

## Impact of Information and Communication Technology Facilities on the Effective Administration of Colleges of Education in Enugu State

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### ABSTRACT

*The study examined the impact of information and communication technology facilities on the effective administration of Colleges of Education in Enugu State. Two research questions guided the study while two null hypotheses were tested at .05 level of significance. Descriptive survey research design was adopted for the study. The population for study comprised 164 respondents which consisted of 120 male and 44 female administrators. There was no sampling because the population was manageable. The instrument for data collection was researcher developed structured questionnaire titled "Impact of Information and Communication Technology facilities on Administration of Colleges of Education Questionnaire (IICTFACoEQ)". The instrument contained 14 items based on the two research questions. Research experts in Faculty of Education, Enugu State University of Science and Technology validated the instrument. The reliability of the instrument was determined by the use of Cronbach Alpha statistic which yielded 0.84 for cluster 1 and 0.82 for cluster 2 with an overall reliability index of 0.83 which made the instrument reliable. The researchers used mean and standard deviation to answer the research questions and t-test statistic to test the null hypotheses. The findings of the study showed that ICT facilities impact effective administration of Colleges of Education in Enugu State in terms of enhancement of teaching and learning and improved communication to a great extent. In view of the*

*findings, the study recommended that Colleges of Education administrators should be encouraged to fully incorporate ICT facilities in order to have a smooth teaching and learning process as well as improved communication.*

**Keywords:** Information and Communication Technology facilities, Administration, Colleges of Education

## **Introduction**

One of the fundamental rights for every human being is education. Education is the process of facilitating learning, or the acquisition of knowledge, skills, values, beliefs and habits. Education is an instrument per excellence for effecting national development (Federal Republic of Nigeria, (FRN), 2013). Colleges of Education which the present study laid emphasis on are teacher education institutions for the training of middle level manpower. The Colleges admit and train candidates for three years after Senior Secondary School education for the award of the Nigeria Certificate in Education (NCE). Graduates of the Colleges of Education can teach at the pre-primary, primary and junior secondary school levels of Nigerian educational system. A College of Education basically is National Certificate of Education (N.C.E.) awarding tertiary institution but may be a degree-awarding tertiary educational institution too. Their primary mandate is to produce well trained teachers. Colleges of Education in Enugu State are owned either by the government or individual/group of individuals. The college of education typically has its own administrative structure responsible for managing its programmes, courses among others.

College of education administration encompasses effective policy development. According to Okorie (2012), administration is a social process that concerns the identification, motivation, controlling other integral bodies so as to accomplish their stated goals. Whenever, these administrative duties are done in an easy, economical and socially inclusive manner, it is described as effective. Effective administration is a multi-dimensional concept which showed the core strategies of the administrator in managing efficiently the operational functions, correspondences, and activities in achieving goals within a stipulated time according to the policies and laws of the organization. In order to improve administrative efficiency, Eze (2015), posited that there is need for the integration of Information and Communication Technology facilities.



Generally, the term information and communication technology (ICT) refers to any arrangement that is capable of capturing, storing, retrieving, manipulating, transmitting or receiving of information or data. ICT is defined as computer based tools used by people to work with the information and communication processing needs of an organization. It encompasses the computer hardware and software, the network and several other devices (video, audio, photography camera, etc.) that convert information (text), images, sound and motion and so on into common digital form (Milken Exchange on Education Technology in Onwuagboke, 2015, (Ukeh, Okeke, Okechukwu, Eziokwu, Onovo & Orié, 2020). Information and Communication Technology (ICT) has become most popular and easy means of disseminating information. The 21<sup>st</sup> century has witnessed tremendous advances in technology, which have led to far reaching development in the administrative and academic system (Ukeh & Nwankwo, 2023). In the world at large, it is acknowledged that ICT is growing at a rapid pace with emerging technologies continuing to develop (Onyekaba, 2021). The integration of ICT in education might have changed the teaching and learning process.

Teaching and learning process is an act of imparting knowledge to others because it involves the transmission of information, ideas, concepts from a teacher to students. Teaching and learning being two faces of the same coin presupposes that teaching leads to learning. Many methods and strategies have been variously used in the learning situation to achieve the desired objectives of classroom instruction. Mostly used is the Colleges of Education in Nigeria is the traditional mode of delivery which is the face to face mode. The coming of ICT into teaching and learning have necessitated a paradigm shift from the traditional method that was teacher centred to the modern method which is learner centred (Trucano, 2005). The gains of such a new approach have been extolled by Buabeng-Andoh (2012) who affirmed the great capabilities of ICT in the spreading of knowledge, making education more real and the development of more efficient educational service. For education, the purpose of ICT is generally to familiarize students and teachers with the use and workings of computers, related social and ethical issues. ICT not only transforms teaching but also the learning processes. ICT enables innovative teaching and learning methods. Through learning management systems (LMS), virtual classrooms, multimedia resources, and online assessment tools, educators can engage students in interactive and

personalized learning experiences. This can improve academic outcomes and make education more accessible to students. The transformation gets to increase learning gains for students that provide learners an opportunity to develop creativity, thinking skills and improved communication skills.

Communication is vital in school or education system. Communication is the exchange of information, ideas and facts between two or more people. Communication, according to Mbipom (2017), is the transmission of information, ideas, feelings, attitude or instruction from one person or member of an organization to another. In the view of Chandler in Nzekwe (2013), communication is a process by which meaning is assigned and conveyed in an attempt to create shared understanding. ICT facilities have played a crucial role in making communication more accessible and inclusive. Technologies such as screen readers, text-to-speech software, and closed captions enable individuals to communicate effectively.

ICT facilitates efficient communication among administrators, faculty members, staff, and students. Through emails, instant messaging, video conferencing, and online collaboration platforms, communication barriers can be overcome, leading to quicker decision-making, enhanced coordination, and effective dissemination of information (Okechukwu & Ukeh, 2022, & Anih & Ukeh, 2023). However, the absence of ICT facilities inhibits the adoption of modern teaching techniques, including multimedia presentations, simulations, and online learning platforms. This affects the quality of education and restricts students' exposure to innovative learning experiences. The absence of digital platforms for collaboration and information sharing impedes timely and efficient communication among college staff, hindering administrative processes and decision-making. By addressing the challenges related to ICT facilities, Enugu State's Colleges of Education can unlock the potential of technology to enhance teaching and learning processes and improve communication among stakeholders. The effective integration of ICT can contribute to better administrative practices and equip students with the necessary digital.

### **Statement of the Problem**

Colleges of Education in Enugu State struggle with outdated administrative practices that hinder effective teaching and learning processes and communication among stakeholders. The absence or inadequate use of ICT facilities is a significant factor contributing to these challenges. Many Colleges of Education in Enugu State lack essential ICT infrastructure such as computer

laboratories, internet connectivity, and multimedia resources. This hampers the integration of technology into instructional methods, limiting the potential for interactive and engaging teaching practices. Also, traditional communication methods, such as paper-based memos and face-to-face interactions, lead to delays, misinterpretations, and limited accessibility. This hampers effective communication between administrators, faculty, students, and other stakeholders. In Enugu State, the administration of Colleges of Education faces numerous challenges in effectively implementing teaching and learning practices and ensuring efficient communication. This study explored the impact of Information and Communication Technology (ICT) facilities on addressing these challenges, specifically in the areas of teaching and learning and improved communication in Enugu State.

### **Purpose of the Study**

The purpose of the study was to ascertain the impact of information and communication technology facilities on the effective administration of Colleges of Education in Enugu State. Specifically, the study sought to:

1. examine the extent to which ICT facilities impact effective administration of Colleges of Education in terms of enhancement of teaching and learning;
2. determine the extent to which ICT facilities impact effective administration of Colleges of Education in the aspect of improved communication.

### **Research Questions**

The following research questions guided the study:

1. To what extent do ICT facilities impact the effective administration of Colleges of Education in terms of enhancement of teaching and learning?
2. To what extent do ICT facilities impact the effective administration of Colleges of Education in the aspect of improved communication?

### **Hypotheses**

The following hypotheses were formulated and tested at 0.05 level of significance:



**H<sub>01</sub>:** There is no significant difference between the mean ratings of male and female administrators on the extent to which ICT facilities impact the effective administration of Colleges of Education in terms of enhancement of teaching and learning.

**H<sub>02</sub>:** There is no significant difference between the mean ratings of male and female administrators on the extent to which ICT facilities impact the effective administration of Colleges of Education in the aspect of improved communication.

### **Research Method**

Descriptive survey research design was adopted for the study. According to Kothari (2011), descriptive survey research design studies are designed to obtain pertinent and precise information concerning the current status, phenomenon and where possible to draw conclusions from the facts obtained. Nworgu (2018), defined descriptive survey research design as those studies that aim at collecting data and describing them in a systematic way. The population for study comprised 164 respondents which consisted of 120 male and 44 female administrators. There was no sampling because the population was manageable. The instrument for data collection was researcher developed structured questionnaire titled “Impact of Information and Communication Technology facilities on Administration of Colleges of Education Questionnaire (IICTFACoEQ)”. The instrument contained 13 items based on the two research questions and was validated by three lecturers in Faculty of Education, Enugu State University of Science and Technology.

The reliability of the instrument was determined by the use of Cronbach Alpha statistic which yielded 0.84 for cluster 1 and 0.82 for cluster 2 with an overall reliability index of 0.83 which made the instrument reliable. Out of the 164 copies administered, the researchers retrieved 158 copies (116 copies from male and 42 from female administrators). Mean ratings and standard deviation were used to answer the research questions, while t-test statistic was used to test the null hypotheses at 0.05 level of significance. In answering the research questions in this study, mean ratings that fell below 2.50 was taken as low extent and any mean rating above or equal to 2.50 was taken as to a great extent. The benchmark of 2.50 was gotten by summing up the weighted options (4+3+2+1=10) and dividing it by total number of response options (4) as follows;  $10/4=2.50$ . The use of standard deviation enabled the researchers to examine the level of dispersion or homogeneity of the respondents’ opinions from the mean. In testing the null

hypotheses, if t-calculated is equal to or greater than t-critical at 0.05 level of significance at an appropriate degree of freedom, the null hypothesis is significant, but if otherwise, it is not significant.

### Data Analysis and Results Presentation

**Research Question 1:** To what extent do ICT facilities impact the effective administration of Colleges of Education in terms of enhancement of teaching and learning?

**Table 1: Mean ratings of male and female administrators on the extent to which ICT facilities impact the effective administration of Colleges of Education in terms of enhancement of teaching and learning**

ITEMS		Male Administrators n = 116			Female Administrators n = 42		
S/N	ICT facilities impact the enhancement of teaching and learning when:	$\bar{x}$	SD	Dec	$\bar{x}$	SD	Dec
1	information are accessed easily.	2.51	0.93	GE	2.55	0.90	GE
2	students learn at their own pace.	2.55	0.93	GE	2.56	0.93	GE
3	enhanced multimedia content are gotten during lecture.	2.54	0.90	GE	2.55	0.93	GE
4	students are engaged actively by interactive learning.	2.63	0.91	GE	2.53	0.90	GE
5	collaboration is effectively facilitated.	2.53	0.92	GE	2.58	0.91	GE
6	personalized learning is assured.	2.50	0.93	GE	2.54	0.93	GE
7	various feedback mechanisms are facilitated.	2.54	0.91	GE	2.55	0.95	GE
<b>Cluster Mean/SD</b>		<b>2.54</b>	<b>0.92</b>	<b>GE</b>	<b>2.55</b>	<b>0.92</b>	<b>GE</b>

Table 1 shows that male administrators' means ranged from 2.50 to 2.63, while the female administrators' means range from 2.53 to 2.58 respectively. The values of the cluster mean are 2.54 and 2.55 with standard deviations of 0.92 and 0.92 respectively. The cluster means are more than 2.50 cut off point set for this study. This implies that ICT facilities impact the effective administration of Colleges of Education in terms of enhancement of teaching and learning to a great extent.

**Research Question 2:** To what extent do ICT facilities impact the effective administration of Colleges of Education in the aspect of improved communication?

**Table 2: Mean ratings of male and female administrators on the extent to which ICT facilities impact the effective administration of Colleges of Education in the aspect of improved communication**

S/N	ITEMS	Male Administrators n = 116			Female Administrators n = 42		
		$\bar{x}$	SD	Dec	$\bar{x}$	SD	Dec
8	messaging platforms are utilized to facilitate quick and direct communication.	2.64	0.84	GE	2.52	0.85	GE
9	online learning management systems are used for assessments electronically.	2.53	0.99	GE	2.62	0.88	GE
10	virtual meetings are conducted.	2.63	0.89	GE	2.59	0.91	GE
11	online communities are used to foster engagement.	2.54	1.00	GE	2.56	0.95	GE
12	digital notice boards are set up.	2.61	0.90	GE	2.63	0.94	GE
13	mobile applications are developed to serve as communication hub.	2.50	0.99	GE	2.59	0.96	GE
<b>Cluster Mean/SD</b>		<b>2.58</b>	<b>0.94</b>	<b>GE</b>	<b>2.59</b>	<b>0.92</b>	<b>GE</b>



Table 2 shows that male administrators' means ranged from 2.50 to 2.64, while the female administrators' means range from 2.52 to 2.63 respectively. The values of the cluster mean are 2.58 and 2.59 with standard deviations of 0.94 and 0.92 respectively. The cluster means are more than 2.50 cut off point set for this study. This implies that ICT facilities impact the effective administration of Colleges of Education in the aspect of improved communication to a great extent.

## Hypotheses

**H<sub>01</sub>:** There is no significant difference between the mean ratings of male and female administrators on the extent to which ICT facilities impact the effective administration of Colleges of Education in terms of enhancement of teaching and learning.

**Table 3: Summary of t-test analysis of the mean ratings of male and female administrators on the extent to which ICT facilities impact the effective administration of Colleges of Education in terms of enhancement of teaching and learning**

Group	n	$\bar{x}$	SD	df	p-value	Decision
Male Administrators	116	2.54	.92			
Female Administrators	42	2.55	.92			
				156	.066	H <sub>01</sub> not rejected

Table 3 shows that at 156 degree of freedom, the p-value was .066 which means that the p-value is greater than 0.05 level of significance set for this study, hence the null hypothesis was not rejected and, therefore, there was no significant difference between the mean ratings of male and female administrators on the extent to which ICT facilities impact the effective administration of Colleges of Education in terms of enhancement of teaching and learning.

**H<sub>02</sub>:** There is no significant difference between the mean ratings of male and female administrators on the extent to which ICT facilities impact the effective administration of Colleges of Education in the aspect of improved communication.

**Table 4: Summary of t-test analysis of the mean ratings of male and female administrators on the extent to which ICT facilities impact the effective administration of Colleges of Education in the aspect of improved communication**

Group	n	$\bar{x}$	SD	df	p-value	Decision
Male Administrators	116	2.54	.92	156	.101	H <sub>02</sub> not rejected
Female Administrators	42	2.55	.92			

Table 4 shows that at 156 degree of freedom, the p-value was .101 which means that the p-value is greater than 0.05 level of significance set for this study, hence the null hypothesis was not rejected and, therefore, there was no significant difference between the mean ratings of male and female administrators on the extent to which ICT facilities impact the effective administration of Colleges of Education in the aspect of improved communication.

### Discussion of Findings

The finding of the study showed that ICT facilities impact the effective administration of Colleges of Education in terms of enhancement of teaching and learning to a great extent. The null hypothesis tested showed that there was no significant difference between the mean ratings of male and female administrators on the extent to which ICT facilities impact the effective administration of Colleges of Education in terms of enhancement of teaching and learning. The finding is in line with Buabeng-Andoh (2012), who posited that ICT facilities impact the effective teaching and learning process.

The finding of the study showed that ICT facilities impact the effective administration of Colleges of Education in the aspect of improved communication to a great extent. The null hypothesis tested showed that there was no significant difference between the mean ratings of male and female administrators on the extent to which ICT facilities impact the effective administration of Colleges of Education in the aspect of improved communication.

### Conclusion



The study centred on the impact of information and communication technology facilities on the effective administration of colleges of education in Enugu State. In view of the findings, the study concludes that ICT facilities are crucial in the administrative processes of Colleges of Education in Enugu State because they impact the enhancement of teaching and learning as well as improved communication to a great extent.

## Recommendations

Based on the findings, the following recommendations were proffered:

1. Colleges of Education administrators should be encouraged to fully incorporate ICT facilities in order to have a smooth teaching and learning process as well as improved communication.
2. ICT facilities should be provided in different Colleges of Education in Enugu State in order to equip them in enhancing teaching and learning process.

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