
QUALITY EDUCATION IN TERTIARY INSTITUTIONS IN OWERRI- IMO STATE: ICT AS A CHANGE AGENT

By

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Abstract

This paper examined quality education in tertiary institutions in Owerri-Imo state: ICT as a change agent. Three research questions guided the study. The study adopted a descriptive survey design. The population of the study comprised of 1039 students offering computer science as a course of study from three tertiary institutions in 2016/2017 academic year of 200, 300 and 400 levels in Owerri-Imo state. This was based on regular programme students of these institutions only. Thus, Alvan Ikoku federal College of Education Owerri has 512 students; Imo state university Owerri has 322 while Federal university of technology has 205 students respectively. However, the researchers employed random sampling and purposive sampling techniques to select twenty percent of the population as sample. Therefore, the sample for the study was 208 students. A twenty-five item rating scale developed by the researchers titled "ICT as a change agent for quality education" (ICTACAFQE) and validated by specialist was used for data collection. The reliability of the instrument was obtained as 0.8 using Cronbach Alpha Statistics. Data were analyzed using mean statistical tool.

The study considered any questionnaire item with mean rating from 0 – 2.49 as negative while from 2.5 – 4 as positive. The result revealed among others that; respondents agreed that ICT plays vital role as a change agent for quality education in tertiary institutions in Owerri-Imo state. Following the findings of the study, it was recommended among others that government at all levels namely federal, state and local should ensure that necessary ICT facilities are adequately provided and training of teachers made possible to ensure ICT inclusion in instructional delivery in our tertiary institutions.

Keywords: Quality Education, ICT, tertiary institutions & teacher.

Introduction

It is worthy of note that education is indisputable for every person because it is a self-enlightening process, which provides us with knowledge about oneself, the world, helps build character, paves the way for a good career, lays the foundation of a stronger nation and crucial to the overall growth and development of an individual and the society in general (Ifegbo, & Ajuzie, 2018). The educational system specifically instructional delivery is naturally propelled or driven by the teacher. The teacher in the 21st century has been described as a guide, facilitator, supervisor as well as an instructor who more or less leads children to discover their potentials. The teacher guides and directs learners on how to construct their own meaning from school lessons (Masello, 2014 ; Ifegbo & Ajuzie, 2016 and Onye & Anyaogu, 2017). To Onye (2012), the teacher is the pivot of teaching and learning, the core objectives of education as well as the center of education. Also, a teacher is one who is able to make the learner want to learn and helps same to learn more (Anyanwu, 2010). Onye cited in Onye and Ajuzie (2018) observed that a well-qualified teacher will know how best to handle the learner and how to develop their intellectual resources. It is the teacher who should direct, organize and encourage the students to become an agent of change in the society (Ajuzie & Ifegbo, 2021 and Iwu, Ajuzie, Nwoke, Lemchi, & Ike, 2018). Rashid, (2015) noted that the progress and advancement of a nation's human capital through training and re-training, largely depends on the educational structure of that nation. Based on this fact, a well articulated and carefully planned educational structure will not only produce high quality human capital but also significantly address the societal problems and challenges.

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Education is the enabler of social and economic change. It is a continuous process of shaping and modifying behaviours of an individual for adequate adjustments in the society. Contributing, Onye and Ajuzie (2018) observed that education is that value which older generation gives the young ones that enable them develop attitude, abilities, skills and other behaviors which are of positive impacts to the society where they find themselves. In any progressive community, education is always used as agent of development. The difference between any two communities is almost the level of education acquired by its citizens. That is why every effort is made to ensure that education is given to members of the community (Iwu, Ajuzie, Nwoke, Lemchi, & Ike, 2018). Teaching and learning in Nigeria educational system begins from pre-primary to tertiary level (NPE, 2013). According to the National policy on education, some of the goals of tertiary education are to develop the intellectual capacity of individuals to understand and appreciate their local and external environments, acquire both physical and intellectual skills which will enable individuals to be self-reliant and useful members of the society, promote and encourage scholarship and community service among others. Therefore, to achieve a sound educational system especially in our tertiary institutions, there is the need for quality education.

The quality of education is the prime factor that determines the worth and significance of the system to both the recipients and the society at large. Quality education is one that focuses on the whole child—the social, emotional, mental, physical, and cognitive development of each student regardless of gender, race, ethnicity, socioeconomic status, or geographic location. It prepares the child for life in almost all endeavors (Onye and Anyaogu, 2017). Quality education is delivered by good teachers, enabled by good teaching and learning processes and facilitated by a conducive learning environment. The challenge of achieving quality education is to find the balance between lofty ideals and ground realities. Quality education in our tertiary institutions cannot take place without the inclusion of information and communication technology (ICT). The needs arise for modern advancement in education to be embraced in our educational system especially at the tertiary level which includes the integration of ICT in teaching and learning. To this end, FRN (2013 p. 18) affirmed among others that the government shall provide necessary infrastructure and training for the utilization of ICT facilities in the school system in recognition of the role of ICT in advancing knowledge

and skill in the modern world. According to Ajuzie and Alugbuo (2012), the emergence of computers and communication technology which is referred to as “Information Technology” has revolutionized teaching and learning system. Akude (2010) defines ICT as a process of gathering, processing, storage, retrieval and spreading information through print, broadcasting, computing and telecommunication media. To Ajuzie and Ukegbu (2015), ICT is of great help in sustainable development in Nigeria as it assists in providing resources which will contribute meaningfully to the global challenges of information age. Also, Tao and Yeh (2013) observed that ICT allow for higher quality lessons through collaborations with both learners and teachers in planning and preparing resources. The ICT and its facilities make instructional delivery an interactive one which invariably enables teachers to control the content and flow of information (Shah & Khan, 2015). Adebayo (2018) describes ICT as scientific, technological and engineering discipline and the management technologies used in the handling of information, processing and applications related to computers.

ICT as an extension equipment could enhance the flow of information in the application of school administration action. According to Ajuzie and Amah (2018), the evolution of higher education in Nigeria combined with the need to sustain and be competitive in a global scenario requires decisions to be taken quickly, effectively and efficiently. Contributing, Ajuzie (2013) observed that the increasing student population in our tertiary institutions accelerated the need for ICT to process, store and retrieve data in fast, systematic and accurate manner without delay.

Furthermore, information and communication technologies (ICTs) have driven e-learning in transforming education delivery and thereby advancing the knowledge economy (Ajuzie & Amah, 2014). ICTs are very powerful tool for diffusing knowledge and information which is fundamental aspects of the education process. ICTs play a pedagogic role that could in principle compliment the traditional practices of the education sector. Undoubtedly, e-learning powered by ICT use in tertiary institutions could help to expand and widen access to tertiary education and learning, improve the quality of education as well reduce the cost of education. This means that effective use of ICT in Imo state tertiary institutions could help to spur positive results in improving the overall teaching and learning experiences as well as in up-lifting the quality of the educational system. The pervasive influence of ICT has

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brought about a rapid technological, social, political and economic transformation, which has paved way to network society organized around ICT.

The truth remains that the field of education has been affected by the penetrating influence of information and communication technology. Additionally, ICT has immensely contributed to the quality and quantity of teaching and learning and research in traditional and distance education. ICT enhances teaching and learning through its dynamic interactive and engaging content and provides real opportunities for individualization of instruction. Information and communication technology has the potential to accelerate, enrich and deepen skills, motivate and engage students learning, helps to relate school experience to work practice, helps to create economic viability for tomorrow's workers; contributes to the total development of the institution; strengthens teaching and learning and provides opportunities for connection between the school and the world (Davis and Tearle, cited in Ogbonna, 2017). Contributing, Ajuzie & Amah (2019) opine that educational systems around the world are under pressure to use the new information and communication technologies (ICTs) to teach the students the knowledge and skills needed in the 21st century teaching and learning. It follows that, mobile phones, laptops, Tablets, iPads, Internet services and other ICT facilities/services are no longer premium goods affordable only by the elite in the society. In Imo state and other states in Nigeria, mobile phones and new technologies like iPads, notebooks and Tablets are now used by low-income earners with even beggars on the streets clutching onto their mobile phones for effective interaction and communication purposes.

Use of ICT in Teacher Education could be of following importance as elicited by Ajuzie & Ipem (2016):

- It facilitates increase in teacher turn over especially in courses where there is lack. For instance Mathematics, Science, English Language etc.
- It enhances the quality of teacher education by exposing pre-service and in-service teachers to resources and information beyond their immediate environment.
- It limits or eliminates the requirements for building classrooms, laboratories and libraries.
- It simplifies the task of the facilitators and broadens the scope of interaction with material and students.

- It helps the learners of distance learning programmes to easily access information from their headquarters, facilitators and elsewhere.
- Facilitate easy adoption by bodies responsible for teacher education such as National Teachers Institute (NTI), faculties or institutions of education in Universities and schools of education in National Open Universities of Nigeria (Femi, Adeoye, Ibrahim, Salawu, 2015).

The ICTs as a change agent has virtually diffused through all sectors, forcing technological changes and creating a culture of dependence on technology. The presence of ICTs has become ubiquitous and its knowledge has deepened. Many countries now regard the understanding of ICTs and mastering of their basic skills and concepts as part of the core of education, alongside reading, writing and numeracy. ICTs have also permeated the business environment, underpinned the success of modern corporations, strengthened value chains and provided governments with an efficient infrastructure for e-governance and e-citizen interface. Moreover, the need for ICTs is that ICTs add value to the processes of learning, and organizes and manages learning institutions across the spectrum. ICTs have been reported to have played a great role in redefining education across the continuum (from the core to the periphery). It has brought massive regeneration and invigoration to teaching, research and learning and enhanced teacher-student interface by creating multiple channels of interaction. The challenges for the educators in tertiary institutions is no longer centered on covering the course content or adopting appropriate teaching or pedagogical strategies but embracing ICT in teaching and learning. Regrettably, scholars like Okolocha & Nwadiani, (2015) and Ajuzie & Ifegbo, (2021) have observed that utilization of ICT resources in teaching is abysmally low in both Colleges of education and Universities. Some of the challenges confronting ICT utilization in teaching and learning includes among others as high cost of ICT resources, electricity power failure, network issues, poor funding, lack of trained ICT teachers, anxiety on the side of some teachers to learn ICT among others (Ajuzie, 2013, Ajuzie & Ukegbu, 2015, Ajuzie & Amah, 2017). Higher institutions in Owerri-Imo state are not exceptional according to research result (Ajuzie, 2013). This situation calls for urgent and persuasive strategies if actually Nigerian government and stakeholders want tertiary institutions to produce quality graduates that will compete favourably with their counterparts in the global labour market bearing

in mind that ICT is inevitable in this present technological advance world and a veritable change agent indeed in the field of education.

Statement of the Problem

Despite the importance of ICT in teaching and learning in tertiary institutions in Nigeria and its attendant needs and benefits accrued to learners and the concerted efforts made by the government to provide training for lecturers on the utilization and integration of ICT and its related resources in teaching/learning, the researchers, through observation and personal interaction with lecturers of tertiary institution in Imo state have observed with dismay that ICT resources/facilities are still grossly inadequate and underutilized in tertiary institutions in Imo state. This has no doubt deprived students/learners of the benefits of learning with ICT resources, as experienced in other parts of the world. The foregoing problems prompted the researchers to carry out this research in order to identify the missing link with the aim of proffering quality education in tertiary institutions in Owerri-Imo state, ICT as a change agent.

Purpose of the Study

The purpose of this study was to examine quality education in tertiary institutions in Owerri-Imo state: ICT as a change agent. Specifically, the study sought to;

1. Ascertain the roles ICT plays as a change agent for quality education in tertiary institutions in Owerri-Imo state.
2. Examine the constraints to effective role playing by ICT as a change agent for quality education in tertiary institutions in Owerri-Imo state.
3. Identify the possible solutions to the constraints to effective role playing by ICT as a change agent for quality education in tertiary institutions in Owerri-Imo state.

Research Questions

The following research questions guided the study;

1. What are the roles ICT plays as a change agent for quality education in tertiary institutions in Owerri-Imo state?
2. What are the constraints to effective role playing by ICT as a change agent for quality education in tertiary institutions in Owerri-Imo state?

3. What are the possible solutions to the constraints to effective role playing by ICT as a change agent for quality education in tertiary institutions in Owerri-Imo state?

Methods

The researchers employed descriptive survey to carry out this study. Population of this study comprised of all the 1039 students offering computer science as a course of study from three tertiary institutions in 2016/2017 academic year of 200, 300 and 400 levels in Owerri-Imo state. This was based on regular programme students of these institutions only. Thus, Alvan Ikoku Federal College of Education Owerri has 512 students; Imo state university Owerri has 322 while Federal university of technology has 205 students respectively. The researchers employed random sampling and purposive sampling techniques to select twenty percent of the population as sample. Therefore, the sample for the study was 208 students.

The instrument used for the study was a rating scale titled “ICT as a change agent for quality education” (ICTACAFQE) developed by the researchers. The instrument consisted of two sections A and B. Section A was used to elicit information on personal data of the respondents, and section B dwelt on the main issues relevant for the investigation. Section B was constructed in three clusters in accordance with the three research questions. Majority of the questionnaire items were constructed in such a way that the respondent agree or disagree with the opinion stated especially in line with the four point rating scale of Strongly Agree (SA), Agree (A), Disagree (DA) and Strongly Disagree (SD) respectively as the respondents ticked the correct answers that appeals to him/her in the space provided. The options were assigned points namely, 4, 3, 2 and 1 accordingly. On the whole, the items were twenty-five which covered the issues specified in the research questions.

The instrument was validated by two educational technology specialist in the department of Curriculum/Instruction and two specialists in Measurement and Evaluation in Alvan Ikoku Federal College of Education, Owerri respectively. The specialists authenticated the instrument. The reliability of the instrument was obtained as 0.8 using Cronbach Alpha Statistics. The 208 copies of the rating scale were administered to the respondents by the researchers and all were returned for data analysis. The study considered any rating scale item with mean rating of 0 – 2.49 as negative

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while 2.5 – 4 as positive. Mean statistical tool was used to answer the research questions.

Results

Research Question 1: What are the roles ICT plays as a change agent for quality education in tertiary institutions in Owerri-Imo state?

Table 1: Mean responses on the roles ICT plays as a change agent for quality education.

S/N	Items	SA	A	D	SD	Mean (x)	Decision
1	ICT helps teachers to interact with students.	600	90	40	08	3.55	
2	ICT helps teachers in preparation of their lessons.	560	75	56	15	3.39	
3	ICT helps to provide feedback for both the teachers and the learners	512	141	50	08	3.42	
4	ICT helps teachers to access with institutions and Universities.	528	135	40	11	3.43	
5	ICT enables self paced learning.	564	114	40	09	3.50	
6	ICT increases a variety of educational services and medium / method,	552	120	50	05	3.50	
7	ICT helps to develop distance education with national contents.	596	111	44	-	3.61	
8	ICT helps to develop a system of collecting and disseminating educational	675	117	40	14	4.07	

	information.					
9	ICT helps to promote equal opportunities to obtain education and information.	604	84	36	11	3.53
10	ICT promotes the culture of learning at school (development of learning skills, expansion of optional education, open source of education, etc.	576	96	38	13	3.48
Cluster mean						3.55 SA

Analysis from table 1 showed that respondents agreed that ICT plays vital role as a change agent for quality education in tertiary institutions in Owerri-Imo state. With a cluster mean of 3.55 which is higher than the acceptable mean of 2.5.

Research Question 2: What are the constraints to effective role playing by ICT as a change agent for quality education in tertiary institutions in Owerri-Imo state?

Table 2: Mean responses on the constraints to effective role playing by ICT as a change agent for quality education.

S/N	Items	SA	A	D	SD	Mean (x)	Decision
11	Poor funding of ICT in tertiary institutions	516	126	64	05	3.42	
12	Lack of technical support	524	147	36	10	3.45	
13	Lack of teacher competencies	616	60	58	05	3.55	
14	Lack of Internet access	528	135	40	11	3.43	

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15	High cost of ICT facilities	604	84	36	11	3.53	
16	Lack of teacher confidence	512	141	50	08	3.42	
17	Erratic electricity power supply	700	78	44	20	4.05	
18	Poor ICT maintenance culture, etc.	512	138	56	06	3.42	
Cluster mean						3.53	SA

The analysis shows that respondents agreed to the fact that there are constraints to effective role playing by ICT as a change agent for quality education in tertiary institutions in Owerri-Imo state. This is supported by the cluster mean score of 3.53 higher than acceptable mean of 2.50.

Research Question 3: What are the possible solutions to the constraints to effective role playing by ICT as a change agent for quality education in tertiary institutions in Owerri-Imo state?

Table 3: Mean responses on the possible solutions to the constraints to effective role playing by ICT as a change agent for quality education.

S/N	Items	SA	A	D	SD	Mean (x)	Decision
19	Federal government funding of ICT in tertiary institutions through tertiary education trust fund (TETFUND).	556	114	42	10	3.47	A
20	Provision of technical support by institutions of higher learning.	544	132	40	08	3.48	A
21	Training and re-training of teachers in tertiary institutions on ICT.	512	156	56	-	3.48	A
22	Provision of Internet access	584	117	26	10	3.54	SA

	by higher institutions for instructional delivery.							
23	Federal government removal of tax on imported ICT facilities to higher institutions in Nigeria.	675	114	50	10	4.08	SA	
24	Availability of electricity power supply to higher institutions.	516	123	50	13	3.38	A	
25	ICT facilities should be regularly maintained and outdated ones changed for better service delivery, etc.	560	78	52	16	3.39	A	
Cluster mean						3.55	SA	

Analysis from table 3 revealed that respondents agreed that items listed such as federal government funding of ICT in tertiary institutions through tertiary education trust fund (TETFUND), provision of technical support by institutions of higher learning, training and re-training of teachers in tertiary institutions on ICT among others as possible solutions to the constraints to effective role playing by ICT as a change agent for quality education. With a cluster mean of 3.55 which is higher than the acceptable mean of 2.5.

Summary of Findings

- The study had the following major findings,
1. Respondents agreed that ICT plays vital role as a change agent for quality education in tertiary institutions in Owerri-Imo state.
 2. Respondents agreed to the fact that there are constraints to effective role playing by ICT as a change agent for quality education in tertiary institutions in Owerri-Imo state.
 3. respondents agreed that items listed such as federal government funding of ICT in tertiary institutions through tertiary education trust

fund (TETFUND), provision of technical support by institutions of higher learning, training and re-training of teachers in tertiary institutions on ICT among others as possible solutions to the constraints to effective role playing by ICT as a change agent for quality education.

Discussion

Roles ICT plays as a change agent for quality education

Analysis from table 1 showed that respondents agreed that ICT plays vital role as a change agent for quality education in tertiary institutions in Owerri-Imo state. With a cluster mean of 3.55 which is higher than the acceptable mean of 2.5. This finding is in-line with the view of Ajuzie and Ukegbu (2015) who affirmed that ICT is of great help in sustainable development in Nigeria as it assists in providing resources which will contribute meaningfully to the global challenges of information age.

Constraints to effective role playing by ICT as a change agent for quality education

The analysis shows that respondents agreed to the fact that there are constraints to effective role playing by ICT as a change agent for quality education in tertiary institutions in Owerri-Imo state. This is supported by the cluster mean score of 3.53 higher than acceptable mean of 2.50.

This finding is in agreement with the observation that some of the challenges confronting ICT utilization in teaching and learning includes among others as high cost of ICT resources, electricity power failure, network issues, poor funding, lack of trained ICT teachers, anxiety on the side of some teachers to learn ICT among others (Ajuzie, 2013 and Ajuzie & Amah, 2017).

Possible solutions to the constraints to effective role playing by ICT as a change agent for quality education

Analysis from table 3 revealed that respondents agreed that items listed such as federal government funding of ICT in tertiary institutions through tertiary education trust fund (TETFUND), provision of technical support by institutions of higher learning, training and re-training of teachers in tertiary institutions on ICT among others as possible solutions to the constraints to

effective role playing by ICT as a change agent for quality education. With a cluster mean of 3.55 which is higher than the acceptable mean of 2.5. The above finding corroborates the opinion of Rashid, (2015) who noted that the progress and advancement of a nation's human capital through training and re-training, largely depends on the educational structure of that nation. Based on this fact, a well articulated and carefully planned educational structure will not only produce high quality human capital but also significantly address the societal problems and challenges.

Conclusion

Quality education in tertiary institutions in Owerri-Imo state cannot be easily achieved without ICT as a change agent. Furthermore, educational systems around the world are under pressure to use the new information and communication technologies (ICTs) to teach the students the knowledge and skills needed in the 21st century teaching and learning. It follows that such ICT facilities as mobile phones, laptops, Tablets, I Pads, Internet services and other ICT facilities/services are needed for effective and efficient instructional delivery; hence the importance of ICT as a change agent in our tertiary institutions cannot be over emphasized and its utilization is now.

Recommendations

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

- i. Teaching and learning with ICT facilities should be maintained and sustained in tertiary institutions in Imo state.
- ii. The government and authorities at the tertiary institutions of learning should ensure that teachers are trained and re-trained to be ICT compliant to enable them utilize such skills in instructional delivery.
- iii. The government of the tertiary institutions should ask philanthropist and utilize internally generated revenue to procure necessary ICT facilities to keep abreast with other tertiary institutions globally in the world of ICT.

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