RELATIONSHIP AMONG AVAILABILITY, ACCESSIBILITY OF ICT RESOURCES AND TEACHERS' JOB PRODUCTIVITY IN ADAMAWA STATE, NIGERIA

[1]Samuel, Daniel & [2]Kawu, Waziri (Ph.D)

[1&2]Department of Environmental and
Life Sciences Education,
Faculty of Education, Modibbo Adama University, Yola.
Corresponding author: daniel.samuel95@yahoo.com

Abstract

This study examined the relationship among availability, accessibility of ICT resources and teachers' job productivity in Adamawa State, Nigeria. The study had three objectives, three research questions and three null hypotheses. The study adopted the predictive correlational research design. The population of this study is 5458 teachers' and principals' from Senior Secondary schools in Adamawa State. The sample size for this study is 546. The instrument used for data collection were a checklist and structured questionnaire. The validity and reliability of the instruments were established. Data collected were analyzed using Descriptive Statistics of mean and standard deviation to answer research questions, while Inferential Statistics of Pearson Product Moment Correlation Co-efficient and multiple-regression analysis were used in testing the null hypotheses. The result revealed that there is a significant relationship among availability, accessibility of ICT resources and teachers' job productivity in Adamawa State, $F = 112.61$ (df 2, 545), $P < 0.05$. The study concluded that teachers' job productivity in Adamawa State is accounted for by availability and accessibility of ICT resources. The implications of this findings is that if; principals actively make ICT resources available and accessible for teachers, it not only elevates the professional development of educators but also fosters a positive school culture characterized by collaboration and a commitment to continuous learning environment enriched by 21st Century technologies. Based on the findings of the study, it was recommended among others that; Government should ensure the availability of ICT resources for teaching and learning processes in schools, as this could further enhance teachers' productivity in Adamawa State, Nigeria. Principals should ensure that accessibility of ICT resources within the school premises is given maximum attention as this could improve teachers' productivity.

Keywords: Availability, Accessibility, Information Communication Technology (ICT) Resources, and Teachers' Job Productivity.

Introduction

Education means a change in man's conduct of life. It means the upgrading of a man's ability to choose the best alternative available in any circumstance he faces. It means the development of the person to prepare him to adopt the best approach to a problem at any given time. Education defined as 'adjustment ability to a changing situation and environment'. Education is more than an economic investment: it is an essential input upon which life, development and the survival of man depend. Science embraces every attempt of humans to explore and interpret the natural world. It is dynamic and essentially concerned with the search and

explanation of regularities and irregularities in nature. It involves the quest for actions and reactions, causes and effects in the environment. The desire to know is the hallmark of existence and so the study of such subjects as Biology, Chemistry, Physics, Mathematics aims at gaining knowledge about life and the world in which we live. The role played by teachers in teaching science in modern societies cannot be over emphasized. For example, Biology teachers knowledge applies to health, hygiene, nutrition and agriculture. It occupies a central position in the science world being a gateway to professions like nursing, pharmacy, medicine. Teachers job productivity improves students academic performance.

Teachers' job productivity can be regarded as multidimensional (Ali & Haider, 2017). These dimensions are preparation for the lesson notes, instruction, student evaluation, commitment, extracurricular activities, effective monitoring and inspection, effective leadership, motivation and discipline, instructional, professional and personal qualities (Ali & Haider, 2017); contextual and task productivity (Yusoff, Ali, & Khan, 2014); classroom management, considering individual differences among students, using motivational tools continuously, teaching style and methods, finding solutions to students' problems and guidance (Mehmood, Qasim, & Azam, 2013). According to Ali and Haider (2017), teachers' job productivity can be said to be the actualization of teacher's duty effectively and efficiently. These duties includes; teaching the number of period allocated on the timetable regularly and punctually, keeping records, seeing to the cleanliness of the classroom and its environment, maintaining discipline among students in and outside the class, checking and marking notes given to the students regularly, administering assignments, tests and examination promptly. It is generally believed that ICTs can empower teachers and learners, promote change and foster the development of the 21st century skills, but data to support these beliefs are still limited. In other for them to be effective and efficient, they need to acquire an appreciable level of ICT competence. This is necessary in order to meet up with the demands of their job.

Information and Communications Technologies (ICT) at present are influencing every aspect of human life. ICT, or Information and Communication Technology, refers to the broad range of technologies used to manage and communicate information (Kpolovie & Iderima, 2016). According to the authors, ICT encompasses hardware, software, and networking infrastructure that enable the creation, storage, and transmission of information. Essentially, ICT is about how we use technology to communicate and interact digitally. The use of ICT in education lends itself to more student-centred learning. ICT has helped in improving teaching and learning. It is important for teachers in performing their role of creators of pedagogical environments. It is recognized as catalysts for change; change in teaching methods, learning approaches, scientific research. Information and Communications Technology (ICT) has made the world a global village. The importance of ICT in Universities system cannot be over emphasized (Kpolovie & Iderima, 2016). Developments in this global era are controlled by ICT. In fact ICT is one of the greatest gifts of God to man after life. People with the aid of internet, e-mails, Video calls, WhatsApp, Facebook and Short Message Service (SMS) are able to interact and send messages across the continent without barriers of distance and time constraints. Information is freely sought and received within the shortest possible time. People now have access to famous libraries where tangible, current and reliable research information is

published, through the aid of visual libraries (Kpolovie & Iderima, 2016).

The goal of National ICT Policy is to provide a framework for streamlining the ICT sector, and enhancing its ability to catalyze and sustain socio- economic development critical to Nigeria's vision of becoming a top 20 economy by the year 2020. The Vision 20:2020 document further acknowledges the following: In respect of knowledge and digital divide the situation remains worrisome. This is, in terms of knowledge generation, penetration of ICT, access to and usage of internet and telephone penetration (fixed and mobile) and physical infrastructure. The knowledge and digital divide cuts across geographical, gender and cultural dimensions. It exists among the 36 states of the Federation plus the Federal Capital Territory, the 774 Local Governments, rural and urban areas, men and women, rich and poor, young and old, able bodied and disabled, illiterate and educated (FRN, 2013, P.9). Federal universities in the North East Geo-Political Zone are not unaffected by this scenario of knowledge and digital divide. This according to the FRN (2012) could be in the areas of availability, accessibility, usability, training and competence in ICT resources among secondary school teachers of different ranks. This study will focus on availability and accessibility of ICT resources. The effective use of ICT in teaching and learning depends on the availability of these facilities and teachers competence in using them.

Availability of ICT resources refers to provision made in this regard by and or to the secondary schools for effective teaching and learning (Mustapha, *et al.*, 2024). The authors further maintains that one other important factor necessary for achieving the objective of teaching and learning is the extent to which available ICT facilities are utilized. ICT facilities even after they are provided should be properly utilized for positive result attainment. The availability of ICT resources is the ease with which one can obtain ICT resources. It is whether ICT resources can be used by someone. ICT resources provide opportunities for flexible learning as course information are always available and accessible. The availability of ICT resources provides multiple technologies (video, computer and telecommunication) thereby providing visualization aids. Accessibility of ICT facilities may not be a guarantee for their proper utilization. It remains one of the major tasks of principals to ensure that available ICT facilities are readily accessible.

ICT accessibility is a term used to describe the degree to which ICT is accessible by as many people as possible (Ololube, Ajayi, Kpolovie & Usoro, 2012; Kpolovie & Obilor, 2013; and Kpolovie & Iderima, 2016). Accessibility can be viewed as the ability of admitting approach of functionality and possible benefit of some system or entity such as internet, computer and ipad. ICT accessibility is about making sure services and information can be used by a wide range of people. It is also about adjusting computer equipment to enable users to be more productive. Akpan and Obot (2011), maintained that the importance of accessibility to teachers' use of technology for a curricular purpose is almost exclusively a function of their access to that technology. Merely providing schools with hardware, software and in-service training is not enough. Any in-service training needs follow-up support, peer coaching, and peer dialogue to ensure successful usability of new technologies. The success of a school programmes depends much on the way facilities are utilized as this, affects the overall performance of such a school. Consequently, Lawrence and Fakuade (2021) opined that a greater proportion of educational objectives are achieved when there is effective utilization of ICT

facilities than when contrary becomes the case. Expectation is that ICT facilities should be available and properly utilized in secondary schools to inculcate in the learners' skills for individual survival and national development.

Digital literacy must be reflected in teachers' attitudes towards pursuing their academic interests through effective internet use, especially with regard to online teaching. Unfortunately, not all lecturers are fully knowledgeable about these resources at their disposal. It seems impossible to acquire various internet skills based on incompetence, especially the conversion of traditional teaching knowledge online. Despite the above given requirements, the unavailability of some ICT components in schools' hampers teachers' use of ICT (Idoko & Cletus, 2018). Lack of adequate search skills and access points in the schools were reported as factors inhibiting the use of the internet by secondary school teachers (Idoko & Cletus, 2018). According to the authors, most Nigerian teachers are yet to acquire the simple skills of ICT to enable them to benefit from the enormous wealth of information derivable from ICT.

It is not uncommon to find that many establishments in Nigeria, including educational institutions, still keep records in files, tucked away in filling cabinets where they accumulate dust. Many of these files are often eaten up by rodents and cockroaches thus rendering them irretrievable. In most Nigeria schools, administrators still go through the laborious exercise of manually registering students, maintaining records of pupil, performance, keeping inventory list of supplies, doing cost accounting, paying bills, printing reports and drawing architectural designs. The huge man-hour spent on these exercises can be drastically reduced with use of ICT to enhance over all management procedure (Idris, 2024). Teachers at times become bored as they do teach and conduct research in the traditional way which has affected their productivity negatively. Therefore, this study examined the Availability, accessibility, training and perceived competence in ICT resources as correlate of teachers' productivity in Adamawa State, Nigeria.

Purpose of the Study

This study examined availability and accessibility of ICT resources as predictors of teachers' job productivity in Adamawa State, Nigeria. The specific objectives of the study are to examine whether:

1. Availability of ICT resources predict teachers' job productivity in Post Basic Schools in Adamawa State, Nigeria.
2. Accessibility of ICT resources predict teachers' productivity in Post Basic Schools in Adamawa State, Nigeria.
3. Availability and accessibility of ICT resources predict teachers' job productivity in Post Basic Schools in Adamawa State, Nigeria.

Research Questions

The following research questions were raised to guide the study:

1. What is the level of availability of ICT resources in secondary schools in Adamawa State, Nigeria?
2. What is the level of accessibility of ICT resources in secondary schools in Adamawa State, Nigeria?
3. What is the level of secondary school teachers' job productivity in Adamawa State, Nigeria?

Hypotheses

The following null hypotheses were formulated to guide the study and tested at 0.05 level of significance:

H_{01}: Availability of ICT resources do not significantly predict teachers' productivity in Adamawa State, Nigeria.

H_{02}: Accessibility of ICT resources do not significantly predict teachers'

productivity in Adamawa State, Nigeria.

H_{03}: Availability and Accessibility of ICT resources do not significantly predict teachers' productivity in Adamawa State, Nigeria.

Methodology

The study adopted the predictive correlational research design. The population of this study is 5458 teachers' and principals' from Senior Secondary schools in Adamawa State (Post Primary Schools Management Board Yola, 2024). The sample size for this study is 546. The researcher sampled 10% of the entire population which of 5458. The choice of 10% is supported by Nwanna (2005), who stated that 10% is satisfactory in every population of 5000 and above. Hence, the choice of 10%. The sample for this study comprised 513 teachers' and 33 principals. The instrument used for data collection were a checklist and structured questionnaire. A standardized instrument was adapted after careful review of literature. The instrument titled "ICT Resources and Teachers' Job Performance" (IRTJP). The instrument was divided into five sections (A - F), according to the five specific objectives. The validity and reliability of the instruments were established. Data collected were analyzed using Descriptive Statistics of mean and standard deviation to answer research questions, while Inferential Statistics of Pearson Product Moment Correlation Co-efficient and multiple-regression analysis were used in testing the null hypotheses.

Results

Descriptive statistics of mean and standard deviation were used in answering the research questions, while Pearson Product Moment Correlation (PPMC) was used in testing the null hypotheses at 0.05 Alpha level of significance.

Research Question 1: What is the level of availability of ICT resources in secondary schools in Adamawa State, Nigeria?

Table 1: Mean and Standard Deviation of level of availability of ICT resources in secondary schools in Adamawa State, Nigeria.

N=546	Mean	Std. Deviation	Remarks
Internet/web services	3.51	1.44	HL
e-mail	3.34	0.79	ML
MS Word	3.01	1.44	ML
Google form	3.19	1.51	ML
Interactive white board	4.02	1.04	HL
Audiotapes	4.37	1.00	HL
E-Journals	3.84	1.18	HL
Computers	2.94	1.51	ML
Photocopy machines	2.89	1.69	ML
Electronic cameras	4.66	0.86	VHL
Grand Mean	**3.58**	**1.25**	**HL**

The descriptive statistics in Table 1 indicated 546 respondents responded to the level of availability of ICT resources in secondary schools in Adamawa State, Nigeria. The grand mean of 3.58 with standard deviation of 1.25 show the level of availability of ICT resources in secondary schools in Adamawa State is high.

Research Question 2. What is the level of accessibility of ICT resources in secondary schools in Adamawa State, Nigeria?

Table 2: Mean and Standard Deviation of level of accessibility of ICT resources in secondary schools in Adamawa State, Nigeria.

N=546	Mean	Std. Deviation	Remarks
Internet/web services	2.59	1.41	ML
e-mail	4.63	0.53	VHL
MS Word	3.85	1.18	HL
Google form	4.37	1.00	HL
Interactive white board	3.82	1.17	HL
Audiotapes	2.83	1.48	ML
E-Journals	2.89	1.69	ML
Computers	4.66	0.85	VHL
Photocopy machines	2.59	1.41	ML
Electronic cameras	4.63	0.52	VHL
Grand Mean	**3.69**	**1.13**	**HL**

The descriptive statistics in Table 2 indicated 546 respondents responded to the level of accessibility of ICT resources in secondary schools in Adamawa State, Nigeria. The grand mean of 3.69 with standard deviation of 1.13 show the level of accessibility of ICT resources in secondary schools in Adamawa State is high.

Research Question 3. What is the level of secondary school teachers' job productivity in Adamawa State, Nigeria?

Table 3: Mean and Standard Deviation of level of secondary school teachers' job productivity in Adamawa State, Nigeria.

N=546	Mean	SD	Remarks
Preparation of lesson plan and lesson mote	3.10	1.52	ML
Gave assignments that are helpful in understanding the subject better.	3.00	1.68	ML
Described concepts to topic with the fundamental logic behind them.	4.71	0.68	VHL
Briefly summarize the previous lesson at the beginning of each class.	2.69	1.39	ML
Encourage students' to think.	4.65	0.55	VHL
Encouraged students' to seek help whenever in need.	3.91	1.12	HL
Implement new methods of teaching	4.43	0.87	HL
Participate in staff training activities	3.90	1.16	HL
Have knowledge of the subject	2.91	1.50	ML
Attending staff meetings	3.00	1.68	ML
Grand Mean	**3.63**	**1.21**	**HL**

The descriptive statistics in Table 3 indicated 546 respondents responded to the level of secondary school teachers' job productivity in Adamawa State, Nigeria. The grand mean of 3.63 with standard deviation of 1.21 show the level of secondary school teachers' job productivity in Adamawa State is high.

Hypotheses Testing

The following hypotheses were tested at 0.05 level of significance Pearson Product Moment Correlation Coefficient and ANOVA of multiple-regression analysis:

Ho_1: There is no significant relationship between availability of ICT resources and teachers' productivity in Adamawa state, Nigeria.

.

Table 4: PPMC of relationship between availability of ICT resources and teachers' productivity in Adamawa state, Nigeria

	N	Mean	Std. D.	Sig	R
ICT Resources Availability	546	3.5777	.59906		
				0.016	0.13
Teachers' Job Performance	546	3.6381	.75604		

The PPMC in Table 4 show significant relationship between the availability of ICT resources and teachers' productivity in Adamawa state, Nigeria, $P < 0.05$. Since the computed p-value (0.016) is less than 0.05 level of significance, therefore the null hypothesis is rejected and concluded that, there is significant relationship between availability of ICT resources and teachers' productivity in Adamawa state, Nigeria. Furthermore, the r-value indicates that, 13% of teachers' job productivity in Adamawa State in this study is accounted for by availability of ICT resources.

Ho_2: There is no significant relationship between accessibility of ICT resources and teachers' productivity in Adamawa State, Nigeria.

Table 5: PPMC of relationship between accessibility of ICT resources and teachers' productivity in Adamawa State, Nigeria

	N	Mean	Std. D.	Sig.	R
ICT Resources Accessibility	546	3.6920	.63476		
				0.03	0.56
Teachers' Job Performance	546	3.6381	.75604		

The PPMC in Table 5 show significant relationship between the accessibility of ICT resources and teachers' productivity in Adamawa state, Nigeria, $P < 0.05$. Since the computed p-value (0.03) is less than 0.05 level of significance, therefore the null hypothesis is rejected and concluded that, there is significant relationship between accessibility of ICT resources and teachers' productivity in Adamawa state, Nigeria. Furthermore, the r-value indicates that, 56% of teachers' job productivity in Adamawa State in this study is accounted for by accessibility of ICT resources.

Ho_3: There is no significant relationship among availability, accessibility of ICT resources and teachers' job productivity in Post Basic Schools in Adamawa State, Nigeria

.

Table 6a: Regression of relationship among availability, accessibility of ICT resources and teachers' job productivity Post Basic Schools in Adamawa State, Nigeria.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	141.530	2	35.382	112.605	.000[b]
	Residual	169.991	544	.314		
	Total	311.521	545			

a. Dependent Variable: Teachers' Job Performance

b. Predictors: (Constant), ICT Resources Availability, ICT Resources Accessibility

Table 6b: Model summary of relationship among availability, accessibility of ICT resources and teachers' job productivity in Post Basic Schools in Adamawa State, Nigeria

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.674[a]	.454	.450	.56055

a. Predictors: (Constant), Perceived Competence in using ICT Resources, ICT Resources Availability, ICT Resources Usability, ICT Resources Accessibility

Table 6c: Coefficient of relationship among availability, accessibility of ICT resources and teachers' job productivity Post Basic Schools in Adamawa State, Nigeria.

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	1.100	.210		5.245	.000
	ICT Resources Availability	-.373	.087	-.296	-4.301	.000
	ICT Resources Accessibility	.064	.075	.054	.853	.394

a. Dependent Variable: Teachers' Job Performance

The linear regression tables in Table 6a and 6b and 6c show significant differences between the various R values, F = 112.61 (df 2, 545), P < 0.05. Since the computed p-value (0.00) is less than 0.05 level of significance, therefore the null hypothesis is rejected and concluded that, there is significant relationship among availability, accessibility of ICT resources and teachers' job productivity in Post Basic Schools in Adamawa State, Nigeria. Furthermore, the adjusted R-square value (0.45) indicates that, 45% of teachers' job productivity in Adamawa State in this study is accounted for by availability and accessibility of ICT resources.

Findings of the Study

The results of the study generate the following findings: -

1. There is a significant relationship between the availability of ICT resources and teachers' productivity in Post Basic Schools in Adamawa State, Nigeria, P < 0.05, r-value (0.13).
2. There is a significant relationship between the accessibility of ICT resources and teachers' productivity in Post Basic Schools in Adamawa State, Nigeria, P < 0.05, r-value (0.56).
3. There is a significant relationship among availability, accessibility of ICT resources and teachers' job productivity in Post Basic Schools in Adamawa State, Nigeria, F = 112.61 (df 4, 545), P < 0.05.

Discussion of Findings

This study sought to examine availability, accessibility of ICT resources as predictors of teachers' job productivity in Adamawa

State, Nigeria. The findings of the study are discussed below.

The first finding reveals that there is a significant relationship between the availability of ICT resources and teachers' productivity in Adamawa State, Nigeria. The discovery of the significant relationship between the availability of ICT resources and teachers' productivity in Adamawa State, Nigeria, is of paramount importance, carrying extensive implications for the local education system. It emphasizes the pivotal role of availability of ICT resources provided by school principals in the enhancement of teacher job productivity. This relationship is a testament to the idea that when principals actively make ICT resources available for teachers, it not only elevates the professional development of educators but also fosters a positive school culture characterized by collaboration and a commitment to continuous learning. This nurturing atmosphere, in turn, can lead to increased teacher retention rates, reducing the turnover of educators, and ultimately resulting in improved student learning outcomes.

The finding aligns with the research of Apagu and Wakil (2015) whose findings revealed that availability of ICT facilities makes teaching and learning interesting. The authors further revealed that availability of ICT resources helps teacher to be up to date in enhancing the quality of work especially during lessons with students. This finding is however inconsistent with of Ome (2016), whose findings indicated among others that ICT facilities for teaching in senior secondary schools were available to a low extent, although computers were available to a high extent; ICT facilities were utilized to a low extent in teaching in senior secondary schools. The finding disagrees with the research conducted by Adelabu and Adu (2014) whose findings revealed that ICT facilities were not available, and accessed by teachers In addition, it was revealed that biological science teachers do not also have the proper skills required to utilize ICT for effective teaching of the subject. Conclusively, this disagreement could be as a result of the current increase of Education budget especially in terms of ICT resource upgrade by the State Government, to meet national standards. The implication of this finding is that adequate provision of ICT facilities by the government and other stake holders in education could facilitate ICT utilization for effective teaching of Government as a subject in senior secondary schools in Adamawa State, Nigeria.

The second finding reveals a significant relationship between the accessibility of ICT resources and teachers' productivity in Adamawa state, Nigeria. The discovery of the significant relationship between accessibility of ICT resources and teachers' productivity in Adamawa state, Nigeria, is of paramount importance, carrying extensive implications for the full integration of technology in the Nigerian education system. This relationship is a testament to the idea that when principals actively make ICT resources accessible for teachers, it improves classroom management. This findings aligns with that of Olafare, Adeyanju, and Fakorede (2017) whose findings showed that teachers had positive attitude towards the use of ICT. Olafare et al further revealed that teachers had positive attitude toward ICT and were moderately proficient in the use of ICT. The finding whoever disagrees with the research of Augustine, Daud and Kamaruddin (2018) who found that the level of teachers' ICT acceptance and use is low. This inconsistency could be due to recent awareness campaign of Generative Artificial Intelligence (AI) hosted by Open AI (such as Chat GPT). This inconsistency is further supported by Sakiyo, Kumba and Waziri (2017) whose study revealed that teachers have moderate awareness about ICT facilities in

classrooms. The implication of this finding is that with the positive attitude and proficiency in the use of ICT may encourage the integration of ICT in their academic tasks.

The third finding indicated a significant relationship among availability, accessibility of ICT resources and teachers' job productivity in Post Basic Schools in Adamawa State. This findings aligns with that of Anyanwu etal (2016) whose findings showed that availability and use of ICT facilities in teaching and learning by teachers is at a moderate level. This finding aligns with that of Nwachukwu and Asom (2015) whose findings revealed that teachers have average level of computer literacy skills and use it only for typing/printing of lesson notes, computing of students' results, surfing the Internet for information and sending and receiving e-mails. This finding corroborate further with that by Nwankwoala (2015) whose study found out that ICT usage contributed to the change in capacity building level of the users leading to the conclusion that ICT usage contributed to national development. This finding aligns with that of Nwachukwu and Asom (2015) whose findings revealed that a greater percentage of the teachers make use of computer mostly for typing/printing of lesson notes.

This finding however disagrees with that by Okolocha and Nwadiani (2015) whose findings revealed that the few available ICT resources are rarely utilized in the teaching of business education, ICT resources utilization has high influence on teaching and that business educators encounter several problems such as irregular power supply in the utilization of ICT resources. This disagreement is further supported by Andiema (2015) whose findings showed that skilled teachers in ICT have a higher likelihood of using it in the classroom. Moreover, Andiema (2015), revealed further that teachers' knowledge together with a positive attitude towards ICT plays a key role in the adoption and use of ICT in schools. Andiema (2015) revealed that the teachers trained to teach ICT are not sufficient to facilitate its adoption; not to mention the fact that schools in the rural areas lack basic necessities such as electricity and ICT facilities which inhibit the adoption of ICT. The implication of this finding is that schools need to avail opportunities for teachers to expand their knowledge and skills on ICT; especially in areas of accessibility, training and perceived competence in ICT resources.

Conclusion

Based on the findings of this study, it was concluded that there is a significant relationship among availability, accessibility of ICT resources and teachers' job productivity in Post Basic Schools in Adamawa State, Nigeria at $F = 112.61$ (df 2, 545), $P < 0.05$. Additionally, it is concluded that teachers' job productivity in Adamawa State in this study is accounted for by availability and accessibility of ICT resources. It is therefore envisaged that if; principals actively make ICT resources available and accessible for teachers, it not only elevates the professional development of educators but also fosters a positive school culture characterized by collaboration and a commitment to continuous learning environment enriched by 21st Century technologies.

Recommendations

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

1. Government should ensure the availability of ICT resources for teaching and learning processes in schools, as this could further enhance teachers' productivity in Adamawa State, Nigeria.
2. Principals should ensure that accessibility of ICT resources

within the school premises is given maximum attention as this could improve teachers' productivity. Also, technocrats in the Ministry of Education are to come to the aids of teachers by helping them make informed decisions through various platforms of exhibition of the various teaching technologies accessible for enhanced pedagogical delivery in this 21st century classroom.

3. It was therefore, recommended that Adamawa State Government should increase the funding of education sector to cater for ICT programme by ensuring adequate availability and accessibility of ICT resources in public senior secondary schools, as this would foster permanent ICT literacy among secondary school teachers.

References

Adelabu, O. A. & Adu, E. O. (2014). Assessment of accessibility and utilization of information and communication technology (ICT) for effective teaching of Biological Science in secondary schools, Department of Microbiology, University of Fort Hare, South Africa, *Mediterranean Journal of Social Sciences, MCSER Publishing, Rome-Italy, 5*(23), 1439-1444.

Akpan , C. P. (2014). ICT competence and lecturers' job efficacy in universities in Cross River State, Nigeria, *International Journal of Humanities and Social Science*, 4(10), 259-265.

Akpan, Ima-obong & Obot, A. (2011). No access, no use, and no impact: Snapshot surveys of educational technology in K-12. *Journal of Research on Technology in Education, 36*(1), 15-27.

Ali, A., & Haider, S. Z. (2017). Developing a validated instrument to measure teachers' job performance: Analyzing the role of background variables. *Journal of Educational Research, 20*(1), 21-29.

Andiema, N. C. (2015). Adoption of Information Communication Technology on Teaching and Learning in Public Pre-Schools in North Rift Region, *Kenya, Chemistry and Materials Research, 7*(1), 124-137.

Anyanwu, J. O.; Ekechukwu, L. E.; Ettu, T.U.; Ndunagu, J. N. & Faustina. E. (2016). Competency skills and use of ICT by teacher educators in Imo State tertiary institutions, *American Journal of Education and Learning,* 1(1), 1-15.

Apagu, V.V. & Bala, A. W (2015). Availability and Utilization of ICT facilities for teaching and learning of Vocational and Technical Education in Yobe State Technical Colleges. *American Journal of Engineering Research* (AJER), 4(2), 113-118.

Augustine, N., Daud, S. M. & Kamaruddin, N. S. (2018). Lecturers' use of ICT in teaching and learning in aba north district secondary schools. *IOSR Journal of Humanities and Social Science (IOSR-JHSS)*, 23(4), 30-40.

Federal Republic of Nigeria (2013). *National policy on education.* Abuja: NERDC.

Federal Republic of Nigeria (2013). *Nigerian National Policy for Information Technology (IT).* [Online]

http://www.nitda.gov/docs/policy/ngitpolicy.pdf

Federal Republic of Nigeria (2012). *National information and communication technology (ICT) policy.* The Ministry of Communication Technology.

Idris, S. (2024). Application of Information and Communication Technology (ICT) facilities to technical services division of Ibrahim Babangida Library, Modibbo Adama University, Yola, Adamawa State, Nigeria. Jewel Journal of Librarianship, 19(1), 23-29.

Idris, S. & Dauda, J. (2019). Awareness and Utilization of the Internet Resources and Services for Academic Activities by the Academics of Tertiary Institutions in Adamawa State, Nigeria. *International Journal of Knowledge Content Development & Technology, 9*(2), 7-31.

Idoko, A. A. & Cletus, E. (2018). Influence of Management Information System on Communication and Examination Administration in Secondary Schools in Benue State, Nigeria: A Discourse on Educational Issues, A book of Readings in Honour of Professor Adejoh, Musa James. Pp. 195-209

Kpolovie, P. J. & Iderima, E. C. (2016). Learners 'readiness for MOOCs: Inequity in Nigeria. *European Journal of Computer Science and Information Technology, 4(3),* 16-46.

Kpolovie, P. J. & Obilor, I. E (2013). Adequacy-inadequacy: Education funding in Nigeria, *Universal Journal of Education and General Studies, 2(8), 239-254.*

Lawrence, K. C. & Fakuade, O. V. (2021) 'Parental involvement, learning participation and online learning commitment of adolescent learners during the COVID-19 lockdown', *Research in Learning Technology*, vol. 29. doi: 10.25304/rlt.v29.2544.

Mehmood, T., Qasim, S., & Azam, R. (2013). Impact of emotional intelligence on the performance of university teachers. *International Journal of Humanities and Social Science*, *3*(18), 300-307.

Mustapha, S., Rahman, O. M., Olawepo, O. A., Ajisafe, A. O., & Owolaye, J. M. (2024). Institutionalizing information communication technology competences among Nigerian entrepreneurs in a global economy. *International Journal of Intellectual Discourse, 7*(1), 299-307.

Nwachukwu, V. N. & Asom, F. (2015). Utilization of computer technology for academic work by lecturers of university of Jos–Nigeria. *International Journal of Library and Information Science Studies, 1*(2), 14-22.

Nwankwoala, H. N. L (2015). An investigation of lecturers' and students' use of ICTs in Nigerian university education as a panacea for national development. *Research on Humanities and Social Sciences* (Online), *5*(20), 57-88

Okolocha, C. C. & Nwadiani, C. O. (2015). Assessment of utilization of ICT resources in teaching among tertiary institution business educators in South Nigeria. *Journal of Education and Learning, 4*(1), 1-12.

Olafare, F. O.; Lawrence, O. A. & Fakorede, S. O. A. (2017). Colleges of Education lecturers' attitude towards the use of information and communication technology in Nigeria, *Malaysian Online Journal of Educational Sciences, 5*(4), 1-12.

Ololube N. P.; Ajayi O. A.; Kpolovie, P. J & Usoro, A. (2012). Assessing the role and function of IT/IS training and development and policy implementation in a public organization. http://www.igi-global.com/chapter/assessing-role-function-training-development/65928 80- 96.

Ome, S. O. (2016). *Extent of utilization of information and communication technology in teaching of government in senior secondary schools in Awka Education Zone.* Research project submitted to the Department of Social Science Education, Faculty of Education University of Nigeria, Nsukka in partial fulfillment of the requirements for the award of Master (M.Ed.) Degree in Social Science Education (Education /Political science).

Sakiyo, J.; Kumba, A. I. & Waziri, K. (2017). Perceived lecturers' awareness and level of competencies in using information and communication technology facilities, *International Journal of Contemporary Applied Researches, 4*(6), 109-118.

Yusoff, R. B., Ali, A. M., & Khan, A. (2014). Assessing reliability and validity of job performance scale among university teachers. *Journal of Basic and Applied Scientific Research, 4*(1), 35-41.