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DIGITALIZATION OF HIGHER EDUCATION IN NIGERIA: PROBLEMS AND PROPECTS

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ABSTRACT

This paper examined the concepts of digitalization and higher education in Nigeria. The study was anchored on the theory of digitalization by Houghes, (1998), It x-rayed the relationship between digitalization and higher education as well as the role of digitalization in the promotion of higher education in Nigeria. The paper also highlighted the bottlenecks militated against the attainment of digitalization in the growth and development of higher education in Nigeria. The study recommended among others that the government should address the problem of power generation and distribution in Nigeria. The private individuals and higher institutions should invest heavily in the provision of digital infrastructural facilities in all the higher institutions to aid accessibility and usability.The universities, polytechnics and monotechnics should embark on research to improve digital education in Nigeria.

Keywords: Digitalization, Education, Higher Education

Introduction

Digitalization is the process of converting analog information into a digital format. In this format, information is organized into discrete units of data called bits that can be separately addressed usually in multiple bit groups called bytes. Rouse (2023) defined digitalization as the process of converting physical source material into digital source material. The good of digitalization is to preserve and protect analog information and make it possible for computing devices to work with it.

Digitalization in education is a variety of approaches for transitioning conventional modes of teaching and learning into the virtual world, such as online courses, online assessments, and web-seminars/conferences or workshops, among other things using electronic platforms (Bovisenkor, Gukalenko & Pustovoitov, 2021). To Daniel (2020) and Ray (2020) digitalization involves electronic platforms which include, but are not limited to Zoom, What's App, Goggle meets, Goggle Hangouts, Skype, Microsoft Teams, or Face Time, where learning may be done synchronously or asynchronously online. Through digitalization, education institutions are better engaging students, streamlining records work, and improving student outcomes.

Bejinaru (2019) viewed digitalization as the conversion of text, pictures, video and music into digital format using technologies such as Laptop, computer, the internet, mobile devices, a scanner, a digital camera, a projector, and a printer among others, that may be played by a computer. Digitalization also known as technology enhanced learning or e-

learning is defined as the creative use of digital resources and innovations during learning. It can also be defined as classrooms that allow teachers to engage interactive learning environments in the form of hybrid or fully outline.

Concept of Higher Education

Higher education is the education after secondary school. It is an education designed to produce manpower for the social, economic and technological development of the country. Higher education according to National Policy on Education (FGN, 2023) is of the National education system which is given of Universities, Polytechnics and Colleges of Technology including courses as are given by the Colleges of Education, Advanced Teachers, Training College s, correspondence college and such other institutions as may be allied to them. The objectives of the Universities in Nigeria higher education, including professional education has the following aims; the acquisition, development and inculcation of the proper value orientation for the survival of the individual and societies; the development of the intellectual capacities of individuals to understand and appreciate environment, the acquisition of both physical intellectual skills which will enable individuals develop into useful members of the society; the acquisition of an overview of the local and external environments (FGN, 2014).

In view of the importance of higher education and its role in National development, there is need to digitalize higher education in Nigeria so as to put Nigeria universities at par with those around the globe.

Ahaotu and Ogunode (2011) observed that higher education in Nigeria is under the supervision of commissions set up by law and which operate as parastatals of the Federal Ministry of Education. For instance universities are supervised by the National Universities Commission (NUC) while Colleges of education are supervised by the National Commission for College of Education (NCCE). The National Board for Technical Education (NBTE) oversees polytechnic education. These commissions are responsible for policy decisions affecting higher institutions under their supervision, maintenance of standards through a system of periodic accreditation of courses, distribution and monitoring of members of governing councils and the day-to-day running of the institutions.

Relationship between digitalization and higher education

The relationship between increasing technology and education at all levels is crucial for enhancing the effectiveness of educational delivery. Technology in education plays a significant role in bridging the gap between educators and students, reshaping traditional learning methods and creating a more engaging learning experience. Studies (Ahaotu & Ogonode 2021, Rouse, 2023) have shown a correlation between the digitalization of education and the adoption of information and communication technology (ICT) and improvements in learning achieved through creative endeavours changes in student efficiency as a direct result of the effective utilization of resources. Digital learning allows students to access more knowledge and ensure that the content is customizable and tailored to their specific requirement. The ability to assist each

student in studying at their speed and on their route is the most crucial advantage of digital learning. Information technology has emerged to spread shared knowledge and is a primary driving force behind education reforms.

The introduction of new technology assisted learning tools such as mobile devices, smart phones, moocs, tablets, laptops, simulations, dynamic visualizations and virtual laboratories have altered education in schools and institutions. The Internet of Things (IOT) is proven to be one of the most effective methods of educating young brains. It is also a robust mechanism for integrating a world-class learning experience for everybody (Bhargava & Keengive, 2014, Dreimane & Upemieke 2022, Rogers, 2000). Educational technology businesses are continually attempting to create novel solutions to expand access to education for individuals who cannot obtain adequate educational facilities.

The globalization of education has already necessitated the application of digital technologies. Online platforms are available for conducting classes, sharing resources, doing the assessment and managing the day to day activities of academic institutions.

However the use of these platforms was proactive. For instance the Covid-19 pandemic has forced the institutes to adopt the online teaching mode otherwise known as the new Normal to sustain the education system.

Digital technologies assist in developing abilities that will require students professional performance, such as problem-solving, thinking structure creation and process comprehension. They are also preparing for a more unpredictable and changing future in which technology will play a critical role. Students acquired qualities and abilities will be essential to their professional success. Education resources and digital tools help to improve the classroom atmosphere and make the teaching and learning process more compelling.

Furthermore, they gave each educational institution greater flexibility and customization of curriculum based on the requirements of each student. Children are more engaged in learning if technology is used in the classroom. (Araujo, Knijnik & Ovens, 2021) This is because youngsters nowadays are pretty accustomed to the usage of electronic gadgets and incorporating them into schooling would undoubtedly assist in piquing their interest and enhancing their involvement levels. Using computers and other devices in conjunction with digital tools allow students to play a more proactive role and be at the centre of the process and can approve learning efficiency. Using the myriads of digital resources, learners may download the required information or upload the required information or upload their content. Digital technologies make it easy to use classroom tactics like gamifications or approaches like flipped classrooms that optimize learning. Learning landscapes have evolved as didactic tools that mix several techniques and enables distinct itineraries to be presented to each student. Technology makes the instruction more inspiring and meaningful.

With the above discussion, it is a fact that there is nexus between digitalization and education since the present education system cannot stand without technological devices. Digitalization has revolutionalised education and makes learning flexible and easy. Digital technologies are a powerful instrument that can help improve education in various ways, such as making it easier for instructions to generate instructional materials and providing new methods for people to learn and collaborate.

The RAT Theory of Digitalization (Houghes, 1998)

The RAT model of digitalization was developed by Dr Joan Houghes in 1998. It aimed to study how teachers developed and integrate technology for teaching and learning. RAT is an acronym which represents Replacement, Amplification and Transformation. It is a frame work that can be used by teachers to develop lesson plans in their classrooms that allows the ipads, laptops and other forms of technology. For use in research, the RAT model typically requires observations and conversations with teachers to support robust assessment. The RAT model emphasized how technology impact tasks and activities into replacement, amplification and transformation.

In RAT, transformative use of technology is not synonymous with the use of revolutionary technologies of the use of the later technology tools and trends. Additionally, digitalization in education may not be possible in all societies particularly primitive societies where facilities may not be readily available. It also requires the use of experts in the area of science and technology which are very scarce in our environment. Nonetheless, the digitalization in education as advocated by the RAT model is a welcome development that tries to consider how the integration of technology in the classrooms can serve both students and teachers. Although RAT tend to ignore the dynamic nature of educational practices, its advantages is enormous and broad. For instance it creates the use of digital resources and innovations during learning. It has also made teaching and learning very easy and simple.

Benefits of Digitalization of Higher Education

The digitalization of Higher Education cannot be overstressed. It has a lot of benefits to the growth and development of higher education in Nigeria and elsewhere. The benefits are listed and discussed herein.

1. **Increases teacher ability to teach**
   It gives teachers the ability to offer tailored learning plans and curricula to a single student. In the past, instructional strategies and methodologies were more or less designed with whole classes in mind.
2. **Accessibility:** Digital learning breaks down geographical barriers, allowing individuals to access education resources from anywhere with an internet connection.
3. **Flexibility:** Through digitalization of education, learners can customize their learning experience to fit their schedules, enabling them to balance work, family and education more effectively.
4. **Creativity:** Digital Learning foster creativity and give students sense of

success, encouraging additional learning by thinking outside traditional techniques.

5. **Assessment and Feedback:** Digital Learning platforms facilitate real-time assessment and feedback, providing immediate insight into students' comprehension and progress.
6. **Breath of Information:** Digital Learning taps into the easy access to information and helps students to use it effectively. A good digital learning strategy also teaches students how to be objective when searching the internet for information.
7. **More Engaging Lessons:** Digital Learning offers a large range of delivery methods for learning Imagery, audio and videos content can all be integrated seamlessly into a lesson. Some teachers are even able to find software that enhances the topic they are teaching in the form of games. All these help to make learning more fun, which in turn will raise the retention of the content taught in the lesson.
8. **Develops Accountability:** Digital Learning helps students to foster ownership over their education. If they do not know why the sky is blues, they have all the technology and resources to find it out themselves.
9. **Recorded Content:** Many who have experienced online lesson will say how valuable it is that some of the lessons are recorded. It's easy to understand why. If you miss something in the lesson, you can just rewind and catch that point later. It also enables learners to do additional study in their own time to catch up.
10. **Cloud-Based Learning Opportunities:**
    The cloud offers students and teachers the chance to select from virtually anywhere. They can use these types of applications while sitting in a lecture hall in person, from home, or even halfway around the world. They enable the streaming of lectures, thus making online classes possible and attractive.
11. **Virtual Reality:** Virtual Reality has become an increasingly important components of technology across all sectors. Although it was initially used as a form of entertainment, it has also attracted attention for its potential and in training sequences or even shopping. In the world of education, where reality can provide students with the chance to experience the material they learn before they actually move into real world applications.
12. **Big Data:** Big data refers to the growing technologies capabilities to track large amounts of data and interpret it with the assistance of algorithm to find patterns and helpful information. Schools have long collected a wealth of information about their students, including their demographics, grade, and classes. Big data provides them with the opportunity to take their information much further and use it to better understand student trends and successes. This includes the convergence of a variety of different sources of data.

The digitalization of education has brought fundamental changes to the entire educational sector. The benefits of digitalization in the education institutions

have helped in the expansion and accessibility of education services.

Ding, (2000) highlighted the advantages of digitalization as follows:

1. Digitalization means no new buildings are required; improvement in information sharing and redundancy of collection reduced.
2. Digitalization leads to the development of internet in digitalized based institutions.
3. Digital materials can be transmitted, sorted and retrieved easily and quickly.
4. It is cheaper to access electronic information than its counterpart when sorting files in an electronic device with compatible facilities and equipment.
5. Digital texts can be linked, made interactively, and improves the retrieval of none information.

Challenges of digitalization of Higher Education in Nigeria

The Nigeria higher institutions have embraced digitalization though not without challenges. Some of these challenges are indentified and discussed hereinunder. They include; Poor funding, shortage of digital facilities, poor internet connection, higher cost of digital facilities, poor digitals skills and knowledge and shortage of digital experts, poor implementation of problem, resistance to change and corruption among others.

Poor Funding

Digitalization requires fund with which to purchase the required gadgets like computer, laptops, television, smart phone, electronic smart boards, virtual laboratories among others. Unfortunately our higher institutions are not adequately funded as expected by the governments and properties of higher education. This development makes it difficult for higher institutions to fully digitalize education in Nigeria.

Shortage of digital facilities

Most higher institutions in Nigeria lack digital facilities such as visual classrooms, smart phones, tablets, et.

The application of digitalized education cannot work without the digital facilities being in existent.

Power Problem

The need for power in the digital education cannot be overstressed. The power supply in Nigeria especially electricity is poor. The epileptic power supply disrupts teaching and learning practicals. The classroom instructions and workshops are often disrupted by lack of power supply. This often affects the attainment of the goals set up by teachers and students to achieve.

Poor Internet Connection

There is poor internet connection experienced in Nigeria due to constant internet failure by the same providers such as MTN, Airtel, V-mobile, Glo etc. Teachers and students find it difficult to engage in watssap or conference teaching without experiencing poor internet connection or failure. This negatively affects effective teaching and learning.

High Cost of Digital Facilities

Digitalization requires the use of facilities most of which are not readily available as at when needed; Mostly and when these facilities are available; the costs are very high or expensive. It is not every student

or teacher in Nigeria that can afford to purchase android phone or buy computer so as to participate in e-learning. The costs of digital facilities are so high and this limits its use by higher institutions in Nigeria.

Shortage of Digital Experts

It is unfortunate that most teachers in Nigeria who should champion digitalization of education lack the knowledge and required skills of educational technology. In a nut-shell such teachers are not computer literate and therefore cannot impact digital education on their students. Nobody can give what he does not have to another.

Resistance to change

A lot of people often find it difficult to accept changes whenever it is introduced. Although digitalization of education is very useful but some people find it difficult to adjust to the new situation, they often argue that as was before so shall it remain forever. This is very common in traditional societies like Nigeria where people are guided by their religions and cultural belief system that they find it difficult to accept changes. Again, the level of education in Nigeria is poor and this contributes to her resistance to genuine changes in technological innovations and changes.

Corruption

In Nigeria, corruption has become a canker worm that has eaten deep into the fabrics of our society. It is unfortunate that individuals entrusted with the implementation of the digitalization of education will often divert fund meant for digital education into their private pockets. Fund meant for education facilities are often mismanaged by some people in authorities. This ugly development affects the full implementation of technology education.

Conclusion

This paper examined the benefits of digitalization of higher education and the factors that have hampered the digitalization programme in the higher education in Nigeria. The paper concluded that poor funding, shortage of digital facilities, power problem, poor internet connection, higher cost of digital facilities, poor digital skills and knowledge and shortage of digital experts, poor implementation problem, resistance to change and corruption are the major problems that have militated against digitalization of higher education in Nigeria. Based on these problems identified, the paper suggested the following steps:

1. The government should increase the funding of higher education in Nigeria and more priorities should be given to the development of digital education;
2. The governments should provide adequate digital infrastructure facilities in all the Basic schools to aid accessibility and usability. Innovation Hubs /clusters should be set up in areas where they do not exist to make room for the laps that occur in some areas in Nigeria. The existing hubs should also partner with civil society groups to promote capacity building program on digital education.
3. The governments should address the problems of power generation and distribution across the country by

authorizing private firms to generate their own electricity.

4. The governments should invest more in information communication technology to improve the connectivity level across the country.
5. The governments should subsidize the price of digital facilities for teachers and students. Government should also provide tax incentives/reliefs for telecoms to enable them to reduce costs.
6. The annual budget allocation for Education in Nigeria should be increased substantially. The suggestion by the United Nation is that 10% of every country annual budget should be set aside for education should be implemented; this will enhance the digitalization of higher education in Nigeria.
7. There is need to train teachers in our Universities, Colleges of Education and Polytechnics on the use of digital facilities and skills. This strategy will enhance digital education.

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