

EVALUATING INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) SKILLS OF NIGERIAN TEACHERS AS A TOOL FOR ENHANCING QUALITY EDUCATION IN IMO STATE

By

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Abstract

The study evaluated ICT skill of Nigerian teachers as a tool for enhancing quality education in Imo State. The specific objectives of the study were to ascertain the level of acquisition of ICT skills amongst Nigerian teachers and to identify the factors affecting the use of ICT in improving quality education. The population of the study was about 400 teaching staff of public secondary schools in Owerri West Local Government Area of Imo State from the month of April to May, 2022. The sample for this study was made up of two hundred subjects, comprising hundred teachers and one hundred students. Simple random sampling and purposive random sampling techniques were used to select the sample. The instrument used for data collection was a four points Likert scale questionnaire. Two research questions were raised and the study adopted descriptive survey method. The mean was employed to answer the research questions. The findings revealed that there is uncertainty on the level of possession of ICT skills amongst Nigerian teachers because of poor proficiency and competency of teachers with ICT skills and lack of application of ICT skill in teaching students and students' preference to face-to-face contact learning due to technical problems during internet connections. That the factors affecting the use of ICT in improving quality education were lack of fund for procurement of computer system, lack of training workshops and seminars for teachers on the use of ICT for instructions and irregular power supply. The study concluded that most teachers lack ICT skills necessary for enhancing quality education in Imo State and recommended that Government should engage the teachers in in-service training and capacity building to acquire the basic ICT skills and to provide computers, other ICT facilities and an improved power supply for enhancing quality education in Imo State.

Keywords: *Information and Communication Technology (ICT), Skills, Teachers and Quality Education*

Introduction

The foundation of development in economics, Social, Physical and Technology of a nation depends on education. For a nation to develop in every sector, the education of the nation is sacrosanct. According to Offorma (2009), education is the process through which the young acquires knowledge and realizes their potentials and uses them for self-actualization. In view of this, for the present day education to actualize this objective, the role and place of Information and Communication Technology cannot be over emphasized. Leach and Moon (2000) summarized the importance of ICT to include: Critical thinking, information handling skill, problem solving, the refining of understanding, the giving and receiving of prompt feedback, collaborative task, joint decision making and reflection; higher, level conceptualization and complex group interaction. Since teachers are key to knowledge

importation, its therefore important for Nigerian Teachers to acquire adequate Information and Communication Technology skills, to enable them teach effectively in this 21st century. In another development, Ihimekpen (2004) opined that technological trends have changed the way of life of people. It is in the light of these innovation in technology that Adelestan (1988) in (Nworgu 2008), opined that the success of academic workers in today's education world depends on the knowledge of Information and Communication Technology they possessed.

The use of Information Communication Technology (ICT) makes teaching and learning easier, promotes higher order thinking skills, encourages collaboration, improves engagement and knowledge retention, promotes boundary-less classroom, extending the frontiers of knowledge dissemination beyond the four walls of the traditional classroom and gives students memorable lessons if applied properly (Fort, 2017). ICT is an extensional term for Information Technology (IT) that stresses the role of unified communications and the integration of telecommunications (telephone lines and wireless signals) and computers as well as necessary enterprise software, middleware, storage and audiovisual, that enable users to access, store, transmit, understand and manipulate information (Murray, 2017). ICT encompasses all the technology and services involved in computer data management, telecommunications provision, and the internet, it deals with the transmission and reception of information of some kind and fills into all aspects of life, providing newer, better and quicker ways for people to interact, network, seek help, gain access to information and learn (Brown, 2020).

ICT skill of Nigerian teachers refers to digital literate educators with the requisite ability required to improve their teaching practices with the use of specific ICT tools, such as smart boards, web conferencing and webinars, among others, thus, creating a learner-centric' classroom (Shipcom, 2021). A teacher is a facilitator of learning, trained in pedagogy and teaching areas of a particular subject to impart knowledge, skills, attitudes, helps students to realize their full potentials educationally, emotionally, and socially in career selection and transition. The ability of teachers to teach students using ICT depend on the level of ICT skills they possessed. Information and Communication Technology (ICT) can impact positively on students learning when teachers are digitally literate and understand how to integrate it into curriculum.

There are twenty (20) basic technology skills that all educators should now have for enhancing quality education. It includes: word processing skills. spreadsheets skills, database skills, electronic presentation skills. Web navigation skill, web site design skills, e-mail management skills, digital cameras. computer network knowledge applicable to your school system, file management and windows explorer skills, downloading software from the web (knowledge including e-books), installing computer software into a computer system, web CT or blackboard teaching skills, videoconferencing skills, computer-related storage devices knowledge (disks, CDs, USB drives, zip disks, DVDs, etc), scanner knowledge, knowledge of PDAs, deep web knowledge, educational copyright knowledge and computer security knowledge (European Commission, 2021). There are digital education tools such as edmodo, EduClipper, Google classroom which have been created for the teachers' professional development with the purpose of giving autonomy to the students, improving the administration of academic processes, encouraging collaboration and facilitating communication between teachers and learners.

Today in Nigeria, many secondary schools are not ICT driven in their curriculum and most of the Nigerian teachers and students do not have computer system to teach and learn with. Some of them who are ICT compliant complained of fund for the purchase of computers, irregular power supply, and lack of practical applications for adequate practical knowledge in subjects like agriculture and therefore have greater preference for face to face learning in order to socialize with peers and because of technical problems associated with internet connections.

The question is, how many of the public secondary schools in Owerri West are equipped with computers and how many have ICT skilled teachers?

As reported by Nworgu (2008), despite efforts made to improve quality of education in Nigeria with the introduction of ICT, the existing education system is posed with the following problems: uncertainty on the level of possession of ICT skills amongst teachers, inadequacy on evaluation and assessment of ICT facilities in schools, poor assessment on proficiency and competency of teachers with ICT skill and student's preferred form of learning, e-learning or face-to-face learning.

The study aims at examining the Information Communication Technology (ICT) skill of Nigerian teachers as a tool for enhancing quality education in Imo State.

Purpose of the Study

The study sought to:

- i. Investigate the extent teachers in Imo State possess ICT skills
- ii. Ascertain factors affecting the use of ICT in teaching and learning.

Research Questions

The research questions for the study are:

- i) To what extent do Imo State teachers possess ICT skills for effective teaching and learning?
- ii) What are factors affecting the use of ICT in teaching and learning in Imo State?

Methods

The study adopted the descriptive survey method in which questionnaires were carefully administered to respondents which represent the population of the study.

The study evaluated information and communication technology (ICT) skill of Nigerian teachers as a tool for enhancing quality education in Imo State.

The population of the study involved the teaching staff in public secondary schools in Owerri West Local Government Area of Imo State with about four hundred staff capacity.

The study selected the two hundred sample size using Taro Yameni (1964) formula for effective and accurate representation of the entire population.

The Taro Yameni formula is stated thus:

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

Where

$$\begin{aligned} n &= \text{Sample Size} \\ N &= \text{Total Population} \\ e &= \text{Level of significance or degree of freedom } 0.05 \end{aligned}$$

Solution:

$$\begin{aligned} \text{Thus, } n &= \frac{N}{1 + N(e)^2} \\ &= \frac{400}{1 + 400} \end{aligned}$$

$$\begin{aligned}
 &= \frac{400}{1 + 400 \times 0.0025} \\
 &= \frac{400}{1 + 1} \\
 &= \frac{400}{2} \\
 n &= 200
 \end{aligned}$$

Simple random sampling technique was also used to ensure that every member of the population stand the equal chance of being selected in the sample study. The study relied on the teaching staff that have basic knowledgeable on ICT. It also used both primary and secondary sources. The primary source includes the questionnaire while the secondary sources were textbooks, journals, newspapers etc.

Time was taken to present and analyze data collected from questionnaire administered to the respondents. 200 Questionnaire were distributed and 179 was retrieved. The simple percentage and mean score statistical methods were used to answer research questions and chi-square statistics was used to test the hypotheses. Four point rating scale of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD) and rated 4, 3, 2 and 1 respectively was the response form. Mean of 2.5 served as criterion mean. Mean score from 2.5 and above was accepted as Information and Communication Technology Skill acquisition of teachers for enhancing quality education while mean score below 2.5 was not accepted as Information and Communication Technology Skill of teachers improving quality education.

Results and Discussions

Research Question 1

To what extent do Imo State teachers possessed ICT skills for effective teaching and learning?

Table 1

Mean and standard deviation of respondents on ICT skills possessed by teachers for effective teaching and learning.

S/N	Questionnaire number 1	SA	A	D	SD	Σfx	X	Decision
1.	To me teachers possessed ICT skills.	18 (10%)	31 (17%)	21 (12%)	109 (61%)	316	1.76	Rejected
2.	To me teachers are highly competent in use of ICT.	15 (8%)	20 (11%)	26 (15%)	118 (66%)	290	1.62	Rejected
3.	to me teachers with ICT skills used variety of method to teach.	20 (11%)	33 (18%)	26 (15%)	100 (56%)	331	1.84	Rejected
4.	Students prefer subjects thought with ICT than the teacher centered method.	26 (14%)	30 (17%)	23 (13%)	100 (56%)	340	1.89	Rejected
Grand Mean							1.77	Rejected

Table 1 showed the mean score of 1.76, 1.62, 1.84 and 1.89 respectively for items1-4 fall below the decision level of 2.5. These mean values fall below the decision level of 2.50. In addition, the grand mean is 1.77, which is also below the decision level of 2.50. Therefore, the result from the above table indicated that there is low level acquisition of ICT skills amongst Nigerian teachers because of low competency of teachers with ICT skill, lack of application of ICT skill in teaching of students and students' preference to face-to-face or teacher centered.

Research Question 2: What are factors affecting the use of ICT in teaching and learning in Imo State?

Table 2

Mean and standard deviation of factors affecting the use ICT in teaching and learning Imo State.

Questionnaire number 5	SA	A	D	SD	Σfx	X	Decision
1. There is inadequate facilities for storage of computer and other accessories	57 (32%)	71 (40%)	15 (8%)	36 (20%)	507	2.83	Accepted
2. There is lack of fund for the procurement of computer system	59 (33%)	68 (38%)	18 (10%)	34 (19%)	510	2.84	Accepted
3. There is lack of training workshops and seminars for teachers on the use of ICT for instructions	55 (31%)	42 (23%)	44 (25%)	38 (21%)	472	2.63	Accepted
4. There is irregular power supply	49 (27%)	50 (28%)	51 (28%)	29 (17%)	477	2.66	Accepted
Grand Mean						2.74	Accepted

Table 2 indicated that the mean score of the questionnaire item 1-4 were 2.83, 2.84, 2.63 and 2.66 respectively. This showed that these items have means above the decision level of 2.50. In addition, the grand mean is 2.74, which is also above the decision level of 2.50. Therefore, the result from the above table indicates that factors affecting the use of ICT for enhancing quality education in Imo State include lack of fund for the procurement of computer system, lack of training, workshops and seminars for teachers on the use of ICT for instructions and irregular power supply.

$$\text{Expected frequency (E)} = \frac{507}{4} = 126.8$$

All mathematical calculation is done and presented in the table below:

Responses	Observed Frequency	Expected Frequency	0-E	(0-E) ²	$\frac{(0-E)^2}{E}$
Strongly Agree	57	126.8	-69.8	4,872	38.4
Agree	71	126.8	-55.8	3,113.6	24.5
Disagree	15	126.8	-111.8	12,499.2	98.5
Strongly Disagree	36	126.8	-90.8	8,244.6	65.0
Total	507				226.4

Therefore, the calculated chi-square value $X^2_{cal} = 226.4$

To compute the degree of freedom (df), the formula is

$$df = (R-1)(C-1) = (4-1)(2-1)$$

$$= 3 \times 1$$

$$= df$$

Critical value at $df(3)$ is 7.488

Therefore, since the calculated chi-square value X^2_{cal} (226) is greater than the critical value at 7.488, the null hypothesis which says that there is no statistically significant difference between factors affecting the use of ICT and improvement of quality education in Imo State is rejected. Hence the alternate hypothesis which says that there is statistically significant difference between factors affecting the use of ICT in improvement of quality education in Imo State is accepted.

Discussion of Findings

Table 1 revealed that majority of the respondents agreed that there is low level acquisition of ICT skills amongst Nigerian teachers for enhancing quality education in Imo State. In view of this, Nworgu (2008) pointed out some factors have hindered the effective application of Information and Communication Technology among them is the teachers readiness to learn and to use ICT. These have affected self development and personnel training. One cannot give what he does not have, what one gives out is that which he has, most people including most teachers do not know the importance of ICT so as to see the need to acquire knowledge in it.

Another problem is that of poverty, some of the people in this part of the world are so poor that they find it difficult to feed well, talk more of looking for means that will make life easier for them, and because they are poor, they do not want additional expenses on themselves, so they are rather comfortable with the way they have been living their lives and do not want to hear any about ICT. The government is not even helping matters in most cases, through the implementation of policies that are connected with ICT. This has mainly contributed to the fact that most of the teachers know very little or even nothing about ICT.

Findings on table 2 showed that majority of the respondents agreed that there are factors affecting the use of ICT for enhancing quality education in Imo State.

Asogwa (1998) in Nworgu (2008) asserted that government should invest in ICT for educational purposes. Government should make provision for computer sets for schools. Government should look inward on the ratio of students per computer and level of internet connectivity and make adequate provisions.

Conclusion

The study investigate the extent to which Imo State teachers possessed Information Communication Technology (ICT) skills. It uncovered that there is low level of ICT skills amongst the teachers. The study also found that the teachers have poor proficiency and competency in ICT as well as the ability to apply ICT in teaching their students. They have more preference for face-to-face learning. Lack of fund for the procurement of computer system, lack of training workshops and seminars for teachers on the use of ICT for instructions and irregular power supply were factors affecting the use of ICT for enhancing quality education in Imo State. The study concluded that most teachers lack ICT skills necessary for enhancing quality education in Imo State.

Recommendations

The study recommends as follows:

1. There is need for Government to organize in-service training and capacity building for teachers to acquire the basic ICT skills needed for enhancing quality education in Imo State.
2. There is need for Government to provide computers, other ICT facilities and improve power supply for enhancing quality education in Imo State.

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