptive statistics involves frequency table, likert Scale while the hypotheses were tested using Analysis of Variance (ANOVA). The results showed that all the independent variables have positive significant relationship with the dependent variable (effective management of education). The researchers concluded that information and communication technology play a crucial role in effective management of education despite the challenges in its application in the institution and recommended that government should increase the funding towards appropriate procurement of ICT equipments in the institution and ICT should be integrated in all aspect of university education management.

Keywords: Information and Communication Technology (ICT), University Education, Effective Management, Computer and Internet Utilization.
Introduction

In this modern world ICT is a vital element in developing one economy, no positive impact can be sustained today without an adequate and consistent information and communication. Nigeria is not left out in this trend; the impact of ICT in development of Nigeria economy covers various aspects of the nation’s socio-economic life especially in the educational sector, banking sector, government and private sectors. Within the Nigeria overall context ICT is seen as one of the fastest growing sectors of the economy-growing on average of 37.5 percent yearly (National Bureau of Statistics, 2006). The emergence of this new global economy has serious implications on the nature and purpose of educational institutions. Information and communication technologies (ICTs) are potentially powerful enabling tools for educational change and reform processes through improving both access to education and the quality of that education. ICTs help expand access to education, strengthen the relevance of education to the increasingly digital workplace and raise educational quality by helping make teaching and learning into an engaging, active process connected to real life when used appropriately. The explosion of the Internet in the 1990s, the emergence of a variety of low-cost computing devices and increased diffusion of computers throughout society ushered in a wave of “ICT and education” policies and projects in developing economies around the world designed to prepare students to effectively engage in the information age.

Education has long been identified as one of the most crucial allies of development. This view is supported by FRN (2004) where it stated that “no nation can rise above the quality of its education system”. One of the objectives of establishing university is to promote scholarship, research and learning in the various fields of learning. As stated in the national policy on education, one of the goals of university education is to acquire both physical and intellectual skills which will enable individuals to become self-reliant and useful members of the society (FME, 2004). Behind the mission and vision of the university education is the university effective training of its students and management of university community in general.

ICT has become one of the basic building blocks of modern society. ICTs in education deal with the use of ICTs within educational technology. Many countries, according to UNESCO (2002), now regard understanding ICT and mastering the basic skills and concepts Europe of ICT as part of the core of education, alongside reading, writing and numeracy. This is critical to university education Management and development in Nigeria. Against this background, however, ICT seems to be central to management of university education in Nigeria. This therefore explains the reason why successive governments in developing countries like Nigeria continue to lay emphasises on ICT as a way of transforming its university education.

Statement of the Problem

Computers are spreading rapidly in universities not just in developed countries, but increasingly in developing ones as well. Even though Nigeria Universities have had computers in domain for almost two decades, ways to use them effectively have evolved slowly and sluggishly. Nigeria universities use ICTs in two main ways: for administration and routine tasks of lecture room management, and for instruction. In the classroom, they have two main instructional roles: for teaching ICT skills and as a tool for teaching other subjects. Generally speaking, ICT has been recognized as educational tool that can be used to enhance and complement teaching and learning in schools. The use of computer in the administration and teaching and learning process in Nigeria universities is becoming
imperative for effectiveness and efficiency of the educational process in the nation day by day.

The use of internet in universities management and by lecturers as well as student in the aspect of record keeping and retrieval, decision making, performance assessment and re-assessment and planning. According to Long (2009) internet is a valuable source of information for students looking for ideas for project and assignments. Anosike (2003; 94), maintains that “the internet is advantageous in almost every sphere of life especially in education. According to him, internet is informative, educating, entertaining, improves commercial transactions and many more. Researches in recent times observed, that in the midst of globalization and technological advancement, academics, and non-academics staff in Nigeria universities are still lacking behind in computer usage; most of them are illiterate in the use and application of ICTs. Based on the extended use of ICTs in education in developed countries and some universities in Africa and Nigeria, the need to examine the impact or otherwise of the use of information and communication technology (ICT) as an aid to teaching and administrative management improvement in Nigeria universities. Therefore, this study aims to examine the impact of ICT on management of university education as it relates to academic and non-academic staff in Michael Okpara University of Agriculture Umudike, Abia State.

Objectives of the Study
The general objective of this research is to examine the impacts of integrating ICTs in management of university education in Michael Okpara University of Agriculture Umudike (MOUAU), Abia State. The specific objectives include to:

i. Ascertain the impacts of Computer Utilization in the instruction materials developments by lecturers and effective management of education in Michael Okpara University of Agriculture Umudike.

ii. Evaluate the impacts of Internet Utilization in teaching by lecturers and effective management of education in Michael Okpara University Agriculture Umudike.

iii. Evaluate the impacts of PC networking and interconnectivity utilization in administration process and effective management of education in Michael Okpara University Umudike.

Research Questions
For the purpose of carrying this study, three research questions were formulated to guide the study. They include:

i. What are the impact of Computer Utilization and Development of instruction materials by lecturers and effective Management of education in Michael Okpara University of Agriculture Umudike

ii. What are the impact of Internet Utilization in teaching by lecturers and effective management of education in Michael Okpara University of Agriculture, Umudike?

iii. What are the impact of PC networking and interconnectivity utilization in administration process and effective management of education in Michael Okpara University of Agriculture Umudike?

Research Hypothesis
For the purpose of this research study, three (3) research hypotheses were designed. They include:-
i. There is no significant relationship between Computer utilization in development of instruction materials by lecturers and effective management of education in Michael Okpara University of Agriculture Umudike.

ii. There is no significant relationship between Internet utilization in teaching by lecturers and effective management of education in Michael Okpara University of Agriculture, Umudike.

iii. There is no significant relationship between PC networking and interconnectivity utilization in administration process and effective management of education in Michael Okpara University of Agriculture Umudike.

Significance of the Study
The rationale of this study is to ascertain the vital strength of ICT in effective management of education in Michael Okpara University of Agriculture, Umudike. The result of this research would no doubt provide vital information to existing universities, tertiary institutions and even corporate organizations on effective ways of applying ICTs for effective management and development of their institutions.

Scope of the Study
This research will focus on the impact of ICT on effective management of education in the institution. The research was conducted in Michael Okpara University of Agriculture Umudike, Abia State. The geographical scope of the study is Umudike where the institution is located.

Conceptual Framework
The Concept Information and Communication Technology (ICT) and Effective Management of University Education in Nigeria
ICT is an acronym that stands for information and communications technology. It encompasses all the uses of digital technology that already exist to help individuals, business and organizations, use information. ICT covers any device that can store, retrieve, manipulate, transmit or receive information electronically in a digital form. E.g. personal computers, digital television, email, robot. Blurton (2002) defines ICTs as a diverse set of technological tools and resources used to communicate, and to create, disseminate, store and manage information. These technologies include computers, the Internet, broadcasting technologies (radio and television) and telephony. ICT when appropriately applied has the potential tools for enriching traditional means of teaching, learning and conducting research. According to Lopez (2003) ICT have provided innovative opportunities for teaching and learning experiences. ICT can be used to improve the quality of teaching and learning in any academic environment. Supporting this view, Yusuf (2005), it is widely accepted that ICT can be used to improve the quality of teaching and learning in any tertiary institution. Furthermore, he stated that ICT can make the school more effective and productive, thereby engendering a variety of tools to enhance and facilitate lecturers professional activities. From the foregoing, ICT can be viewed as a tool that can enhance teaching and learning through its dynamic, interactive and engaging content and can provide real opportunities for individualized instruction and has the potential to accelerate, enrich and deepen skills, motivate and engaging students in learning; relate school activities to work practice, help to create economic viability for tomorrows workers; contributes to radical changes in schools,
strengthens teaching and provides opportunities for connection between the school and the world.

The rapid growth in Information and Communication Technologies (ICT) has brought remarkable changes in our contemporary society. The use of ICT is already indispensable in the area of education especially in university and tertiary schools. ICTs are the technologies used in conveying, manipulating and storing of data by electronic means. They provide an array of powerful tools that may help in transforming the present isolated teacher-centered and text-bound classrooms into rich, student-focused, interactive knowledge environments.

**Application of Information and Communication Technology (ICT) in Management of Education in Michael Okpara University of Agriculture Umudike**

Information and Communication Technology (ICT) is a computer based tools used by people to work on information and communication processing needs of an organization. Basically, it encompasses the computer hardware and software, the network and several other devices (video, audio, photography, camera etc) that convert information (text) images, sounds, motion into digital forms. It is an application of the combination of computing, communication, telecommunication and satellite technology. Information and communication technology (ICT) is one of the most important driving forces promoting effective management of Universities education in Nigeria. Technology is developed to solve problems associated with human needs in more productive ways. If there is no problem to solve, then technology will neither be developed nor adopted (Huda, Tabassum, and Ahmed, 2009).

Since 2005, the use of ICT to enhance service delivery in Nigerian Universities has been quite remarkable. ICT products, devices and services are available everywhere (CBN, 2007).

ICTs application in Management of education in Michael Okpara University of Agriculture Umudike can be viewed from four (4) broad perspectives which includes the following:

**General Management (Administration)**

Application of the ICT in this instance includes use of ICT to coordinate and monitor various aspects of University Administration such as:

- Students enrolment monitoring.
- Students’ record keeping. (Students Portal)
- Management of students’ accounts.
- Students’ course registration.
- Students verification of exam results

**Instructional Purposes (Computer Usage by lecturers)**

Application of ICT for instructional purposes can be seen in the usage of ICT to facilitate various instructional activities which the aid of such items which include:

- Overhead projector.
- Multimedia projector.
- Virtual classrooms.
- Radio.

**Research Purposes (Internet Connectivity)**

Application of ICT for research purposes is seen in the following ways:

- Researchers are enabled to access works of other researchers for reference purposes.
- Researchers are enabled to upload their research works to be referenced by other
Researchers.
- Researchers are enabled to constructively criticize from logical perspectives the works of other researchers to advance the course of knowledge.

Management of University Micro Finance Bank (PC interconnectivity)
Application of ICT for management of University Micro Finance is seen in the following ways among others:
- Capturing of details of every transaction in the bank.
- Facilitation of accounting information flow between all stake holders both internally and externally.
- Students’ school fee.
- Management of students’ accounts.
- Students’ course registration payment.
- Students verification of exam results payment.
- Students Union fees Payment.

Internet and Management of Education in Nigeria
Internet (also known as World Wide Web) is the wonderful creation of technology. The evolution of information technology gave birth to the internet. Internet in its simple form is the connection of two (2) or more computers for the purpose of exchanging information. In other words internet is a worldwide collection of computer networks, cooperating with each other to exchange data using a common software standard. It can be in form of telephone and satellite links. Internet shares information in a variety of forms. According to Onyeme, Mbah and Madumere (2008), the internet is growing faster than all other communication technologies that have preceded it. Ndum (2001), “One of the reasons why people formally had no interest in computers but are now willing to get involved in computing stems from the mystery the internet had generated. In fact, the internet turned the world into a global village where people of different nationalities, race and social backgrounds can communicate on a one to one basis to share and exchange ideas across continents in an interactive and personal manner.

The Impacts of ICTs in Management of Education in Nigeria
ICT has been seen as a veritable channel of attaining the lofty and desirable conception and goals of improved quality of life for the populace. This is because; ICT development involves extensive technology-based development of the productive (manufacturing) system of the economy. In other words, it could be seen as a deliberate and sustained application and combination of suitable technology, management techniques and other resources to move the economy from the traditional low level of production to a more automated and efficient system of mass production of goods and services (Ayodele and Falokun, 2003). From the foregoing, ICT can be viewed as a tool that can enhance teaching and learning through its dynamic, interactive and engaging content and can provide real opportunities for individualized instruction and has the potential to accelerate, enrich and deepen skills, motivate and engaging students in learning; relate school activities to work practice, help to create economic viability for tomorrow workers; contributes to radical changes in schools, strengthens teaching and provides opportunities for connection between the school and the world.

Wiws and Lawler (2007) maintain that the application of ICT in education can address some of the educational problems in developing countries like Nigeria. These are shortages of
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qualified teachers, lack of educational opportunities, inadequate access to learning and teaching resources, high enrolment rates and high impact dropout, inefficient educational administration, and centered curricular conversely, ICTs in education has the capacity of;
- Increasing the number of qualified teachers;
- Increasing educational opportunities;
- Promoting greater access to learning and teaching resources;
- Increasing the number of women enrolment and reducing the rate of dropout;
- Promoting competency and performance based curricula.

Challenges of ICTs Application
There are many forces and factors that pose as challenges and problems that hinder effective application of ICTs in Nigeria Universities. Jagboro (2003:316) reported the reasons for low level of utilization of internet by university students: low level of connectivity (internet/computer outlet); the high cost of cyber café facilities; lack of substantial online learning resources; inadequate funds; facilities; and universities unwillingness to use ICTs for lack of skill on the part of staff and students. A study at the University of Botswana (Tella, 2007) inadequate equipment, lack of ICT policy, poor attitude of staff, inadequate computers, and problem of connectivity to off-campus students. Researchers Okorie, Agabi and Uche (2005: 33) included lack of computer or ICT centre, inadequate facilities/equipment at the ICT centre, irregular power supply, absence of alternative source of power supply, lack of computer knowledge, expensive nature of ICT facilities, and lack of determination by management to embrace ICT-revolution.

The Concept Management administration
Management is the process of planning, organizing, directing, leading and controlling the members of the organization to achieve stated objectives of the organization. The main objective of management is the achievement of the goals of the organization. To achieve these goals, it must be ensured that the human resources are effectively utilized. The set goals, whatever it maybe to the organizations concerned, management is the process by which the goals can be attained. The Nigerian Institute of Management (NIM) opined that management is a comprehensive activity, involving the combination and co-ordination of human, physical and financial resources, in a way which produce a commodity or a service which is both wanted and can offered at a price which will be paid, while making the working environment for those involved agreeable and acceptable. Management is thus, regarded as the process undertaken by one or more individuals to coordinate the activities of the others to achieve results not achievable by one individual acting alone. Chinedu (2009) states that management is a process through which organizational objective are realized efficiently and effectively He however, summed up by noting that management refers to doing thing through and with people. Management is the primary force within organizations that coordinate the activities of the sub-system and relate it to its environment. Probably the most distinguished benefit of computers in universities has been in easing organization management. For example, lecturers no longer need to carry manual student’s results. Data on students’ attendance and performance can be more easily recorded and analyzed with laptops. The use of ICTs for administration and routine tasks of classroom management seems to have developed just as quickly, or quicker, than their use in instruction.
Theoretical framework

Human Capital Theory
Human Capital Theory has long been argued as a critical resource in most firms Pfeiffer, (2004). The search for sources of sustainable competitive advantage increasingly pointed inward towards organizational capability and more specifically to the strategic management of human resource Dyer, (2003); Wright and Mcmahan, (2002), as capital and technology become increasingly available to virtually anyone anywhere Ulrich and Lake, (2001). Human capital refers to the productive capabilities of people Becker, (1964), skills, experience and knowledge have economic value to organizations because they enable it to be productive and adaptable; thus people constitute the organizations human capital, Schuler, (2005). From micro economics perspective, human capital theory suggests that people possess skill, knowledge, and ability that have the potential to generate economic value.

ICT has the capacity to provide higher interactive potential for users to develop their individual, intellectual and creative ability. The main purpose of ICT “consists just in the development of human mental resources, which allow people to both successfully apply the existing knowledge and produce new knowledge” (Shavinina, 2001:70). Hence when ICT is applied in an organization; there is usually effective management of such organization.

Empirical Evidence: ICT and Management of Education
In Bach et al (2011), factor analysis was used for measuring the effectiveness and usefulness of ICT in managements and investments. Retiz (2004) examines the potential impact of ICT and concluded that the role of ICT in education includes providing a catalyst for rethinking teaching practice, developing the kind of graduates and citizens required in an information society, improving educational outcomes and improving the qualities of teaching and learning. Lucey, (1995) emphasized the importance of ICT in university management and Kolade, Oje and Omodara (2007) reported a considerable influence of ICT in the effective management of organizations.

Methodology

Research design
The researchers adopted Survey research design in order to make use of qualitative and quantitative evaluation to collect relevant and substantive data. Survey approach assisted the researchers in the collection of data using questionnaires. The design is suitable for this study because the study will ascertain the opinions of the students, academics and non-academics staff on the impact of ICTs in the management of the University.

Sources of Data Collection
For the purpose of this research, the following types of research will be applied:

i. Primary data; and
ii. Secondary data.

Primary Sources of Data
The primary data were obtained mainly through questionnaires, survey, and interview. The interviews and observations were employed alongside the questionnaires to reduce the bias that would have been otherwise imported into the answers given by the respondents.
Secondary Sources of Data
The secondary data were obtained mainly through the review of relevant literature; and in the process many books and journals were consulted. Also internet and other relevant related materials were used.

Population of the Study
The actual population of this study is the entire staff (academic and non-academic staff) and students of Michael Okpara University of Agriculture Umudike (MOUAU). The population of study is 3,082 (academic and non-academic staff), being respondents academic and non academic staff in the university.

Sample Size Determination
Using the Taro Yamane formula for calculating sample size.
Using the formula,
\[ n = \frac{N}{3 + N(e)^2} \]
Where n=sample size
N=population = 3,082
\( e \) = sampling error usually = 0.05 (level of precision)
3= constant.
\[ n = \frac{3082}{3 + 3082 \times (0.05)^2} \]
\[ = \frac{3082}{3 + 3082 \times 0.0025} = \frac{3082}{10.705} = 288 \]

Sampling and Sample Techniques
Simple random sampling technique was adopted for this study, which is a procedure of giving every subject in a population equal chance of appearing in the selection. The researcher is of the opinion that the simple random sampling is suitable for this research work were the researcher choose individual in such a way that each has an equal and independent chance of being selected.

Validation of the Instrument
The questionnaire was subjected to face-validation by two experts. These experts were requested to validate the questionnaire items in terms of clarity, wording, appropriateness and adequacy of the items for the study. Their observations and recommendations were effected in drafting the final copy of the questionnaire.

Reliability of the Instrument
The instrument was subjected to a reliability test to establish the internal consistency of the questionnaire items. In order to establish the reliability of this instrument, a pilot study was carried out on a sample of ten (10) workers at the university. After period of ten (10) days, the instruments were re-administered to the same respondents. The two tests were collated and analyzed using the Cronbach’s Alpha (\( \alpha \)) method. A reliability coefficient of 0.785 was obtained indicating that, the instrument were reliable for the study. The questionnaires were collected and errors corrected for the final questions for the study.
Methods of Data Analysis
The instruments were administered through the use of three (3) research assistants in the university. The variables (dependent and independent variables) will be tested using correlation analysis while the hypotheses will be tested using Analysis of Variance (ANOVA). The top management staffs of the institution were also interviewed to elicit valuable information that was useful in drawing conclusion from the research study. The likert rating Scale is as follows:- strongly agreed 5, agreed 4, undecided 3, disagree 2 and strongly disagree 1. Descriptive and analytical techniques were used for the analysis of data. The process of analysis was carried out in SPSS 20.0 version for windows. The hypotheses will be tested using F-test statistic at 0.05 level of significance.

Decision Rule
The Null Hypothesis =  \( H_0 \)
The Alternative Hypothesis =  \( H_1 \)
The Significance Level of the Test = 0.05
The decision Reject \( H_0 \)  IF
F-Calculated is greater than F-critical or T-Calculated is greater than T-Critical

### Table 3.1. Descriptive Statistics of Variables

<table>
<thead>
<tr>
<th>S/no.</th>
<th>Variables</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Cronbach’s Alpha</th>
<th>Number of Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Computer Utilization</td>
<td>4.3226</td>
<td>0.8219</td>
<td>0.81</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>Internet Utilization</td>
<td>4.3145</td>
<td>0.6910</td>
<td>0.76</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>PC Connectivity and Networking Utilization</td>
<td>4.3952</td>
<td>0.6352</td>
<td>0.79</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>Effective Management</td>
<td>4.3871</td>
<td>0.7292</td>
<td>0.78</td>
<td>5</td>
</tr>
</tbody>
</table>

Source: Computerized results from SPSS 20 (2016)

From table 3.1, the descriptive analysis of the variables: Computer utilization, internet utilization and PC Connectivity and networking utilization show agreeableness. Hence it means that all the independent variables will increase the effective management.

Data Presentation and Analysis
The data generated from for this study will be statistically analyzed and presented in this section. Brief explanation of the tables will be given.

### 4.1: Questionnaire Distributed and Collected

<table>
<thead>
<tr>
<th>S/No.</th>
<th>Questionnaire</th>
<th>Respondents</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>i.</td>
<td>Returned</td>
<td>276</td>
<td>96.0</td>
</tr>
<tr>
<td>ii.</td>
<td>Not Returned</td>
<td>12</td>
<td>4.0</td>
</tr>
<tr>
<td>iii.</td>
<td>Total</td>
<td>288</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Table 4.2: Demographic Characteristic of Respondents

<table>
<thead>
<tr>
<th>S/NO.</th>
<th>VARIABLE</th>
<th>Frequency</th>
<th>Percentage</th>
<th>Cumulative Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>194</td>
<td>70.0</td>
<td>70.0</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>82</td>
<td>30.0</td>
<td>100.0</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>276</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>2.</td>
<td>Age Range</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>21-30</td>
<td>76</td>
<td>27.5</td>
<td>27.5</td>
</tr>
<tr>
<td></td>
<td>31-40</td>
<td>98</td>
<td>35.5</td>
<td>63.0</td>
</tr>
<tr>
<td></td>
<td>40- Above</td>
<td>102</td>
<td>37.0</td>
<td>100.0</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>276</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>3.</td>
<td>Educational Qualification</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>OND/NCE</td>
<td>12</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td>HND</td>
<td>24</td>
<td>9.0</td>
<td>13.0</td>
</tr>
<tr>
<td></td>
<td>B.Sc</td>
<td>105</td>
<td>38.0</td>
<td>51.0</td>
</tr>
<tr>
<td></td>
<td>MBA/MSC/PhD</td>
<td>135</td>
<td>49.0</td>
<td>100.0</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>276</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>4.</td>
<td>Employee level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Junior</td>
<td>15</td>
<td>5.5</td>
<td>5.5</td>
</tr>
<tr>
<td></td>
<td>Senior</td>
<td>127</td>
<td>46.0</td>
<td>51.5</td>
</tr>
<tr>
<td></td>
<td>Management</td>
<td>134</td>
<td>48.5</td>
<td>100.0</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>276</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>5.</td>
<td>Length of Service</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 to 5 Years</td>
<td>96</td>
<td>34.8</td>
<td>34.8</td>
</tr>
<tr>
<td></td>
<td>6 to 10 Years</td>
<td>104</td>
<td>37.7</td>
<td>72.5</td>
</tr>
<tr>
<td></td>
<td>11 to 15 Years</td>
<td>56</td>
<td>20.3</td>
<td>92.8</td>
</tr>
<tr>
<td></td>
<td>Above 16 years</td>
<td>20</td>
<td>7.2</td>
<td>100.0</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>276</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Computerized results from SPSS 20 (2016)
Results and Discussion

Correlation Analysis

Table 4.3: Correlation Analysis

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>Correlation</th>
<th>Computer Utilization</th>
<th>Internet Utilization</th>
<th>Personal Computer (PC) Connectivity &amp; Networking Utilization</th>
<th>Effective Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Utilization</td>
<td>Pearson Correlation</td>
<td>1</td>
<td>.195*</td>
<td>.099</td>
<td>.177*</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.023</td>
<td>276</td>
<td>276</td>
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<td></td>
<td>N</td>
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<td>276</td>
</tr>
<tr>
<td>Internet Utilization</td>
<td>Pearson Correlation</td>
<td>.192*</td>
<td>1</td>
<td>.277**</td>
<td>.295**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.023</td>
<td>276</td>
<td>.001</td>
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<tr>
<td></td>
<td>N</td>
<td>276</td>
<td>276</td>
<td>276</td>
<td>276</td>
</tr>
<tr>
<td>Personal Computer Connectivity &amp; Networking Utilization</td>
<td>Pearson Correlation</td>
<td>.099</td>
<td>.277**</td>
<td>1</td>
<td>.274**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.245</td>
<td>276</td>
<td>.001</td>
</tr>
<tr>
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<td>N</td>
<td>276</td>
<td>276</td>
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</tr>
</tbody>
</table>

* Correlation is significant at 0.05 level (2-tailed)
** Correlation is significant at 0.01 level (2-tailed)

Source: Computerized results from SPSS 20 (2016)

The table 4.3 above showed the correlation analysis of the variables Computer Utilization, Internet Utilization, PC Connectivity & Networking Utilization and Effective Management.

Testing of Hypothesis: ANOVA Analysis

Hypotheses 1

HO: There is no significant relationship between Personal Computers (PC) Utilization in development of instruction materials by lecturers and effective management of education in Michael Okpara University of Agriculture Umudike (MOUAU).

ANOVA- Computer Utilization

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Residual</td>
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<td>276</td>
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<td></td>
</tr>
</tbody>
</table>

Source: Authors Computation, 2016

a. **Interpretation of ANOVA Result**: 
Reject H0 because: Computed –F (24.971) is greater than Critical –F (18.51). Sig. (0.003) is less than the significant Level (0.05) F-Cal. = 24.971. The p-value is less than alpha therefore it is statistically significant. Thus we reject the null hypothesis and conclude that there is a positive significant relationship between Computer Utilization and effective management of organization.

Hypotheses 2

HO: There is no significant relationship between Internet utilization in teaching by lecturers and effective management of education in Michael Okpara University of Agriculture, Umudike (MOUAU).
ANOVA: Internet Utilization

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
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</tbody>
</table>

Source: Authors Computation, 2016

Interpretation of ANOVA Result: Reject H₀ because: Computed –F (20.601) is greater than Critical –F (18.51). Sig. (0.001) is less than the significant Level (0.05) F-Cal. = 27.601. The p-value is less than alpha therefore it is statistically significant. Thus we reject the null hypothesis and conclude that there is a positive significant relationship between internet Utilization and effective management.

Hypotheses: 3

H₀: There is no significant relationship between PC networking and interconnectivity utilization in administration process and effective Management of education in Michael Okpara University of Agriculture Umudike (MOUAU).

ANOVA: Personal Computer Networking and Interconnectivity

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
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<td>20.385</td>
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<td>.000</td>
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<tr>
<td>Residual</td>
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<tr>
<td>Total</td>
<td>132.992</td>
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</tbody>
</table>

Source: Authors Computation, 2016

Interpretation of ANOVA Result: Reject H₀ because: Computed –F (29.782) is greater than Critical –F (18.51). Sig. (0.000) is less than the significant Level (0.05) F-Cal. = 29.782. The p-value is less than alpha therefore it is statistically significant. Thus we reject the null hypothesis and conclude that there is a positive significant relationship between PC Networking and Interconnectivity Utilization and effective management of education in Michael Okpara University of Agriculture Umudike (MOUAU).

Summary

The study examined the impact of Information and Communication Technology (ICT) on the effective Management of Michael Okpara University of Agriculture Umudike (MOUAU), Abia State. A Sample of 276 respondents were studied. Data was collected through self-designed, questionnaires having 20 items. Correlations and regression analysis with 5% significance test was used to analyze data and test the hypotheses respectively. All the three variables tested –Computer Utilization, Internet Utilization and Pc Networking and Interconnectivity -were shown to have significant positive impacts on effective management of education in the institution.

Conclusion

Based on the objectives and the finding of the research, the researchers concluded that there is a significant relationship between the availability and utilization of ICTs and effective management of education in Michael Okpara University of Agriculture Umudike (MOUAU). This suggests that without ICT effective management of the universities could be put at risk. This finding agreed with those of Lucey, (1995) which emphasized the importance of ICT in university management and Kolade, Oje and Omodara (2007) which reported a considerable
influence of ICT in the effective management of organizations. However, there are problems facing the effective application of information communication and technology (ICT) in the university such as inadequacy of electricity power supply, lack of maintenance of internet facilities, lack of ICT equipment tends to limit the availability and utilization of ICT in effective management of the University.

Recommendations
Based on the objectives, findings and conclusion of the research study, the researchers recommended as follows:

i. Electricity is essential for effective utilization of ICT in MOUAU therefore the federal government and Management of the university should improve power supply in the university. There should be regular supply of petrol to standby generators.

ii. The management and the federal Government should also intensify more efforts in increasing the funding of the university in line with the UNESCO standard of 26% allocation of national budget to education; this will go a long way in improving ICT procurement and application in the institution.

iii. ICT should be integrated in all aspect of university education management-students learning, lecturers teaching and general administration. There should also be the enlightenment of staff on the importance of ICT in the management of university.

iv. Subsidy should be given by government on ICT equipment. Improve staff training on the use of ICT facilities; an enabling environment should be created for staff to make them show more interest in the use of ICT in the university.

v. Staff and students should be Train, develop and expose to various uses of ICTs.

vi. A positive attitude should be cultivated towards the introduction and use of ICT products in the university management (teaching and research).

References


