BENEFITS AND CHALLENGES OF DIGITALIZATION IN THE MANAGEMENT OF PUBLIC HIGHER INSTITUTIONS IN RIVERS STATE

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Abstract

Digitalization of the management of higher education institutions (HEI) in this era of globalization is essential if higher education institutions want to be relevant, proactive, knowledge- driven and effective in impacting valuable skills to their students and contributing to national development. This paper examined the benefits and challenges of digitalization of management of public higher education institutions in Rivers State. To achieve this, the paper contained an introduction where most of the key words were explained. It went further to examine and explain the major concepts in the study. The approaches/mechanisms of digitalization of higher education institutions; the benefits of digitalization of HEI; the challenges of digitalization of HEI. The scholar concluded the study and suggested that government in collaboration with TETFund and NCC should purchase and distribute enough computers, ICT gadgets, internet facilities and digital equipment to all the public HEI in Rivers State in order to facilitate their digitalization process.

Key Words: *Digitalization, Higher Education Institutions, Management, Benefits and Challenges.*

Introduction

The only thing that is believed to be constant in life is change. We live in a dynamic world where individuals, institutions, local and international agencies work tirelessly to improve on human environment, standard of living, productivity and service delivery. The outcome of these efforts is innovations and new technologies in various ways of doing things for improved service delivery and productivity. In the past most operational services in higher institutions were rendered face to face or by physically moving bulk of printed materials from one office to another. The emergence of information and communication technology (ICT) has brought a lot of innovations and changes in the management of most industries including the education sector. The infusion of ICT in the management of higher education has resulted to the gradual process of changing from our traditional analog system to digital system. The injection of digital information and communication technology in the managerial process of higher institutions in developed countries has resulted in unprecedented institutional efficiency and effectiveness (Otamiri, 2019). Higher educational institutions in Nigeria have adopted the use of computers, internet and digital technology in their management process. A process known as digitalization, which is supported by the National Policy on Information communication and Technology in school education (ICT). Digitalization of education as defined by Akinyemi, Amaechi And Etoh (2022) is a concept adopted to

ensure the innovative incorporation of modern technologies and digital tools to assist in the progress of teaching and learning and to create more room for remote learning. It appears, most higher education institutions in Nigeria currently have capital-intensive digital infrastructure but the acceptance and adoption of these digital resources in managerial functions appears to be very low. According to Otamiri And Seth (2020), managerial offices are equipped with state of the art ICT facilities like 4G wifi, desktop computers, laptops, printing and scanning machines, web conferencing facilities etc in addition to institution-based websites and information and communication technology centres (ICTC), yet the administrative system is predominantly paper-based. Indicating that it is yet to be fully embraced.

Digitalization of higher education if adequately implemented has the potential of transforming the way we teach and learn. Digital technologies such as online learning platforms, educational apps, and multimedia resources have opened up new opportunities for students and educators to access and share knowledge. Digitalization of higher education will not only increase access to higher education but it will also enhance flexibility and improve the quality of higher education in Nigeria. Digitalizing the management of higher education in public higher institutions (PHI) in Rivers State aims at the full integration of computer systems, internet, cloud technology, e-mailing and other components of information and communication technologies in the planning, organization, directing, coordinating and controlling of higher education programmes for effective services and quality education delivery. This paper therefore intends to examine the concept of digitalization, approaches, benefits and challenges of digitalization of higher education in public higher institutions (PHI) in Rivers State.

Concept of Digitalization

Digitalization according to Micheal and Jacob (2017) is the process of converting educational resources from material forms to electronic forms where they can be stored and manipulated by a computer. Otamiri and Seth (2020) see digitalization as the automation of organizational processes to the point that managerial/administrative activities are mainly carried out using online electronic resources and local office information systems. Digitalization is the transfer of data from analogue to digital platform which is considered as a vital driver of innovation in teaching and learning. It could also be viewed as the process of converting manual information or data to a digital format for a more meaningful interpretation.

Digitalization in education as conceptualized by Olatunde- Aiyedun, Eyiolorunse- Aiyedum And Ogunode (2021) is the process of transferring traditional teaching and learning materials such as online learning platforms, educational apps, and multimedia resources, online courses, online assessments and web seminars/ conferences or workshops to electronic model for deployment in the school. Digitalization is conceived by Bejinaru (2019) as the conversion of text, pictures, video and music into digital format utilizing technologies such as laptops, desktops computers, internet, mobile devices, scanners, digital cameras, projectors and printers among others that may be played by a computer. Digitalization has to do with those facilities that aid the conversion of teaching and learning into platforms like online courses, online assessments, and web seminars/conferences or workshops through the use of electronic platforms. Digitalization is the transfer of physical teaching and learning resources into packages or platforms or electronic forms where they can be stored and manipulated by a computer for the implementation of teaching and learning programmes in schools. The wide spread of digitalization which was enhanced by COVID-19 and proliferation of digital communication support system in business organizations and higher education institutions world over. Digitalization of higher education institutions in Nigeria means the automation of virtually most or all administrative services or activities, across higher education institutions in the country. The growth of ICT has impacted higher education institutions' operations with many institutions adopting Learning Management Systems (LMS). LMS is an online platform that integrates various systems providing access to lecturers, students and administrators.

LMS according to Telukdarie And Munsamy (2019) assists students to have access to lecture notes, assignments, virtual classrooms, exam results, and submission of assignments. It also assists lecturers in managing course content, submission of students' assessment marks, tracking of students' progress and attendance. Examples of LMS are MOODLE and BLACKBOARD Software. HEI also adopt research systems

such as ORCID. This provides researchers with unique identification and it also provides a global platform for researchers to interact and share information.

Digitalization of HEI- Approaches/ Mechanisms

The following approaches/mechanisms could be adopted in the digitalization of the management of higher education institutions in Rivers State.

1. Mobile learning – use of mobile devices such as cell phones, tablets etc.

2. Massive Open Online Courses

3. Blogs- Online Journals

4. Game based Learning

5. Gamification – No games are played. It is aimed at promoting students involvement and engagement.

6. Teaching Factor 4.0

   Other approaches include the following:

Official Website: Every HEI is expected to have an official website which is designed to provide functional interface between the school and the global community. The website presents general information about the school as well as important updates in the school.

Local Office Information System (LOIS): This consists of all basic technology components used in various offices for capturing, processing, storing and producing data/information contents in both soft and hard copies. It is the use of computer systems and accessories provided across administrative and academic offices, institutes and centres for capturing, storing, retrieving and sharing data/ information resources within the school (Otamiri, 2019).

Database Management System (DMS): HEI deal with so much information/data which are generated internally and externally. These data/informations are very important to the organization. In order to secure them, HEI have to install DMS and/or subscribe to cloud storage service to capture and store every data concerning students, staff, transactions and programmes.

Human Resource Management System (HRMS): These are special computer systems and programmes designed to capture, store, retrieve, update and analyse data concerning workers in the school. HRMS contains important updates about staff members. For example, latest qualifications, positions, staff performance audit reports, official duty history, and other sensitive history. HRMS is managed from the registrar's office.

Accounting Information System (AIS): These are Computer programmes and platforms with artificial intelligence for capturing the school's financial transactions such as school fees, vouchers, bills, e-transacts etc. they are mostly online based and they make it possible for students to execute e-payments and obtain instant receipts and registration numbers.

Adoption of E-Meetings: This is also known as zoom meeting, virtual meeting or web conferencing. It is a system that, enable people to meet and have real-time interactions virtually which usually incorporates features such as audio, video, chat tools, and application sharing.

Use of e-mail: Digitalization has made it possible for administrative head to predominantly use e-mail in administrative communication. Email platforms such as yahoo mail, google mail, hot mail etc are often used by administrative heads and staff of HEI to send and access messages.

Cloud Computing Practices: Cloud computing according to Saman and Zarandioon (2012) is a computing model in which hardware, platform, infrastructure and software are defined and delivered as a service rather than a product. Cloud computing is emerging as a new computing paradigm which depends on existing ICT infrastructure and tools like the internet, grid computing, web services, virtualization etc to provide an improved, efficient, minimum service cost, and convenient service delivery in HEI.

Computer Assisted Examination System (CAES): These are platforms and networks for conducting computer based aptitude tests and course examinations.

Electronic Academic Data Analytic System: These are computer hardware and software components that enable lecturers and academic results computation committees to capture, upload, analyze, compute and publish students' academic performance accurately and timely.

Turn-it-in Platform: This according to Otamiri (2020) is a cloud based academic integrity enhancing software that assists HEI to test and confirm the quality and originality of intellectual works published by their teaching staff, non-teaching staff and their postgraduate students.

Intranet: This is a customized and secured internal communication network within any higher institution which helps offices to share data/information digitally without physically carrying files up and down.

Campus Free Internet Service System: Some public higher institutions provide free internet services to their staff and students on campus to enable them access online academic information and materials. To enjoy this service, the staff and students need to have the appropriate password to enable them connect to the wifi. Digitalization of higher education institutions is very imperative, essential and unavoidable in this era where the world is seen as a global village. It was found very useful during the COVID-19 era and it served as the medium of salvaging the situation and bridging the academic gap that would have been created by the pandemic. Digitalization of HEI has numerous benefits, some of which are discussed below.

Benefits of digitalization of HEI in Rivers State

Digitalization of HEI comes with enormous benefits. Digital learning allows students to access more knowledge and ensures that the content is customizable and tailored to their specific requirements. The ability to assist each student in studying at their speed and on their route is the most crucial advantage of digital learning. The incorporation of ICT and digital technologies in HEI has played significant roles in uplifting and developing higher institutions in Rivers State. According to Nwakudu, Bema and Asagba (2013) digitalization of HEI enhances linkage and exchange as well as collaboration in HEI. Digitalization helps to upgrade the image of higher institutions internationally, facilitates speedy dissemination of research findings all over the world; makes presentation of conference papers possible from any part of the world; and it enhances admission process/study programmes for local and international students.

In another study by Kaegon And Awah (2013), it was observed that digitalization of HEI aids in the internationalization of higher education. it broadens access for students to programmes that are unavailable in their home countries; and it equally expands academic/research horizon of practicing institutions. ICT and other digital tools play a significant role in the efficient management and administration of higher education institutions. It is relevant in information administration (student administration, staff/personnel administration and general administration), pay roll and financial accounting, inventory management and management of school library. Digitalization of HEI according to Maki (2008) has played a major role in reducing operational inefficiency and improving decision- making in many areas of higher education administration. Digitalization has assumed a colossal impact in management of higher education. all management functions have one or more

aspects of ICT and digital technologies imbedded in them. According to Akuegwu and Uchendu (2016), ICT and digital tools utilization in higher education are beneficial in the dissemination of information, coordination of staff/students activities, management of records, teaching/learning activities, research conducts and management of students' enrolment.

Digitalization of classrooms in higher education institutions allows academics and students to participate in management information system (MIS) which is the process of sourcing, processing, organizing, storing retrieving and sharing of useful information for the purpose of achieving present and future aspirations. According to Cheta (2013) it stimulates the development of intellectual skills and allows teachers to carry out teaching through the help of relevant technologies. Digital materials can be transmitted, sorted and retrieved easily and quickly. Staff and students do not have to travel to libraries that have the hard copies of library resources before they can access and use such materials. According to Pandey and Misra (2014) digitalization of higher education institutions gives opportunity for many people to search rapidly and comprehensively from anywhere at any time. That means that many students can access the same material the same time without any hinderance.

Titus (2018) listed the benefits of digitalization of higher education institutions to include the following:

- **Unlimited Access-** Many people from different parts of the globe have access to any and same information as far as there is internet connection.

- Improved collaboration with other information institutions and centres. Such collaboration enhances their chances to form consortia when they can pull their resources together and get a real bargain of scale to acquire learning software.

- Digitalization encourages improvement in the provision of facilities for information sharing.

- Timely access to information is guaranteed.

- Digitalization of HEI guarantees enhanced searching methods through different search engines and manipulation of information.

- **Cost Effectiveness-** The cost of maintaining a digital learning platform is cheaper than that of a traditional learning method.

- **Higher Capacity-** In the traditional libraries, there are limited storage spaces while digital books have the possibilities to reserve much more information, simply because digital information requires very little physical space to contain them.

The benefits of digitalization of higher education can not be over estimated. It is the bedrock of internationalization of higher education which gives opportunities to higher institutions to boost the revenue generation. Internationalization of HEI gives room for the enrolment of foreign students into their programs, it equally creates opportunities for industries, corporate organizations to collaborate with HEI or consult them for any of their services that they need. These opportunities will boast the revenue generation capacity of HEI.

Challenges of Digitalization of HEI

Digitalization of higher education institutions in Rivers State is confronted with so many issues. Managing education in a digital world involves a lot of things which are not adequately available. The challenges of digitalization of higher education institutions include the following:

1. **Inadequate Funding:** Digitalization of higher institutions require so much money. The equipment needed for full digitalization of higher institutions are very expensive and so many. So it is a capital intensive project.

2. **Inadequate implementation of ICT policies and regulations:** One of the major challenges facing us as a nation is the implementation of our policies. We have iCT policy but this policy is poorly implemented in our educational system. This has left some schools with adequate internet and ICT facilities.

3. **Inadequate power supply:** There is poor power supply in most parts of Nigeria. Some areas do not have power supply at all. Digital tools require adequate power supply to function effectively. According to Sacks and Barak (2010), the current epileptic power supply in the country does not support digital educational administration.

4. **Poor Maintenance Culture:** Digital equipment/tools are fragile. They require careful handling and adequate maintenance. The digital equipment/tools in so many higher institutions are too old, hence equipment failure is very common. Since digital learning and smart classrooms depends so much on gadgets, ICT tools and equipment, which are constantly in use, their failure might be a source of frustration to teachers and students. Most of these digital tools and equipment are hardly maintained, schools keep using them until they are packed up.

5. **Knowledge/Skills Gap:** It has been observed that most school managers lack basic computer skills. They are digital aliens due to long neglect of ICT capacity building. According to David (2013) technological skills gap makes it hard for school managers to adopt digital practices hence the administrative system over the years has remained analogue even when administrative offices are equipped with computers and other digital equipment. It equally appears that most academics in higher education institutions are not ready to utilize digital classrooms in the delivery of instructions due to lack of digital skills.

6. **Inadequate digital facilities:** Internet network signals are poor and in some cases not available at all. This inhibits effective communication and utilization of digital facilities. There is inadequate functional computers (laptops, desk-tops), printers etc.

7. **Resistance to Change:** Most higher education institutions in Nigeria are not yet fully digitalized. School administrators and teachers in these schools according to Otamiri (2020) see their present status of digital incompetency as comfort zones hence they desire to maintain their conservative old ways of doing things.

8. **Data Security and Protection:** Data security and protection is very necessary for effective adoption of digitalization in higher education institutions. The school authorities and the digital service providers must guarantee that information and data are safe and secured, and should not be open to unauthorized individuals.

9. **Insecurity:** Cases of vandalization of ICT centres, accessories and equipment have been recorded in some cases.

10. **Lack of modern infrastructure:** There infrastructural deficit in many higher institutions in Nigeria. The ICT centres in such schools lack modern computers and most of the available ones are corrupted with virus. Without modern infrastructures and facilities, digitalization of higher education institutions will suffer a serious set back.

Conclusion

Digitalization of higher education has added value to our higher education system. Many things like course registration and processing of students admission are now done online. There is so much need for improvement in so many other areas to ensure that most service delivery in higher institutions are digitalized. The management of higher education institutions require full entrenchment and adoption of modern components of ICT gadgets and equipment in the planning, implementation and evaluation of the digitalization project and achievement of higher education goals. The paper therefore concludes that more efforts should be channeled to effective and full digitalization of higher education institutions by government and the management of higher institutions to achieve full digitalization of higher education institutions for academic and global relevance.

Suggestions/ Way Forward

1. Government in collaboration with TETFund and Nigerian Communications Commission (NCC) should purchase and distribute enough computers, ICT gadgets, internet facilities and equipment to all the tertiary institutions in Rivers State in order to facilitate the digitalization of higher education institutions in the state.

2. Capacity building programs on the development of ICT skills among the principal officers, academics and administrative officers in tertiary institutions in Rivers State should be organized periodically to enhance their digital literacy and the utilization of digital tools in the administration of higher education in Rivers State.

3. Government should improve on infrastructural development, power supply and broad band internet connectivity in tertiary institutions in Rivers State to enhance effective utilization of digital facilities and equipment in higher institutions in the state.

4. Principal officers, administrative officers, deans of faculties, heads of departments, lecturers and students should endeavor to imbibe the habit of utilizing digital tools/facilities in communication, instructional delivery, presentation of papers, sending and retrieving documents and all other activities in higher institutions in Rivers State.

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