

**USE OF INFORMATION AND COMMUNICATION TECHNOLOGY FOR THE GROWTH OF
TERTIARY INSTITUTIONS IN NIGERIA: A STUDY OF UNIVERSITY OF CALABAR.**

By

Stephen Nyong, PhD

Email: stevonyong@gmail.com

Phone: 08037929156

Erikav, Gurenen Asher

Email: ashergurenen6@gmail.com

Phone: 09067579091

Ogar Effiong Anthony

Phone: 09036319444

Department of Mass Communication
University of Calabar

Abstract

This study examined the use of ICT for the growth of tertiary institutions in Nigeria taken University of Calabar as the case study. Four research objectives and four research questions were set for the study. ICT as a concept was examined alongside its components, impact, roles, and challenges encountered in the utilisation of ICT in education. Survey research design using questionnaire and interview guide was adopted for data collection using a sample size of 400 respondents and eight interviewees. Data from the questionnaire were presented in frequency tables and analysed using frequency counts and weighted means. The findings amongst others were that ICT plays significant role in the teaching and learning practices at the University of Calabar. Also, it was found that the adoption of and utilization of ICT is found to have significant impact on students' performances and academic outcome. ICT was therefore said to be relevant for the growth and advancement of the educational system as well as enhance students' academic performances. It was therefore, recommended that strategies should be made for easy accessibility of ICT by both staff and students of the institution and they should be engaged into a compulsory ICT training that will enable them master how to use and appreciate it.

Keywords: *Information technology, Growth, Tertiary Institutions, ICT Application, ICT Facilities*

Introduction

Communication which is one of the basic necessities of man which lies in the desire to create and share meaningful information in order to create mutual understanding has been significantly influenced by the advent of technology. Technology has created channels or means through which the whole process of communication is facilitated (Salawu 2008). Communication technology otherwise known as information technology has found its niche in every sphere of the world and it has become, within a very short time, one of the basic building blocks of modern society thereby successfully changing the social, economic, educational and political spaces globally. Through globalisation ICTs have reduced the world to a global village. ICTs have enabled the globalised world become greatly interconnected, interdependent and without borders (Salawu, 2008). ICTs are changing the world rapidly, creating a distance-less and borderless world of instantaneous communication (Spence & Smith, 2009). Corroborating the aforesaid, John, Ukpe, Eba and Etta (2022) note that the ambiguity in information forms has led to the invention of information and communication technologies to facilitate information reach to a wider audience.

ICTs have significantly impacted the educational sector by redefining education across the sequential system of Nigeria education. It has brought massive regeneration and energy to teaching, research and learning and enhanced teacher-student interface by creating multiple channels of interaction (Patrick, Imhonopi, & Urim, 2014). The use of Information Communication Technology (ICT) in educational institution has become increasingly important in today's digital age. In the context of Nigeria, ICT has the potential to enhance efficiency, improve access to information, and promote innovation. Information and communication technology (ICT) has become an inseparable entity in all aspects of human life, including education. In the Nigerian tertiary institutions, ICT has begun to have a presence but the impact has not been extensive. The transition of the world to digital media and information has

increased the importance of ICT in education, and this importance will continue to grow and develop in the twenty-first century. ICT an essential component of today's world; it has transformed the educational system by replacing traditional ways of teaching and learning with modern, computer-based processes (Oyedokun and Adeolu 2022).

ICT in education according to Dave and Tearle (2010) encompasses the use of computers and their peripherals like printers, software, scanners, projectors for teaching and learning. It enhances teaching and learning through its dynamic interactive and engaging content, and has the potential to accelerate, enrich and deepen skills, motivate and engage students in learning, contributes to the total development of the tertiary institution; strengthens teaching and learning; and provides opportunities for connection between the tertiary institution and the world (Dave & Tearle, 2010).

The University of Calabar that is renowned for its academic excellence and research contributions has been at the forefront of embracing Information and Communication Technology for academic purposes. ICT as such has become an integral part of the University of Calabar thereby enabling the institutions to improve in efficiency, increase access to information, and enhance the overall quality of education. The impact of the use of ICT on the institution has been recognizably significant in various aspects. One of the key areas is in teaching and learning. There is the use of ICT to conduct cutting-edge research and make significant contributions to different fields of study in the institution. ICT has also facilitated collaborations with other institutions as well as facilitate students' registration and record-keeping. The use of ICT systems has also streamlined various administrative tasks, making them more efficient and less time-consuming. This has improved the overall access to/sharing of information, collaboration among students and staff on projects and interconnectedness regardless of their physical location. This has fostered a sense of community and teamwork within the university, contributing to a more vibrant and dynamic learning environment.

Therefore, the impact that the use of ICT exert in enhancing the growth the University of Calabar, cannot be overstated especially in transforming most of its educational activities to assume digital space. This however, is met with some challenges that affect effective utilisation of ICT in the institution. This study therefore, aims to explore the use of ICT in enhancing the growth of institutions in Nigeria focusing specifically on the University of Calabar, to examine the role and impact of information and communication technology on teaching and learning in the institution and the challenges associated with the use of ICT and how to address these challenges.

Statement of the Problem

Despite the increasing use of ICT in education, there is a lack of comprehensive research on its specific impact on Nigerian institutions, particularly the University of Calabar. This study seeks to address this gap by examining the effects of ICT on teaching and learning practices, as well as student performance, and overall institutional growth. The University of Calabar, like many other Nigerian institutions, faces challenges in leveraging Information Communication Technology (ICT) to enhance its growth and development. Despite the potential benefits of ICT, the university still struggles with various challenges such as limited ICT infrastructure and resources, inadequate ICT literacy and skills among staff and students, inefficient use of ICT in teaching, learning, and research, limited access to digital resources and information, high cost of ICT infrastructure and maintenance, limited collaboration and knowledge sharing among staff and students, etc. This study provided insights into these challenges and opportunities associated with the adoption and utilisation of ICT in the University of Calabar, and inform strategies for leveraging ICT to enhance the university's growth and development.

Research Questions

The following four research questions guided the study:

- i. What are the roles of ICT in teaching and learning practices at the University of Calabar?
- ii. How does ICT impact students' performance and academic outcomes at the University of Calabar?
- iii. What are the challenges associated with the use of ICT in University of Calabar?
- iv. How can the University of Calabar improve its policies and strategies to better support its academic and administrative functions?

Review of Concepts

Information and Communication Technology (ICT)

The evolvement of communication along technological inventions and innovations has resulted to what is termed “Information and Communication Technology.” Mathevula and Uwizeyimana (2014) define Information and Communication Technologies (ICT) as technologies used to convey, manipulate and store data by electronic means. These include e-mail, SMS, text messaging, video chat (e.g., laptop, desktops, and smartphones) that carry out a wide range of communication and information functions. Information Communication Technology (ICT) encompasses a broad range of technological tools and resources used to transmit, store, create, share, or exchange information (UNESCO, 2019).

Garai (2006) in support of the above noted that ICTs cover internet service provision, telecommunications equipment and services, information technology equipment and services, media and broadcasting, libraries and documentation centres, commercial information providers, networkbased information services, and other related information and communication activities. Imhonopi and Urim (2012) submitted that ICTs facilitate different forms of communications among human agents, among humans and information systems, and among information systems. It has transformed society into a global village over the previous few decades by providing a huge array of communication options. ICTs have been adopted to facilitate the teaching and learning process from primary to higher institutions in Nigeria. This has facilitated educational activities by simplifying them for easy access thereby bringing about viable changes within the education system. Ally (2004) notes that in educational contexts, ICT plays a transformative role in facilitating teaching and learning processes, enhancing access to educational resources, and fostering interactive learning environments. ICT is made up of different components such as computers, internet, electronic mail, World Wide Web, printers, etc.

The Impact of ICT on the Education System

ICTs have significant impact on the learners in the sense that they make the process easier hence there is availability of information and other learning aids that support the learners. Learners are expected to be the subjects that consume the teaching process. ICT also has significant impact of the teacher and the whole learning process resulting to the coinage “educational technology” which Oboh and Atufe (2013) see as the application of media born out of the communication revolution through the production and use of quite a range and variety of electronic information carriers, projection and amplification. That is to say that educational technology is a tools technology with emphasis on hardware or equipment and related materials

The Role of ICT in Education

Nithya et al (2024) noted that the utilization of Information and Communication Technologies (ICT) has significantly enhanced academic exhibitions, revolutionizing how knowledge is disseminated, shared, and experienced. Nithya et al (2024) further stressed that ICT enables enhanced interactivity and engagement within academic exhibitions. Interactive multimedia elements, such as virtual reality (VR) simulations, augmented reality (AR) experiences, and touch screen displays, offer visitors immersive and dynamic ways to explore and interact with exhibition content.

ICT Application in Nigerian Institutions

Nigerian higher institutions have embraced ICT to facilitate the educational process in diverse ways. The implementation of ICT according to Nworgu, (2007) in this regard, can be seen to be helpful because it help in accessing various kinds of research information, which would necessitate a link to the libraries group, learning new methods for disseminating knowledge produced in Africa and using them, reduced time and cost of conducting educational investigation, data sets and library resources can be shared by institutions in different locations, educational researchers have easy access to current literature materials, etc.

Challenges of Adoption Implementation of ICT in Education

The successful adoption and implementation of ICTs in Nigerian institutions is met with different challenges ranging from technical know-how to technological deficiency and insufficient funds to procure and install the needed technological equipment in Nigerian institutions. Unreliable internet connectivity remains a pervasive issue in tertiary institutions, hindering the widespread adoption of online learning platforms and digital resources. Also, the high cost of internet data and electronic services, is basically the element of ICT usage and value and is one of

the challenges of installing ICT in Nigerian tertiary institution (Tongia & Subrahmanian, 2006). Resource constraints present another barrier to effective ICT integration in Nigerian tertiary institutions. Technological disparities among institutions exacerbate inequalities in access to ICT-enabled educational resources and opportunities. Another challenging factor militating against the deployment of ICT in Nigerian Tertiary institutions is Lack of facilities (Alturise & Alojaiman, 2013). All these hinder effective adoption and utilization of ICT in education in Nigeria.

Empirical Review

Oyedoum and Adeolu (2022) study the impact of Information Communication Technology (ICT) on Quality Education in Nigerian Tertiary Institutions and established the fact that Information and communication technology (ICT) has become an inseparable entity in all aspects of human life, including education. Their study highlighted the impact of ICT for quality education in Nigeria tertiary institutions. ICT has undoubtedly impacted the quality and quantity of teaching, learning, and research in Nigeria tertiary institutions. They further discussed the benefits of having ICT infrastructure such as e-learning/virtual library, access to quality education for learners with special needs in Nigeria tertiary institutions. The various constraints to ICT utilisation must receive prominent attention.

Matthew, Jero, and Manasseh (2015) embarked on a study that investigates the role of ICT in educational system in Nigeria. The study observed that Nigeria still experience a lag in its implementation, and this continue to widen the digital and knowledge divides and the access to ICT facilities is a major challenge facing most African countries. The study concludes that despite the roles ICT can play in education, schools in Nigeria have yet to extensively adopt them for teaching and learning. Efforts geared towards integration of ICT into the school system have not had much impact.

Adewoye and Salawu (2021) carried out a study on “Impact of ICT on Teaching And Learning. A Case Study of Some Selected Universities in Nigeria” in which they examined the impact of ICT on teaching and learning a case study of some selected universities in Nigeria. This study adopted the simple random sampling technique in the three selected public universities from Lagos State, Ogun State and Oyo State. Two hundred and thirty four questionnaires were completed and returned out of three hundred questionnaires distributed to all the three universities. The results reveal that that: there is a positive relationship between ICT and teaching and learning in Nigerian universities, ICTs offer great opportunity for teaching and learning to solve teaching and learning problems, the study further concludes that there is positive relationship among factors influencing the adoption of ICT and Teaching and learning in Nigeria university. In the light of the above conclusions, the study recommended that Nigerian universities should improve its organizational capacity (i.e. funding and infrastructures) among the factors that influences ICT adoption in Nigerian universities.

Theoretical Framework

The study was anchored on Technological Determinism theory and theory of Technology Acceptance Model (TAM). Technological Determinism theory was propounded by Everret Rogers in 1986 (Oguoshi 2021). The theory revolves around the proposition that technology in any given society defines its nature. It is viewed as the driving force of culture in a society and it determines the development of its social structure and cultural values. The theory seeks to show technical developments media, or technology as a whole, as the key mover in history and social change. The theory considers technological development and innovation as the principal motor of social, economic or political change. This theory is relevant to this study because it buttressed the fact that technological invention and innovations has changed the culture of communication across different aspects of human endeavours. It has also changed the educational culture of teaching and learning alongside other activities. It clearly shows the link between ICTs and educational system pointing on how ICTs have shaped the educational process by fine-tuning it to its present digital stage where the dissemination as well as access to information is made easier and more interesting.

The Technological Acceptance Model (TAM) on the other hand is a theory of information systems that describes how people adopt information systems. It asserts that users' behavioural intentions, which are defined by the perception of technology's utility in accomplishing the job and perceived ease of use, predict users' adoption of technology. The model was developed by Fred Davis and Richard Bagozzi (1989), with two major elements affecting an individual's desire to utilize new technology: perceived usefulness and perceived ease of use. This theory is relevant to this study since the goal of the study was to assess use of information and communication

technology for the growth of tertiary institutions in Nigeria. The theory helped in stressing on the need for the University management to accept technology in this digital age in order for the needed academic activities to be digitalized. This will compel them to ensure that the needed technological equipment and other logistics are made available in order to create an enabling environment for effective teaching and learning to take place.

Methodology

Survey research design was adopted for this study. This design was considered most suitable for the study because it enabled the researcher gather primary data from a of sample respondents using both the questionnaire and interview guide. The area of study was University of Calabar which is a Federal institution established in 1975. It grew out of University of Nigeria Nsukka. It is a highly reputable higher institution of learning. It is located in Calabar South Local Government Area. The institution boasts of academic excellence and has embrace communication technology that it has assumed digital recognition. The population of this study comprised of both staff and students of the institution. The population of students of University of Calabar according to uncial.edu.ng stands at 40,645. The institution has a total of 3,860 teaching staff according to UNICAL Academic Staff Directorate. The total population of this study therefore, is 44505. It is from this population that the researcher drew a sample and collected data for the study.

A sample size of 400 respondents was drawn out of the total population of 44505 using Taro Yamane as presented below:

$$n = \frac{N}{1+N(e)^2}$$

Where n = Desired sample size

N = Population size under study

e = Level of significance of error

1 = unit in value

$$n = \frac{N}{1+N(e)^2}$$

$$n = \frac{44505}{1 + 44505(0.05)^2}$$

$$n = \frac{44505}{1 + 44505(0.0025)}$$

$$n = \frac{44505}{44506 \times 0.0025}$$

$$n = \frac{44505}{111.2625}$$

$$n = 400$$

Data Presentation and Analysis

Result from the Questionnaire

Research Question One: What are the roles of ICT in teaching and learning practices at the University of Calabar?

The use of ICT for teaching and learning process

Survey statement	Degree of Response	Frequency (r)	Total Score
The use of ICT greatly facilitates and improves the teaching and learning process	SA (4)	243	972
	A (3)	132	396
	D (2)	6	12
	SD (1)	11	11
Total		392	1391
Weighted mean score			= 3.54

Source: Field work, 2024

Table 4.1 shows the calculated weighted mean score of 3.54 which going by the rating scale shows that respondents strongly agree with the assertion that the use of ICT greatly facilitated and improves the teaching and learning process. From there responses it is clear that the use of ICT facilitates educational activities.

ICT and information availability

Survey statement	Degree of Response	Frequency (r)	Total Score
Through the application of ICT information is made available and accessible for the purpose of teaching and learning	SA (4)	271	1084
	A (3)	124	372
	D (2)	-	-
	SD (1)	-	-
Total		392	1456
Weighted mean score			= 3.71

Source: Field work, 2024

It is ascertained in Table 4.2 that the calculated weighted presented is 3.71 which shows that respondents strongly agree with the assertion that through the application of ICT information is made available and accessible for the purpose of teaching and learning. This therefore, means that information is made much available for teaching and learning because of the adoption of ICT in the institution.

ICT and record keeping

Survey statement	Degree of Response	Frequency (r)	Total Score
Documentation and profiling is enhanced through the adoption and utilization of ICTs	SA (4)	290	1160
	A (3)	97	291
	D (2)	2	4
	SD (1)	3	3
Total		392	1458
Weighted mean score			= 3.71

Source: Field work, 2024

Going by the data presented in Table 4.3 above and the 3.71 weighted means score obtained it is clear that respondents strongly agree with the assertion that documentation and profiling is enhanced through the adoption and utilization of ICTs. This implies that through the adoption and utilisation of ICT in the institution it is easier to keep data of people and other information in the institution.

Research Question Two:How does ICT impact students' performance and academic outcomes at the University of Calabar?

ICT and information availability in different fields of study

Survey statement	Degree of Response	Frequency (r)	Total Score
The use of ICT in tertiary institutions makes variety of information available in different fields of study which facilitates the teaching and learning process	SA (4)	299	1196
	A (3)	84	252
	D (2)	4	8
	SD (1)	5	5
Total		392	1461
Weighted mean score			= 3.72

Source: Field work, 2024

Respondents strongly agree with the assertion that the use of ICT in tertiary institutions makes variety of information available in different fields of study which facilitates the teaching and learning process. This is because of the calculated weighted mean score of 3.72 obtained from their responses. This shows that information is made available in different fields of study because of the utilisation of ICT by tertiary institutions.

ICT and students' academic performances

Survey statement	Degree of Response	Frequency (r)	Total Score
The use of ICT helps students to improve in their academic performance	SA (4)	277	1108
	A (3)	109	327
	D (2)	6	12
	SD (1)	-	-
Total		392	1447
Weighted mean score			= 3.69

Source: Field work, 2024

Table 4.5 shows the calculated weighted mean score of 3.69 implying that respondents strongly agree that the use of ICT helps students to improve in their academic performance. This shows that students can improve in their academic performance through the use of ICT.

ICT and students' engagement in their studies

Survey statement	Degree of Response	Frequency (r)	Total Score
The adoption of ICT makes students take their academics activities more serious and perform better	SA (4)	255	1020
	A (3)	78	234
	D (2)	29	58
	SD (1)	25	25
Total		392	1337
Weighted mean score			= 3.41

Source: Field work, 2024

It is construed from respondents stand point that the adoption of ICT makes students take their academics activities more serious and perform better given the calculated weighted mean score of 3.41. This shows that the respondents agree with the assertion. It therefore, implies that through the utilisation ICT students get more serious with their academic activities and this makes them perform better in school.

**Research Question Three: What are the challenges associated with the use of ICT in University of Calabar?
Adequacy of ICT supply in UNICAL**

Survey statement	Degree of Response	Frequency (r)	Total Score
Inadequate supply of ICT like computers is one of the challenges associated with the use of ICT in UNICAL	SA (4)	305	1220
	A (3)	87	261
	D (2)	-	-
	SD (1)	-	-
Total		392	1481
Weighted mean score			= 3.77

Source: Field work, 2024

Regarding the assertion that inadequate supply of ICT like computers is one of the challenges associated with the use of ICT in UNICAL respondents strongly agree that it is one of the challenges that hinder the effective utilisation of ICT in the Institution. The calculated weighted mean score of 3.77 was obtained. This clearly shows that there is inadequacy in the supply of ICT gadgets in the institution.

The nature of internet network in UNICAL

Survey statement	Degree of Response	Frequency (r)	Total Score
Poor network is another challenge that is faced with the use of ICT in UNICAL	SA (4)	281	1124
	A (3)	100	300
	D (2)	6	12
	SD (1)	5	5
Total		392	1441
Weighted mean score			= 3.67

Source: Field work, 2024

Table 4.8 shows the calculated weighted mean score of 3.67 which implies that respondents strongly agree with the assertion that poor network is another challenge that is faced with the use of ICT in UNICAL. This implies that poor network is an issue that affects the effective utilisation of ICT in the institution.

ICT funding in UNICAL

Survey statement	Degree of Response	Frequency (r)	Total Score
The adoption and utilisation of ICTs UNICAL is hampered by poor funding.	SA (4)	222	888
	A (3)	153	459
	D (2)	9	18
	SD (1)	8	8
Total		392	1373
Weighted mean score			= 3.5

Source: Field work, 2024

In Table 4.9 the calculated weighted mean score obtained in relation to the assertion that the adoption and utilisation of ICTs UNICAL is hampered by poor funding is 3.5 which mean they strongly agree that utilisation of ICTs UNICAL is hampered by poor funding. This means that there is underfunding of ICT unit in the institution.

Research Question Four: How can the University of Calabar improve its policies and strategies to better support its academic and administrative functions?

Provision of computers and good network

Survey statement	Degree of Response	Frequency (r)	Total Score
More facilities like computers and good network should be made available for users in UNICAL	SA (4)	323	1292
	A (3)	69	207
	D (2)	-	-
	SD (1)	-	-
Total		392	1499
Weighted mean score			= 3.82

Source: Field work, 2024

In respect to the assertion in Table 4.10 respondents strongly agree that more facilities like computers and good network should be made available for users in UNICAL. This is because of the calculated weighted mean score of 3.82 obtained in the table. This implies that the institution is in need of more computers and good network.

Investment of more resources in ICT

Survey statement	Degree of Response	Frequency (r)	Total Score
More of financial resources should be pumped into the ICT sector in UNICAL for improvement	SA (4)	346	1384
	A (3)	46	138
	D (2)	-	-
	SD (1)	-	-
Total		392	1522
Weighted mean score			= 3.88

Source: Field work, 2024

Respondents strongly agree with the assertion that more of financial resources should be pumped into the ICT sector in UNICAL for improvement. This is because of the 3.88 calculated weighted mean score in the table. This implies that the institution needs to budget more fund for the ICT unit in the institution.

On professionals handling students on ICT

Survey statement	Degree of Response	Frequency (r)	Total Score
More trained and skilful staff need to be employed in the ICT Unit to handle students on how to master the use of ICT	SA (4)	245	980
	A (3)	113	339
	D (2)	19	38
	SD (1)	15	15
Total		392	1372
Weighted mean score			= 3.5

Source: Field work, 2024

Table 4.12 shows that respondents strongly agree with the assertion that more trained and skilful staff need to be employed in the ICT Unit to handle students on how to master the use of ICT. This implies that there is need for the institution to employ more staff in the ICT unit for academic purposes.

Discussion of Findings

This study examined the use of ICT for the growth of tertiary institutions in Nigeria focusing on University of Calabar. In relation to the set objectives and research questions data collected and presented above are discussed below under each research objective.

On the role of ICT in enhancing teaching and learning practices at the University of Calabar.

Data from both the questionnaire and interview guide show that ICT play significant role in the teaching and learning process. It was ascertained that one of such roles is making information available and accessible for both the staff and students. Also documentation and profiling of both staff and students is enhanced through the adoption and utilization of ICTs in the institution. It availed both staff and students with the opportunity to access information on a wider perspective, analyse such information, recreate, share, which is significantly spreading knowledge across the globe in ways that were previously impossible or even inconceivable. This equally brings about e-learning where lectures are held online using social media platforms with such features. The findings relate to the findings of Oyedokun and Adeolu (2022) that ICT through e-learning performed significant educational role in Nigeria. They find out that ICT has been recognized to enhance access to current learning methodologies, which improves knowledge. It is crystal clear therefore that ICT plays multiple roles in the educational system. The technological determinism theory comes to play at this point hence technology is determining a lot of academic activities such as documentation, profiling, information creation and distribution, etc.

On the impact of ICT on students' performance and academic outcomes at the University of Calabar.

From data collected it was ascertained that the application of ICT in the educational sector make the process of teaching and learning more interesting and engaging hence information is made available and accessible to the students. This make the students find their studies easier and more interesting and this helps them to improve in their academic performances and the overall academic outcome. ICT create different avenues for learning such holding online classes, sharing of information and study materials through their social media platforms etc. This makes students to read and do better in their performances.

The findings therefore agree with the findings of Deka and Jena, (2017) that ITC creates a virtual learning environment that allows participants to acquire knowledge by cooperation. The environment includes a course syllabus, pre-requisites registration, instructor, and distant learning applications which in the long run help them improve in their academic performances. Mikre, (2011) also finds in a study that through the application of ICT in learning students gain knowledge and improve their quality of education at a reduced cost by being exposed to interdisciplinary studies. Mahlangu, (2018) also finds that ICT systems provide great opportunities for learning for individual students globally, by helping in educating and providing training opportunities on different topics. This therefore, validates the standpoint of the technological determinism theory whereby ICT is now determining how many academic activities are carried. It detects teaching system, reading habit, information sharing and accessing.

On the challenges associated with the use of ICT in University of Calabar.

The use of ICT for the growth of tertiary institutions in Nigeria is met with some challenges ranging from technical problems to man power or technical-know-how problem. Data gathered from both the questionnaire and interview exercises reveal that the utilisation of ICT is met with challenges like inadequate provision of ICT equipment by the management, poor network, lack of adequate manpower and poor funding of the ICT units. These findings are in consonance with the findings of Jegede, Philip, and Ogunode (2021) who identify inadequate ICT facilities, unstable power supply, poor internet services, inadequate funding of ICT as some of the challenges militating against effective utilization of Information Communication Technology (ICT) in schools in Nigeria.

Recommendations for improving the University of Calabar's ICT policies and strategies to support its academic and administrative functions.

Data generated show that both the respondents to the questionnaire and the interviewers where of the opinion that more of ICT facilities like computers and good network should be made available for users in the institution. Also, enough funds should be budgeted for handling financial requirements of the ICT unit. And finally, more trained and experienced staff should be employed to handle students on how to master the use of ICT.

More so, all the three interviewees held similar views that the provision of relevant infrastructures and facilities such as steady electricity, good internet connection, computer systems, or laboratory training of staff. Increased ICT awareness among educators and formulation of policies that support the use of ICT in the institution will create an

enabling environment for effective utilization of ICT among both staff and students of the institution and this will help facilitate academic activities in the institution.

The above findings relate to the findings of Idowu and Esere (2023) who after finding out that ineffective coordination of all the various ICT-driven education initiatives, lack of sound policy initiatives, lack of skilled manpower to manage available systems and inadequate training facilities for ICT education at the tertiary level etc. are some of the challenges confronting the utilization of ICT in higher institutions in Nigeria recommended that hence ICT-driven education has great potentials to assist achieve Nigeria's goal to achieve education for all modalities should be put in place to tackle any obstacle on the way to effective utilization of ICT in tertiary institution. Enough funds should be budgeted to the ICT unit. Staff and students should undergo compulsory training on the use of ICT.

Conclusion

The adoption and application of ICT in the educational sector has greatly improved the teaching and learning process. It has made information available and at the disposal of both staff and students of the institution. With the adoption of ICT most of academic activities have gone digital now. Students do their registration online conveniently. Profiling and documentation of both staff and students is equally made easier with the use of ICT. The introduction of ICT in higher institution has help students to improve in the area of academic performance because information is made available for them. Though ICT is met with some challenges such as inadequate facilities, poor network, poor funding, etc. addressing these common challenges will put both the students and staff of the institution in a position they can derive optimum benefit from it.

Recommendations

The study recommends that hence ICTs facilitate the teaching and learning process in higher institution both teachers and students should be trained on how to use it for that purpose. Also, strategies should be made for easy accessibility of ICT. Serious effort should be directed at eradicating the identified issues like poor network, inadequate ICT equipment, poor power supply etc. that hinder effective and efficient adoption and utilization of ICT in the institution. The university management should ensure that adequate fund apportioned to the ICT unit so that more computer equipment will be purchase to tackle the problem of inadequacy of those equipment.

References

- Adewoye, J. O. & Salau, N. A. (2021). Impact of ICT On Teaching and Learning. A Case Study of Some Selected Universities in Nigeria. *KIU Interdisciplinary Journal of Humanities and Social Sciences*
- Dave, P.A., & Tearle, J. (2010). Impact of ICT based distance learning: The African story. *The Electronic Library* 21(5), 476-486.
- Garai, A. (2006). Processes and appropriation of ICT in human development in rural India: A Theoretical approach. *A OWSA Briefing Paper*. New Delhi: One World South Asia.
- Imhonopi, D. & Urim, U. M. (2012). Nigeria's Expensive Democracy: A Confederal Option for Development. *The Journal of Sustainable Development in Africa (JSDA)* 14 (7): 70 - 80.
- John, G., Ukpe, A. P., Eba, A. N. & Etta, A. D. (2022). Adaptation and Use of ICT Gadgets by Journalists in Cross River State in *CRUTECH Journal of Communication* Vol. 4, Issue 1 available at <https://unicross.edu.ng/researchview.php?sid=193>
- Mathevula, M.D & Uwizeyimana, D.E (2014). The challenges facing the integration of ICT in teaching and learning activities in South African rural secondary schools. *Mediterranean Journal of Social Sciences*. 5(20), 1087-1097

Matthew, D., Jero, I. D., and Manasseh, H. (2015). The Role of Information Communication Technology in Nigeria Educational System. *International Journal of Research in Humanities and Social Studies* Vol. 2, Issue 2, PP 64-68.

Oboh, and Atufe, U. (2013). The impact of information communication technology (ICT) on Nigeria education system

Ogbuoshi, L.C. (2020). *Understanding the dynamics of communication theories and models*. Linco Enterprise, Enugu.

Ogbuoshi, L.C. (2021). *Understanding modern research methods and thesis writing*. Linco Enterprise, Enugu.

Oyedoun, G. E. & Adeolu, A. M. A. (2022). An Appraisal of the Role of Information Communication Technology (ICT) for Quality Education in Nigerian Tertiary Institutions. *Conference proceedings of the First Conference of the National Institute of Office Administrators and Information Managers (NIOAIM) between 7th and 10th February, 2022 at the International Conference Centre, Lead City University, Ibadan, Oyo State, Nigeria*

Patrick, E., Imhonopi, D. & Urin, U. M. (2014). ICTs and sustainable development of higher education in Nigeria: Rewriting the ugly narrative. *Journal of Education and Social Research*. Vol. 4, No. 1. PP 357

UNESCO, (2019). Information and communication technology in education. A curriculum for schools and programme for teacher development. Division of higher education. Retrieved from <http://unesdoc.unesco.org/images/0012/001295/129538e.pdf>