INFORMATION AND COMMUNICATION TECHNOLOGY RESOURCE UTILIZATION AND LECTURERS' PRODUCTIVITY

Joseph O. Ogar, Jane-Frances O. Agomuo, Joe E. Friday & Ohaemesi P. Chiemeriem

[124]Department of Educational Management, Alex Ekwueme Federal University, Ndufu Alike
[3]Department of Educational Technology, Federal College of Education (T) Benin City
Ojishe2018@gmail.com

Abstract:

Information and Communication Technology is essential to our very existence and thus permeate all aspects of our lives most importantly the world of work and particularly the education industry responsible for the generation and transfusion of new knowledge. Consequently, the adoption of ICT resources in education has ushered transformed learning, teaching, and information engagement that are inevitable in the realization of stated educational goals and objectives. Thus, this paper examined Information and Communication Technology Resource Utilization and Lecturers Productivity. The study employed a descriptive survey design. Three research questions guided the study, the study's population consisted of eighty-two (82) lecturers from the Faculty of Education, Alex Ekwueme Federal University Ndufu-Alike Ebonyi state. The census sampling technique was adopted due to the manageable of size of the population. The data were collected using a validated and modified four (4) point Likert scale structured research instrument titled "Information communication technology resources utilization and lectures productivity (ICTRULPQ)" with a reliability test of 0.78 Cronbach alpha. Findings revealed low availability of ICT resources among lecturers, low level of ICT resources utilization among lecturers and the challenges facing information and communication technology resource utilization among lecturers in AE-FUNAI was discovered to be high. It was recommended that they should be increased investment in ICT resources, digital literacy programs and improved internet facilities.

Keywords: Information, Communication, Technology, Resource, utilization, Lecturers, Productivity

Introduction

Information and Communication Technology resources have become essential in various aspects of our lives, including education. The adoption of ICT resources in education has transformed learning, teaching, and information engagement, this incorporation of (ICT) in the education industry has brought about a lot of changes in the education process. Siddiquah et al. (2017), asserted that ICT significantly influences productivity. ICT resources can enhance instructional quality by motivating and engaging learners, facilitating the acquisition of fundamental skills, and improving facilitators' training. Transitioning to an ICT-enabled education system presents challenges, but the rewards include improved learning outcomes and a more inclusive educational environment (Meenakshi, 2013).

ICT in education is widely accepted and appreciated, particularly in higher education industry as it has the capacity to enhances efficiency and effectiveness in job discharge, transition from analog teaching methods to advanced methods via the use of ICT. The adoption and use of these technologies is largely due to its increasing integration into everyday activities within educational institutions, particularly in the context of teaching and learning. This growth is prompting a greater demand for ICT to enhance efficiency and effectiveness in the educational sector. Higher education in Nigeria is currently undergoing a significant transformation, shifting away from traditional teaching methods to embrace more advanced approaches made feasible by the emergence of ICT. Bede et al. (2015) emphasized that higher education aims to empower the nation through knowledge production and dissemination facilitated by research and teaching activities, making ICT an essential tool in achieving these goals. Information and Communication Technology (ICT) is instrumental in creating, processing, storing, retrieving, and disseminating information and data

using electronic devices, as noted by Akpan (2014). It has encouraged the integration of ICT facilities like the internet and projectors into the teaching process, benefiting both educators and students.

The utilization of ICT resources in educational represents transformative power with the potential to improve learners, enhance teaching methods, and shape the future of education. teachers employ information communication technology resources to conduct research, improve course materials, facilitate effective teaching and learning, and advance their academic growth (Soetan et al., 2018).

Lecturer productivity encompasses a range of aspects, including teaching, research, mentorship, and administrative responsibilities. It carries significant importance for both individual educators and the educational institutions they serve. Thus creating a conducive environment, providing essential resources, and fostering a culture of continual improvement are crucial steps in optimizing lecturers' productivity. Ultimately, productive lecturers play a pivotal role in achieving educational excellence and contributing significantly to the development of future generations. Information communication technology resources, such as educational videos, television, and multimedia computer software that incorporate text, audio, and dynamic visuals, can be harnessed to deliver engaging and authentic content that actively engages learners in the educational process. Understanding the breadth of information communication technology opens the door to infusing new enthusiasm and innovative approaches into the learning experience.

Lectures productivity is the lecture's capacity to utilize their intelligence to gather, adapt, and critically evaluate information to produce authentic results that contribute to the advancement of knowledge (Madu et al 2012). Lectures productivity is regarded as an indicator of lecturers' success, influencing factors like promotions, ranks, honorariums, and benefits (Sahardi, Fuad, and Rosyidi, 2018). It is assumed that the outcomes of a lecturer productivity, when implemented, contribute to national development and economic progress. Simisaye (2017) have revealed that lecturers' productivity is influenced by various individual factors, including self-efficacy, affiliations, motivation, commitment, research skills, and a sense of responsibility,

among others. Lecturers in higher education institutions engage in research activities to impart knowledge and stay updated with current trends in their teaching. The cumulative research output of individual lecturers determines their level of productivity. It is believed that lectures productivity contributes to assessing and enhancing the quality of teaching at the institution and it plays a pivotal role in shaping a lecturer's career progression within the university. It is along this thinking that Cavanaugh et al (2016) emphasized that there is need for lecturers to continuously develop their Information communication technology skills by Training programs and workshops which can empower lecturers to use ICT effectively, ultimately increasing their productivity.

The bane of the study is anchored on the suboptimal utilization of ICT resources by lecturers and its reciprocal consequence on productivity. Despite the availability of advanced technologies and digital platforms, lecturers often face challenges in harnessing these resources to their full potential. Many lecturers may not fully exploit the capabilities of ICT tools, including interactive whiteboards, multimedia software, learning management systems (LMS), and online collaboration platforms, digital libraries, research databases, and educational content is available online, lecturers may not have adequate access or awareness of these resources. This limitation can hinder their ability to stay updated with current research and deliver comprehensive course materials, less engaging lectures and limited interaction with students. Integrating ICT seamlessly into the curriculum and teaching methods can be challenging as teachers may struggle to incorporate technology in a way that enhances the learning experience, and this can impact their overall productivity, some may lack the necessary training and support to effectively leverage ICT resources. It is against this backdrop that this study was undertaking.

Purpose of the Study

The main purpose of the study is to examine the impact of information communication technology on the productivity of lecturers in Alex Ekwueme Federal University. Specifically, to:

1. Examine the availability of information communication technology resource.

2. Investigate the extent of information communication and technology resource Utilization by lecturers.
3. Determine the challenges facing information communication technology Utilization.

Research Question
1. What is the extent of information and communication technology resource availability?
2. What is the level of Information communication and technology resource Utilization?
3. What are the challenges facing information and communication technology utilization?

Methodology

The study employed a descriptive survey design. The study's population consisted of eighty-two lecturers from the Faculty of Education, Alex Ekwueme Federal University Ndufu-Alike Ebonyi state. The census sampling technique was adopted due to the manageable of size of the population. The data were collected using a validated modified four (4) point likert scale structured research instrument titled "Information communication technology resources utilization and lectures productivity (ICTRULPQ)" which consisted of 29 items addressing the research questions. To ascertain the instrument's reliability, a test-retest approach was employed, involving 20 lecturers from the Faculty of Arts and Humanities with a reliability test of 0.78 cronbach alpha.

Result Presentation

Research Question 1. What is the extent of information and communication technology resource availability?

Table 1: Information and Communication Technology Resource Availability

ITEM	A		A		TOTAL
	N	(%)	N	(%)	
Computer	54	65.3%	28	34.7%	82
Internet	31	37.9%	51	62.1%	82
Projector	6	7.5%	76	92.5%	82
Printer	32	38.4%	50	61.1%	82
Modem	23	27.6%	59	72.4%	82
Uninterupted Power Supply (Ups)	9	11.2%	73	88.8%	82
Camera	8	9.9%	72	90.1%	82
Laptops	61	74.8%	21	25.2%	82
Ipad	19	23.7%	63	76.3%	82
Power plant	7	8.5%	75	91.5%	82

Source: field work (2023)

Table 1: presents analysis on Information and Communication Technology (ICT) resource availability among the respondents. While a significant number of the respondents stated that computers (65.3%) and laptops (74.8) were available, most of the other ICT resources did not have high percentage of availability according to the respondents. For example, only few respondents said that the ICT resources of internet (37.9%), projector (7.5%), printer (38.4%), modem (27.6%), uninterrupted power supply (11.2%), camera (9.9%), Ipad (23.7%) and power plant (8.5%) were available. This implies that there is low availability of information and communication technology resources among the respondents.

Research Question Two. What are the challenges facing information and communication technology utilization?

Table 2: Information and Communication Technology Resource Utilization

ITEMS	FREQUENCY				N	X (Mean)	SD	DECISION
	SA	A	D	SD				
I utilize ICT device to generate a presentation	7	16	28	31	82	2.11	0.964	Rejected

I utilize website and search engine to access variety of available information	24	16	14	18	**82**	2.54	1.123	Accepted
I utilize computer application software programs to enhance lecturers efficiency	2	10	31	39	**82**	1.82	0.743	Rejected
I utilize mobile phones for academic video conferences and zoom meeting	24	28	13	17	**82**	2.55	0.964	Accepted
I utilize mobile phones for communication which involves sending messages and making call	34	30	10	8	**82**	3.16	0.963	Accepted
I gain entry to web portals and utilizing learning management system	2	6	28	46	**82**	1.42	0.583	Rejected
I utilize internet service for research purposes	30	26	12	14	**82**	2.63	0.971	Accepted
I utilize computer for interactive online classes	3	5	26	48	**82**	1.37	0.591	Rejected
I utilize computer device for web broadcasting.	2	8	29	43	**82**	1.46	0.611	Rejected

I utilize computer device for statistical analysis and data interpretation	28	18	19	17	**82**	2.50	0.893	Accepted
Cumulative Mean						**2.2**		

Source: field work (2023)

Table 2; presents a Likert scale analysis on information and communication technology resource utilization among lecturers in FUNAI. In line with the decision rule which stated that mean averages equal to or more than 2.50 should be accepted and those below should be rejected, the first statement that respondents utilize ICT to generate presentations was rejected at a mean average of 2.11, while the second statement that they use websites and search engines to access variety of information, was accepted. The respondents rejected the third statement that they use computer application software programs to enhance lecturer efficiency, but accepted the next two statements, stating that they utilize mobile phones for academic video conferencing and zoom meetings and also utilize mobile phones for communication by sending messages and making calls. The next statement that they gain entry to web portals and utilizing learning management system was rejected while they accepted that utilized internet for research purposes. The next two statements that respondents utilize computer for interactive online classes and that they use it for web broadcasting, were both rejected. However, the last statement stating they utilize computer for statistical analysis and data interpretation was accepted by the respondents. As shown by the cumulative mean average of 2.2, these responses indicate that though the respondents use ICT resources to some extent, the level of utilization was low.

Research Question Three: What is the level of Information communication and technology resource utilization?

Table 3: Challenges facing information and communication technology utilization

ITEMS	FREQUENCY				N	X (Mean)	SD	DECISION
	SA	A	D	SD				
I am not digital literate	26	30	14	12	82	2.81	0.742	Accepted
I do not have access to ICT device for creating presentation	24	28	16	14	82	2.73	0.933	Accepted
I do not have access to website and search engine to access different information available	8	16	31	27	82	2.18	0.735	Rejected
I do not have access to mobile phones to access information services	3	9	32	38	82	1.66	0.544	Rejected
I do not have access to web comment and blog	2	10	37	33	82	1.74	0.537	Rejected
I do not have access to web broadcast or instant messages and chats	4	12	32	34	82	1.89	0612	Rejected
I do not have access to adequate internet facilities	37	31	8	6	82	3.42	0.877	Accepted
I do not have access to hand-held computer	34	30	10	8	82	3.16	0.963	Accepted
I do not have access to computer applications software programs	27	33	12	10	82	2.91	0.911	Accepted
Cumulative Mean						**2.50**		

Source: field work (2023)

Table 3; analyzes the challenges facing information and communication technology utilization among lecturers in FUNAI. The respondents accepted the first two statements citing lack of digital literacy and lack of access to ICT devices for creating presentation as challenges. They, however, rejected the next four statements which cited challenges such as lack of access to websites and search engines to access information, lack of access to mobile phones to use information services, lack of access to comments and blogs and lack of access to web broadcast or instant messaging and chats. Furthermore, the respondents accepted that they faced the challenge of not having access to adequate internet facilities but rejected the statement that they lacked handheld computers. The last statement citing lack of access to computer applications software programs for teachers' productivity, was accepted by the respondents as a challenge. The cumulative mean of 2.50 showed that many of the suggested challenges were accepted. However, the challenges accepted as facing information and communication technology utilization were lack of digital literacy, lack of access to ICT device for creating presentations, lack of access to adequate internet facilities, lack of access to hand-held computer and lack of access to computer applications software programs for teachers' productivity.

Findings
Based on the data presented in the tables above, the following findings have been identified:
1. There is low availability of Information and Communication Technology resources among lecturers in AE - FUNAI.
2. There is a low level of information and communication technology resource utilization among lecturers in AE-FUNAI as shown by a cumulative mean average of 2.2.

3. The challenges facing information and communication technology resource utilization among lecturers in AE-FUNAI is high. Among the challenges are lack of digital literacy, lack of access to ICT devices for creating presentations, lack of access to adequate internet facilities, lack of access to hand-held computer and lack of access to computer applications software programs for teachers productivity as shown by a cumulative mean average of 2.50.

Discussion

In line with research question 1 on the availability of Information and Communication Technology (ICT) resources among the lecturers in FUNAI. The table reveals that while computers and laptops are relatively available, with 65.3% and 74.8% of the respondents stating so, most of the other ICT resources are scarce or lacking. For instance, only 7.5% of the respondents said that projectors were available, and only 11.2% said that uninterrupted power supply was available. This implies that there is a low availability of ICT resources. This finding is consistent with that of Suleiman and Tukur (2015) who assessed the availability, accessibility and utilization of ICT resources in content delivery among lecturers in Federal Colleges of Education in Nigeria, confirm that ICT resources are not available in most of the colleges and that lecturers are not exposed and proficient in using ICT resources. The lack of ICT resources hinders the lecturers from accessing and sharing information, enhancing their pedagogical skills, and engaging in collaborative learning with their peers and students. Therefore, the low availability of ICT resources is a barrier to the acceptance and use of technology by the lecturers.

In line with research question 2, which shows the level of information and communication technology (ICT) resource utilization among lecturers in FUNAI. The table indicates that the lecturers use of ICT resources was low, as most of the statements were rejected based on the decision rule. The only ICT resources that were utilized by the lecturers were websites and search engines, mobile phones, and internet for research purposes. The lecturers did not utilize ICT resources for generating presentations, enhancing lecturer efficiency, accessing web portals and learning management systems, conducting interactive online classes, web broadcasting, or statistical analysis and data interpretation. The cumulative mean of 2.2 confirms that the level of ICT resource utilization was low. The findings collaborate with that of Oyediran and Oyelami (2016) who investigated the availability and utilization of ICT resources for teaching and learning in Nigerian

universities, support this observation. They found that there was a significant relationship between the availability and utilization of ICT resources, and that the lecturers were not proficient in using ICT resources. The low level of ICT resource utilization also affects the quality of education and the professional development of the lecturers, as they are unable to access and share information, enhance their pedagogical skills, and engage in collaborative learning with their peers and students.

In line with research question 3, which shows the challenges facing information and communication technology (ICT) utilization among lecturers in FUNAI. The table reveals that many of the proposed challenges were perceived as being significant by the respondents, as they had a mean of 2.50. The only challenges that were rejected by the respondents were lack of access to website and search engine to access different information available, lack of have access to mobile phones to access information services, lack of web comment and blog, and lack of access to web broadcast or instant messages and chats for lecturers productivity. The challenges facing ICT utilization among the lecturers are consistent with the findings of previous studies that have examined the obstacles of ICT usage in Nigerian tertiary educational institutions. For example, a systematic review by Oyediran and Oyelami (2020) identified inconsistent electricity supply, computer illiteracy, high cost of internet data and electronic services, fear of change, fear of redundancy, lack of adequate facilities and the issue of internet and electronic security as the major barriers to ICT adoption. These challenges affect the availability, accessibility, and effectiveness of ICT resources for teaching and learning. They also discourage the lecturers from integrating ICT into their pedagogical practices.

Conclusion

In conclusion, this research reveals a notable lack of Information and Communication Technology (ICT) resources among lecturers at AE-FUNAI, leading to limited utilization. The low

availability of ICT resources, reflected in both the accessibility and proficiency of lecturers, poses significant challenges to the quality of education and professional development. The findings align with existing literature, emphasizing the impact of resource scarcity on lecturers' ability to access information, enhance pedagogical skills, and engage in collaborative learning.

Furthermore, the low level of ICT resource utilization, as evidenced by the rejection of statements related to various ICT applications, is closely linked to the availability and proficiency issues. The challenges identified, including lack of digital literacy, limited access to ICT devices, inadequate internet facilities, and scarcity of computer applications, align with broader barriers documented in previous studies. In addressing these challenges, it is imperative for AE-FUNAI to focus on improving ICT resource availability, enhancing digital literacy, and providing necessary infrastructure. Additionally, efforts should be directed towards creating a conducive environment that fosters a positive attitude and intention towards ICT utilization among lecturers. Addressing these issues will not only improve the overall learning experience but also contribute to the advancement of educational practices in the institution.

Recommendation

Based on the findings, the following recommendations are proposed for AE-FUNAI:

1. Investment in ICT Resources: AE-FUNAI should prioritize substantial investment in ICT infrastructure, ensuring a sufficient supply of computers, laptops, projectors, and other essential devices. This will enhance the availability of resources crucial for effective teaching and research activities.

2. Digital Literacy Programs: Implementing comprehensive digital literacy programs is essential to address the identified lack of digital literacy among lecturers. Training sessions, workshops, and ongoing support can empower faculty members to confidently utilize ICT resources, thereby improving their proficiency.

3. Improved Internet Facilities: Recognizing the importance of the internet for research and communication, AE-FUNAI should strive to provide reliable and high-speed internet facilities. This step will facilitate smoother access to online resources and collaborative platforms.

References

Akpan, V. V., & Wakili, B. A. (2015). Availability and Utilization of ICT Facilities forTeaching and Learning of Vocational and Technical Education in Yobe StateTechnical Colleges. American Journal of Engineering Research (AJER), 4(2), 113-118. Retrieved from www.ajer.com

Bagozzi, R. P. (2007). The legacy of the technology acceptance model and a proposal for a paradigm shift. Journal of the Association for Information Systems, 8(4), 244-254

Hamilton-Ekeke, J. T., & Mbachu, C. E. (2015). The Place of Information and Communication Technology (ICT) in Teaching and Learning in Nigerian Tertiary Institutions. American Journal of Educational Research, 3(3), 340-347.

Meenakshi. (2013). Importance of ICT in Education. IOSR Journal of Research & Method in Education (IOSR- JRME), 3-8.

Nworgu, B. G. (2015). Educational research: basic issues and methodology(3rd ed.). Nsukka: University Trust Publisher

Olokoba, A. A., Abdullahi, A. M., & Omosidi, S. A. (2014). Impact of InformationCommunication Technology (ICT) on the management and performance of secondaryschool teachers in Kwara State, Nigeria. International Journal of Education Learningand Development, 2(3), 60-67.

Owusu-Ansah, S. (2013). Application of Information and Communication Technology(ICT): A comparative analysis of Male and Female Academics in Africa. Retrieved fromhttp://digitalcommons.unl.edu/libphilprac/1087.

Oyediran, O. O., & Oyelami, O. M. (2020). Barriers to ICT adoption in Nigerian tertiary educational institutions: A systematic review. International Journal of Education and Development using

Information and Communication Technology, 16(2), 6-23.

Siddiquah, A., & Salim, Z. (2017). The ICT Facilities, Skills, Usage, and the Problems Facedby the Student of Higher Education. EURASIA Journal of Mathematics Science andTechnology Education, 13(8), 4987- 4994.

Soetan, A. K., & Ominuta, I. M. (2018). Gender Influence on Undergraduates' InformationLiteracy Skills in the use of Internet Resources for Learning in Kwara State, Nigeria. Malaysian Online Journal of Educational Sciences, 6 (3), 12-19

Taleba, Z., Ahmadi, A., & Musavi, M. (2015). The effect of m-learning on mathematics learning.Procedia - Social and Behavioral Sciences, 171(1), 83-89.

Suleiman, A. A., & Tukur, A. (2015). Availability, accessibility and utilization of ICT resources in content delivery among lecturers in Federal Colleges of Education in Nigeria. International Journal of Education and Research, 3(12), 1-14.