

## IMPACT OF LOCATION ON THE IMPLEMENTATION STRATEGIES OF INFORMATION AND COMMUNICATION TECHNOLOGY IN COLLEGES OF EDUCATION IN NORTH-WEST, NIGERIA

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### Abstract

This study investigated the impact of location on ICT implementation strategies in Colleges of Education in North-West, Nigeria. The study was guided by the objective: to find out the impact of location on the implementation of ICT strategies in Colleges of education in North-West, Nigeria. Research question and hypothesis are in line with the objective. The study adopted descriptive survey research design. Population of the study comprised 2,500 teachers. Sample of 125 teachers was randomly selected. Information and Communication Technology Location Questionnaire (ICTLQ) was used as the instrument for data collection. Using Cronbach's Alpha, the instrument yielded reliability coefficient of 0.72. Mean and standard deviation were used to answer research questions while analysis of variance was used to test the hypotheses. The findings of the study revealed that location of college of education has significant impact on the implementation strategies of ICT. The study recommended that government and teachers should implement ICT in colleges of education in North-West, Nigeria.

**Keywords:** Location, Implementation strategies, Information and Communication Technology (ICT), Colleges of Education

### Introduction

The National policies of education recognize the prominent role of ICT in the modern world thereby integrating it into education in Nigeria (NITDA, 2019). This prompted for the inclusion of Information and Communication Technology policies in the National policy on education (Deborah, Lydia & Abigail, 2019). For full integration and implementation into all the facets of Nigeria's educational system, the policies stated that the government shall provide necessary infrastructure and training for the integration and implementation of ICTs in all educational institutions. It is glaring and overtly imperative that the 21st century requires basic

skills and competencies which an individual is required to possess for optimal functioning and survival in this age digital literacy and innovative technology.

As asserted by Onwuagboke, Singh and Fook (2015), the acquisition of these skills depends on the effective integration of information and communicating technology in every facet of school administration, teaching and learning processes in order to empower individuals for lifelong learning to become a better productive individual, useful to both self and the society. It is without doubt, considering the result and findings of scholarly investigations and statistical records that institutions of higher learning globally are adopting ICTs in teaching and learning processes to create a thriving and competitive environment for both students and teachers to engage in collaborative and adaptive learning to gain access to more robust information, learning content and approaches. ICT can be extensively harnessed and deployed to improve the pace and level of development in teaching and learning processes (Twining & Henry, 2014; Olafare et.al, 2017).

Reviewed literature such as Ogunode et.al. (2021) posits that information and Communication Technology (ICT) is used by all human resource in educational institutions. Students use ICT to support their learning programme. Teachers use ICT for e-teaching, preparation of lecture notes, assignment for students, examination, and carry out personal or academic research. Non-academic personnel use information and Communication Technology (ICT) to carry out administrative services like storage of students and staff information, sending and receiving memo, student payment, academic activities and performance etc. Goyal (2017) revealed that the creative use of Information and Communications Technology in education has the capacity to improve the quality of people's live by enhancing teaching and learning which invariably translates to developed human capacity and problem solving ability.

The implementation of ICT in schools have been bedevilled by factors which include poor internet connectivity, innovative technological constraint, lack of adequate ICT skills, student poor orientation, poor maintenance culture resulting to complete breakdown system and gadgets, lack of personal computing systems and other ICT gadgets, erratic power supply, lack of awareness and use of electronic information resources by some students, teachers and administrators etc (Bonnie, & Tijani, 2020; Bashar, & Umar, 2019; Ibrahim and Obinna, 2024). The impact of ICT integration and implementation in educational activities is becoming indispensable considering the global shift from low technology to prompt, real-time and high technology in everyday life (Nidhi and Sunita, 2019; Noida and Aristovnikm, 2012). It is worthy to note that many ICT driven educational policies that have been formulated have not been implemented due to lack of fund, technological divide, and political instability amongst others (Ogunode & Jegede, 2020). Ogunode, Nasir, Yahaya and Deborah (2021), identified poor implementation of ICT policies as one of the challenges of effective utilization of ICT in Nigerian schools. Fasiku (2014) revealed that though ICT has begun to have a presence but the impact has not been as extensive in education comparison to other fields such as medicine, economics and engineering due to limitations posed by poor implementation strategies. This

study thus became more critical considering the importance of teacher education to the growth and development of the individuals and the nation.

### **Statement of the Problem**

In spite of the accompanying gains and the clarion call for adoption and utilization of ICT in Colleges of Education, there are impeding factors that pose limitations to the implementation of ICT in Colleges of Education thus prompting to ascertain the impact of location on implementation strategies of Information and Communication Technology in Colleges of Education in North-West, Nigeria. Salini, and Reeves, (2017) studied the factors affecting students' adoption of ICT tools in higher institutions: An Indian context. None of these investigations considered the impacts of location (urban or rural) on ICT implementation strategies in Colleges of Education given the importance of teacher education in the overall quality of a nation's education. There is therefore need to domesticate these findings putting into consideration, the impact location may have on the implementation of ICT strategies in Colleges of Education in Nigeria.

The purpose of this study is entrenched in the development of achievable ICT implementation strategies for colleges of education in Nigeria considering urban and rural location effect to drive holistic adoption and optimal utilization of ICT for educational administration, teaching and learning activities in Colleges of Education in Nigeria to improve teacher quality which invariably translates to quality technological drive and digital literary basic, secondary and tertiary education in Nigeria. This investigation aims at providing beneficial understanding of impactful ICT implementation strategies for tech-driven administration, teaching and learning activities in colleges of education in Nigeria. To this effect, education should be seen as using technology not only as an end in itself, but as a means to promote creativity, empowerment and equality to produce efficient learners, teacher educators and problem solvers.

### **Objective of the study**

This investigation tends to find out the Impact of Location on the Implementation strategies of Information and Communication Technology in Colleges of Education in North-west, Nigeria. Specifically, this investigation tends to:

1. find out the impact of location on the implementation of ICT strategies in colleges of education in North-west, Nigeria,

### **Research Question**

1. What is the impact of location on the implementation of ICT strategies in colleges of education in North-west, Nigeria?

### **Hypothesis**

The formulated hypothesis will be tested at 0.05 alpha level of significance.

**HO<sub>1</sub>** There is no significant relationship between location and the implementation of ICT strategies in colleges of education in North-west, Nigeria.

**Methodology**

This investigation adopted a descriptive survey research design which was used to collect data on the impact of location on the implementation strategies of information and communication technology in colleges of education in North-west, Nigeria. The study population consisted of 2,500 teachers. The sample size of 125 was randomly selected. Information and Communication Technology Location Questionnaire (ICTLQ) was used as instrument to elicit response from respondents. The questionnaire consisted of 30 items. The instrument was validated respectively by experts in instructional technology and educational measurement and evaluation. A pilot test was conducted to determine the instruments reliability and usability. The statistical tool used for the internal consistency was the Cronbach’s Alpha. A reliability coefficient of 0.72 was obtained. Mean and standard deviation were used to answer research question while, Analysis of Variance (ANOVA) was used to test the hypothesis.

**Results**

Research Question: What is the impact of location on the implementation of ICT strategies in Colleges of education in North-west, Nigeria?

**Table 1:** Mean ( $\bar{X}$ ) and Standard Deviation (SD) of respondents on the impact of location on ICT implementation strategies.

S/N	Item Statements	Urban Mean ( $\bar{X}$ )	Std. Deviation	Rural Mean ( $\bar{X}$ )	Std. Deviation	Grand Mean ( $\bar{X}$ )	Remark
1	Location influence the use of ICT personnel for training of teachers for the implementation strategies in North-West Colleges of Education	3.43	.502	3.48	.502	3.45	Accepted
2	Power supply is a factor when ICT is to be implemented in urban or rural in North-West Colleges of Education	3.37	.490	3.46	.584	3.41	Accepted
3	Power supply in Colleges of Education in North-West rural area is a factor that limits the implementation of ICT strategies.	3.09	.284	3.56	.500	3.32	Accepted

4	Colleges of education in North-West urban areas implement ICT strategies in classroom than Colleges of Education in rural area	3.46	.505	3.42	.807	3.44	Accepted
5	Location affects the supervision of Colleges of Education in North-West by NCCE delegates for ICT implementation strategy application	3.03	.618	3.60	.493	3.31	Accepted
6	The implementation of ICT strategies in rural area will increase the standard of Colleges of Education in North-West, Nigeria	3.37	.547	3.52	.502	3.44	Accepted
7	Rural location of Colleges of Education in North-West affect the skills for ICT implementation strategies	2.60	.847	3.31	.774	2.95	Accepted
8	Location of Colleges of Education in North-West influence students' involvement in ICT implementation in classroom	2.83	.618	3.39	.575	3.11	Accepted
9	Location affect the increase in knowledge about new ICT equipment for implementation in Colleges of Education in North-West, Nigeria	3.03	.664	3.49	.585	3.26	Accepted
10	Good infrastructural facilities e.g good road are needed for effective implementation of ICT in Colleges of Education in North-West, Nigeria	2.91	.919	3.41	.616	3.16	Accepted
<b>Cumulative Mean (<math>\bar{X}</math>) =</b>		<b>3.11</b>		<b>3.46</b>		<b>3.28</b>	<b>Accepted</b>

Results in table 1 shows that of the 10 items stated, the respondents accepted all the items rejecting none on the influence of location on the impact of ICT implementation strategies on Colleges of Education in Nigeria. The mean ( $\bar{X}$ ) of each of the items range from 2.60 to 3.60 giving a cumulative mean ( $\bar{X}$ ) of 3.28 which by the rating scale fall under the agree rule. This therefore establishes the impact of location on ICT implementation strategies in Colleges of Education in Nigeria is positive. This therefore shows that urban and rural location of Colleges

of Education shared similar opinion on the impact of ICT in Colleges of Education. The standard deviation for each of the items ranged from .284 to .919. This also implies that the respondents had similar opinions in their responses.

**Hypothesis**

H0<sub>1</sub>: There is no significant relationship between location and the implementation of ICT strategies in colleges of education in Nigeria.

**Table 2:** Analysis of Variance (ANOVA) of impact of location on ICT implementation of strategies in Colleges of education in Nigeria.

Source	Sources of Variables	Sum of Squares	Df	Mean Square	F	Sig.
Location	Between Groups	.833	1	.833	3.373	.069
	Within Groups	30.367	123	.247		
	Total	31.200	124			

Result in table 2 indicates that location would be a statistically significant factor in the implementation of ICT strategies in urban and rural Colleges of Education. Where F = 3.373, Df = 31.20; P = .069 > 0.05. The null hypothesis therefore was rejected indicating that there is a significant difference in location. This implies that urban and rural location of Colleges of Education has impact on the ICT implementation strategies in Colleges of Education.

**Discussion of Findings**

The finding of the study indicates that location (urban or rural) has impact on ICT implementation strategies in Nigeria. While the ICT implementation strategies were positive and proves to be effective when applied, education stakeholders should consider the factors that pose limitations to the successful implementation of ICT strategies in Colleges of education in Nigeria. This is in line with the findings of Bonnie, & Tijani (2020) on the availability, awareness, and use of electronic resources shows that location of Colleges of Education in either urban or rural area influences the strategies for implementing ICT.

The finding of the study also relates to Aristovnikm (2012) which revealed that ICT has an impact on educational performance. Similarly, the study findings agrees with the findings of Anunobi (2014) which showed that university student-teachers in North Central Nigeria are average in their level of ICT literacy. There was also no significant difference in the level of ICT literacy by student teachers in Arts, Sciences, and Social Sciences. The finding of the study also resonate with (Ogunode & Jegede 2020; Ogunode, Nasir, Yahaya and Deborah 2021), which identified poor implementation of ICT policies due to the challenges of effective usage of ICT in Nigerian schools, lack of fund and political instability. Notable among the findings is the importance of ICT implementation in colleges of education. This is in line with the

finding carried out by Ibrahim and Obinna (2024). They posit that effective ICT implementation strategies contributes immensely to the overall development of the educational system since colleges of education train and develop teachers who man the responsibility of teaching and learning.

## **Conclusion**

Implementing the use of ICT is both challenging and rewarding. The arrival of digital technologies in schools has impacted the roles and responsibilities of Colleges of Education in significant ways. ICT has triggered demands for systematic and innovative changes in schools. Inevitably school administrations and teachers feel the pressure to change and must find ways of implementing and sustaining technological innovation (ICTs).

From the results of the study obtained, at location has significant impact on Information and Communication Technologies implementation strategies in Colleges of Education. It was found that the strategies for the implementation of ICT in Colleges of Education were not effective. Thus urban or rural location of Colleges of Education however did significantly influence the strategies for the implementation of ICT. This therefore, connotes that education stakeholders should as a matter of importance provide every necessary expertise, tools and equipment that will drive the successful implementation of ICT strategies in colleges of education irrespective of its location (urban or rural). The ICT implementation strategies in Colleges of Education in Nigeria, in this study would be effective if implemented.

## **Recommendations**

The following recommendations were made based on the finding of the study:

1. Training programs should be conducted throughout the colleges of education. These programs should be provided by the central unit and designed to provide teachers with “hand-on” workshops and seminars on integrating ICTs. These training sessions should include not only workshops and tutorials but also collaboration between experienced and non-experienced teachers. Thus, schools should encourage experienced teachers to demonstrate to their peers how they are effectively integrating ICTs in instruction based on their philosophy and pedagogy. This training should be continuous periodically on computers and ICT skills acquisition and innovations.
2. There should be development and training of ICT experts specifically for instructional design and development who will work in partnership with teachers.
3. Ministries of Education at all levels should establish district-level ICTs implementation policies to ensure that teachers interested in fully implementing ICTs in instruction are supported by the College administration and provided with the technology needed to support such implementation including computer labs and high-speed Internet access. These district-level ICTs policies should also cover policies regarding incentives (e.g., monetary support and rewards) copyright issues, promotion, and tenure.

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