INFORMATION AND COMMUNICATION TECHNOLOGY FOR CAPACITY BUILDING IN NIGERIA HIGHER EDUCATIONAL SYSTEM: BENEFITS, CHALLENGES AND PROSPECTS

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Abstract

The role of ICT in education cannot be over emphasized. The study examined information and communication technologies (ICT) for capacity building in Nigeria Higher Educational System. The study observed that Nigeria is still lagging behind in its implementation, which has created the digital and knowledge gap to access ICT facilities as a major challenge facing most Nigeria higher educational system. The study concludes that despite the roles played by ICT in education, higher institutions in Nigeria are yet to extensively adopt them for teaching and learning. Several efforts to inculcate ICT into the school system have not had much impact. Problems such as poor policy, project implementation strategies and poor information infrastructure pose as bane to these efforts. The study recommends that government and other agencies must muster the will power to upgrade ICT facilities for teaching and learning, implementation of its polices to fast-track the use of ICT, funding agencies should monitor the release of funds and also should stabilize electricity supply in Nigeria.

Keywords: *Capacity building, Education,ICT.*

Introduction

In the last few decades, we have witnessed one of the most important events in human history thus far the digital and web revolution brought about through information and communication technologies (ICTs). Mezhilakachi (2015) observed that information and communication technology is not only changing the way that we work, study, play, and conduct our lives, but it is doing so much more quickly than any other revolution (such as the industrial revolution), with imparts that are far more reaching. It is possible that all we have seen is the tip of the iceberg. It is difficult to predict all the implications. The ICT revolution has facilitated development in all facet of human life. Computerized systems in general and web based systems in particular can be found in even the smallest businesses. According to Noram (2021), it is also impossible to run a competitive business without a computerized information system. Indeed, global competitive pressures and continuous innovations are forcing many organizations to rethink how they do business. To do so required the ability to successfully incorporate electronic commerce, knowledge management, customer relationship management, and mobile computing into an organization.

In recent times, the world has increasingly become a global village in the sense that people and institutions from different parts of the world now constantly interact, share and communicate freely without the inhibition of distance. This is made possible due to advances recalled in information and communication technologies (ICTs). In the light of these developments, many countries have been actively engaged in using ICT as a tool for development and to integrate technology into their education system.

The Nigerian government just like other developing countries considers ICT as a tool in the transformation of the society (FRN, 2004). She recognizes ICT as a powerful weapon that can effectively accelerate development initiative and make them sustainable in many ways. It is for this reason that higher

institutions of learning have been mandated to facilitate and fast-track human capacity building through the use of ICT (FRN, 2004).

For Nigeria to emerge as a strong economy in the international arena, she must increase the quality of her human resources by using ICT to accelerate it. Using ICT to accelerate development also raises a number of questions, especially in the ability of higher institution to develop human capacities using ICT as a tool.

The National Policy on Education of the Federal Republic of Nigeria (2004:36) stipulates that the goals of tertiary education shall be to contribute to national development through higher level relevant manpower training, among others. This cannot be achieved without proper human resource development. This implies that it is a major function and responsibility of higher education managers to put in place policies and programmes in ICT that will enhance the value of education they provide and make it relevant for human capacity building.

The need for viable prospects for an efficient human capacity development using ICT in higher educational system is very paramount. Rapid changes in technology require higher institution to engage in continues development. This demands that universities academic staff must be well developed to carryout their functions.

Presently, not all lectures have the ability and technical skill required for independent and innovative research nor do they have the technical Skills required for viable human resource development using the ICT.

In today's increasingly technology driven society Sustainable development and improved quality of life are to a large extent dependent in our ability to access information and utilize Science and technology responsibility. It is for this reason that UNESCO places strong emphasis on Science and technology education as essential component of basic education, paying special attention to the promotion of Science and technological literacy for all in both formal and non-formal Settings.

United Nations Education, Scientific and Cultural Organization (UNESCO) sees it as one of its important tasks to encourage the exchange of information and experience on trends and developments in higher education, promote thinking and research on its roles and functions and ultimately assist countries of the world in their effort to develop human capacity.

With the UNESCO initiatives and efforts at assisting member Countries in human capacity building through information Communication technology, many countries through their higher institutions of learning are getting more involved in human Capacity building for national development. The extent to which higher educational system have been able to get involved in the development of high level training and research capabilities using ICT is the Subject matter of this research.

Establishing an informed Society and a knowledge-based economy is the only way to address the myriad of economic challenges in Nigeria's higher educational system. It is possible that the higher educational systemcan play a leading role in this regards, using the ICT as a viable tool. Within the context of this research, ICT is seen as a tool for education rather them an end in itself. its introduction into the higher educational System Should bring about changes that comply with new technique in transforming the Society for them to have positive development impact, the higher educational System must align their use with the goals of Education For All (EFA) and other Millennium Development Goals (MDGs). This background, provide the need for the present study which seeks to investigate the role of ICT for capacity building in Nigeria-higher Educational System.

The need for ICT In Education and Capacity Building

Information and Communication Technologies are of universe importance in the education system and Capacity building in Nigeria educational System, in view of the world wave of technological advance in various institutions. Thus the Federal Government of Nigeria in recognition of the need for ICTs stated in FRN (2004:17) that “in recognition of the prominent role of information and communication technology in advancing knowledge and skills necessary for effective functioning in the modern world, there is urgent need to integrate information and communication in Nigeria”.

However, Davis, Desforges, Jessel, Somekh, Taylor and Vaughan cited in Gusen, Olaninoye and Garba (2017) are of the view that ICT do not automatically add quality to teaching and learning. However, it can accelerate, facilitate and improve the quality of education through problem Solving, information Management, work habit, motivation, establishing life-long learning habit concept of development etc. and these things the traditional face to face method of teaching cannot offer. Supporting this, Coller and Wavemait cited in Nwachukwu (2020) stated that the key idea in the use of ICTs is to use technology to stimulate the

development of intelligence, the ability of solving problems, creativity and technological flexibility. ICTs therefore offer strategies for change by helping Students to develop more open-minded and flexible attitude.

The use of ICT as the modern tool for management of Complex organizations has become the norm particularly for the advanced world. Okorie, Agabi & Uche (2016), State that its adoption in most of the less advanced Societies is yet to achieve the Status of Stability. However, the growing complexities of higher educational System and the Challenges it poses to management makes the application of ICT indispensable for quality assurance. In this jet age where computer and internet is the order of the day it is obvious that every organization need to adopt the modern information technology just as no organization can survive without adequate financial backing, so also, higher institutions may find it difficult to survive the challenges of this time, that is, this era of globalization of the capacity to adopt the modern information technology is not there.

Uche (2022) posited that the Performance of higher educational System' traditional role of teaching research and Contribution to community development, and the administration of these activities generate volumes of raw data that needs to be processed and made available on a regular basis for effective decision making and goal oriented actions. The sheer volume of these data and the complexities of intervening variables transmitting them, whose roles have to be specifically determined, make the use of internet and other ICT devices indispensable.

E-Literacy is capable of providing access to learning at reduced costs, increased participations in the beaming process. So, in today's fact-faced culture, organizations that implement e-literacy provide their workforce with the ability to embark on positive changes. Eenaya cited in Nwachukwu (2020) is also of the view that E-Literacy enables an individual to use ICTs to design, deliver Select, administer and extend learning or communicate with experts, colleagues and professional peers both in and outside the organizations. Still Supporting this view, Ajagun (2021) stated that using ICTcan result to improved learning from different socio-economic backgrounds including the disadvantaged backgrounds, and ICTs impact the Society that learners are in. And so he assets that evidence from research Studies and available data suggests that use of ICTs in particular computer technologies has positive input on learning impart and is linked to positive new generations into direct contact with the technologies that have become part and parcel of the modern world. There are several areas in which ICTs can assist in cognition, the new media allows us to represent ideas in rich and diverse ways such as teaching style, science and technology, also ICTs allow representing and experimenting ideas in a virtual world. ICTs can assist teachers and students in planning and programming cognitive capacity building development, the interactive capacity building of ICTs can help in providing students the opportunities to engage as creators and manipulators in the Learning processes. ICTs equally support us to bring together the aesthetics and scientific consideration. ICTs can qualitatively improve cognition by helping the teachers improve on their creative skills and knowledge and by tailoring learning resources to meet the particular needs of the student at any stage of his or her education.

Information and Communication Technologies can provide various opportunities to easy use of pedagogies. As a tool, ICTs support deductive, collaborative and interactive learning a close research. The capacity of ICTs can deliver information or communicate with a large group of students in a quite individualistic ways, thereby tailoring pedagogy to the needs of students without limitations imposed by peer groups irrespective of time and distance

Olusola (2021) is of the opinion that ICTs are promoting fundamental changes in how to teach and learn. Barriers of time and place are tumbling as technology introduces new choices and opportunities for students and teachers through the distance learning education. He therefore opines that the curriculum has become enriched with the satellite microwave cable and broadcast television by giving students access to courses not available in their schools.

Furthermore, White (2020) believes that ICT can contribute substantially to the improvement of school environment such as pedagogy, curriculum and school organization. It can enhance holistic learning, collaboration grouping, and problem-oriented activities and integrated learning; ICT can assist teachers to teach efficiency and effectively in order to achieve their goals. However, it is important to note that ICT themselves, will not improve pedagogy. They will only support and assist teachers who shift their pedagogies to be student oriented problem-based and collaboration. Hence, White (2020) asserts that ICTs are an excellent tool for drive and practice, tutorial, demonstration, problem-solving, simulation and modeling games, calculating, construction, managing educational resources and information retrieval. This implies that students do not need to wait for their teachers as the only source of needed information. They can source educational information and some educational capacity building.

ICTs application can be used to check truancy and absenteeism to lectures and classwork among students, since every student would be prone to work individually. Indeed ICTs have great roles to play in improving and promoting capacity building in higher educational system in Nigeria. ICTs can reduce cost and increase educational profit through speedy production, storage, communicating and downloading expensive educational materials scattered all over the world on the internet.

ICTs policy in higher education and capacity building

Salau (2023) observed that for ICTs to be effectively applied in higher education for capacity building there is need for the available ICTs policy to be fully implemented. The general goal of such policy should be for more effective creation and delivery of educational products for improved teaching and learning in schools and the society at large. According to Damkor Matthew, Drinyang Damjuma and Hanana Manasseh (2015), the basic objectives of ICTs policy framework that will enhance capacity building are:

- To ensure that ICT resources are readily available to promote efficient national development.
- To guarantee that the country benefits maximally, and contributes meaningfully by providing the global solutions to the challenges of the Information Age
- To empower Nigerians to participate in Software and ICT development
- To encourage local production and manufacture of ICT components in a competitive manner
- To establish and develop ICT infrastructure and maximize its use nationwide
- To empower the youth with ICTs Skills and prepare them for global competitiveness
- To integrate ICT into the mainstream of education and training
- To create ICT awareness and ensure universal access in promoting ICT diffusion in all sectors of national life
- To create an enabling environment and facilitate private Sector (national and multinational) investment in the ICT sector
- To encourage government and private sector joint venture Collaboration
- To develop human capital with emphasis on creating and supporting a knowledge-base Society.
- To build a mass pool of ICT literate manpower using the NYSC, NDE, and Other platforms as a train-the-trainer scheme for capacity building.

Benefits of ICT in Higher Education for capacity Building

There is no gainsaying that the utilization of ICT has made a significant contribution and improvements in the quality of education:

- The use of ICT promotes a favourable learning environment
- Quality and availability of educational technology in schools, along with the technological literacy of teachers and students have increased significantly in the past decade
- Through ICT, Schools can bring about improvements on the quality of education at a lesser lost.
- ICT integration, especially computers helps in recording and processing Students information
- Educational technology enables teachers to perform their teaching jobs faster and timely exchange of information between Students and parents
- ICTs allow students to monitor and manage their learning without direct intervention
- ICTs enhance critical thinking, and creativity, help in solving Simulated real-world problems, work collaboratively, engage in ethical decision-making.
- ICTs use in education has made it possible to find solution for complex real-world problems.
- ICTs use in education enhances or facilitates mobile coming and inclusive education
- The use of ICT in the education sector enhances the effectiveness of education and also aids literacy movements
- ICT integration enhances the modes of communication especially during online distance leaning where most communication is written.
- ICT in education improves engagement and knowledge retention
- ICTs enable easy access to electronic information resources, such as electronic periodicals (e-journals, e-magazines and e-newspapers).
- Teachers job performance is fully enhanced with the use of ICTs
- ICTs provide independent learning platforms for students
- ICTs favours introverted students

- ICT in education will give teachers and students free and unlimited access to digital libraries.

Challenges of ICTs in Capacity Building

As a developing nation, Nigeria is currently facing a lot of problems using the ICT in the higher educational System in Nigeria. Such challenges which inhibit capacity building include;

1. Low level of ICTs Literacy among teachers:

One of the higher educational challenges that affect capacity building is the low level of ICT literacy among teachers. Most teachers are not ICTs literate and as a result, they are not able to reflect any aspect of ICTs in their teaching.

2. Low level of funding:

Funding is important for making Nigeria higher educational system ICTs compliant, Adejon and Ozoji (2021) are of the view that the present level of funding cannot take care of the procurement of the ICTs facilities, provision of conducive classroom accommodation for the facilities, provision of air-conditioners which is necessary to keep the computer laboratory in dust free condition and an ambient to capacity building in the educational system. In fact a close examination at the strength of the nation's economy to sustain computer current level & funding of education in Nigeria especially the decreasing budgetary allocation to the education sector goes a long way to show much about how far the implementation may go if the curriculum is to be successfully implemented.

3. Dearth of technical Staff:

There is also acute shortage of ICTs teachers as technical staff. Few universities in Nigeria that currently produce qualified professionals in these courses are grossly inadequate to meet the manpower demand of the nation in ICTs. This Situation therefore poses serious obstacles to the effective utilization of these ICTs facilities (Salau, 2023).

4. Poor State of ICT Infrastructures:

The ability to use ICTs tools in schools implies that certain basic infrastructures must be available. Specifically, certain ICTs facilities like computers, internet, constant electricity supply need to be put in place. It is however, deplorable fact that there is always the problem of incessant power outages among the higher institutions. There are also non-existent of effective generators in schools to supplement the erratic and unreliable power supply by the Power Holding Company. This level delay offers little or no stimulus to the implementation of ICTs polices hence, act as a challenge to ICTs in capacity building. As Such, this is a major problem in the use of ICTs in our higher educational system. Confirming this, the FGN (2005:73) stated that the following issues represent challenges to improving information and communication services.

- High cost of private provision of powers.
- Lack of local manufacture and maintenance of information and telecommunication equipment and the lack of local software development capacity
- Absence of effective and efficient postal communication
- inadequate human capacity and indigenous technical know-how.

Prospects of ICTs in Education and Capacity Building

Some prospects of ICTs in education and capacity building especially derivable from internet connectivity and use are:

1. Removal of distant related barriers that have hitter to traditionally delimit the provision of educational services worldwide.
2. Electronic publishing (e-publishing)
3. Creates avenue to launch/carryout a research work with interested individuals or groups.
4. Improved communication with various stakeholders in education Sector
5. Wide and range of opportunities to both the Learned and learners, especially in access to and use of information.
6. It allows teachers and students to engage in real-time online conversation.
7. Allows the ownership of both hand/soft copies of information document.
8. Capacity to reach large number of people Simultaneously with conversation not being influenced by physical contact.

Conclusion

The adoption and use of ICTs in schools have a positive impact in teaching, learning, and research. Despite the roles ICTs can play in education, schools in Nigeria have yet to extensively adopt them for teaching and learning. Efforts geared towards integration of ICT into the school system, have not had much impact. Problems such as poor policy and project implementation strategies and poor information infrastructure militate against these efforts.

Recommendations

In order to ensure that ICTs are widely adopted and used for capacity building in Nigeria higher educational system, the following efforts should be taken;

1. Government and other agencies must muster the will power to upgrade ICT facilities for teaching and learning in the higher institutions. This will help improve ICT for capacity building in the institutions and make them comparable to other institutions around the world.
2. The government and institutions of higher learning need to implement the existing prospects to its letters. This will help fast-track the use of ICT for capacity building among institutions of learning.
3. The funding agencies for ICT development such as the Government, NGOs and International organizations may need to monitor the release of fund to ensure that they are used for the purpose they are meant for. Perhaps it might be necessary to establish a regulatory and monitoring agency for all ICT centres and institutions of higher learning.
4. There is equally need for the government or the relevant ministry to streamline ICT package and programmes in all higher institutions of learning. This will create room for uniformity in the programnes offered.
5. Other areas that require attention include adequate ICT facilities in the universities, recruitment of qualified manpower for ICT training etc.

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