



DIGITIZING HIGHER EDUCATION MANAGEMENT IN NIGERIA: CHALLENGES AND OPPORTUNITIES

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Abstract

In the rapidly evolving world of technology, higher educational institutions must adapt to the changing landscape to remain relevant and effective. Historically, the traditional method of classroom-based learning has served as the foundation of higher education in Nigeria. However, the digital revolution is driving a shift in pedagogy, demanding a paradigm shift to digital learning. This paper explored the prospects and current state of digital learning in higher education in Nigeria, highlighting the challenges facing the transition to digital education, including poor internet connectivity, high data costs, limited institutional bandwidth, unreliable power supply, and inadequate security for digital facilities. The paper also highlighted the opportunities of digitizing as learning opportunity for lecturers, abundance of information and ease of sharing, information of teaching and improved ability to meet special needs. It was concluded that digitizing higher education management presents a unique set of opportunities and challenges, while online learning platforms, digital assessment tools and improved access to knowledge can greatly enhance the learning experience. The paper suggested that government, policymakers, educators, and institutions must work together to allocate adequate resources, develop digital literacy programme and invest in digital infrastructure.

Keywords: Digitizing, higher education, curriculum development and delivery, administrative processes.

Introduction

Higher education is the education received after post-secondary education. According to the National Policy on Education (FRN, 2013), higher education is defined as the "Post-Secondary Section of the National education system, which is given by Universities, Polytechnics and Colleges of Technology including courses as are given by the Colleges of Education, Advanced Teachers Training colleges, Correspondence Colleges and such Institutions as may be allied to them." In essence, higher education is the level of education that is focused on teaching, research, and community service, and it is critical for the development of a nation. The objectives of higher education in Nigeria, according to the National Policy on Education (FRN, 2013), are diverse and multifaceted, encompassing the development of proper value systems, intellectual capacities, physical and intellectual skills, and knowledge of local and global environments. Higher educational institutions in Nigeria are mandated to pursue these objectives through diverse activities such as teaching, research, knowledge dissemination, service to the community, and preservation of knowledge. The ultimate goal of these objectives is to develop individuals who are not only well-educated but also socially responsible and valuable members of society (Ogunode, & Ndayebom, 2023).

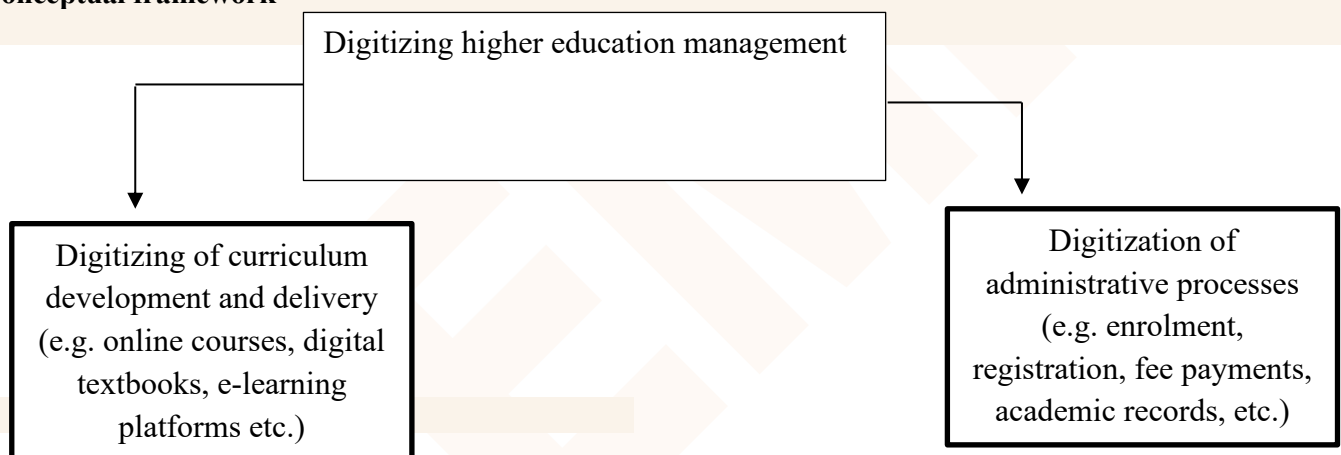
Universities are increasingly faced with the challenges posed by the rapid pace of digitalization. The pervasive use of information technology in various delivery processes, including teaching and learning, administrative processes, curriculum processes, and financial processes, has made it imperative for universities to embrace digitalization to meet the needs of society. As learning activities, resources, and assessments are predominantly conducted online, the incorporation of digital technologies into the delivery processes is essential



for universities to remain effective and relevant in today's digital world (Momenyi, Fonkeng, & Nyenty, 2021). The digital transformation of higher education has had a profound impact on educational institutions worldwide, particularly with the acceleration of digitalization brought on by the COVID-19 pandemic. Digital technologies and information and communication technologies have transformed the learning environment, changing how educators interact with students, share knowledge, and assess learning outcomes. The shift to online learning during the pandemic demonstrated the critical role of technology in sustaining education, and many higher education institutions are now exploring innovative ways to harness digitalization to improve pedagogy, learning outcomes, and accessibility. The policies outlined in the National Policy on Education (NPE), the Digital Protocol Network on National Digital Policy (DPN), and the 2030 Agenda for Sustainable Development of the United Nations, as well as the National Policy On Information and Communication Technology (ICT) in School Education, have paved the way for technology and digital facilities to be leveraged for enhancing knowledge and skills in line with labor market demands. The ICT policy, in particular, aims to achieve full digitization of higher education in Nigeria (Ogunode. & Ndayebom, 2023).

Digitizing higher education in Nigeria has the potential to revolutionize the system, making teaching, research, and community service more efficient and faster. However, despite the policies and programs designed to facilitate digital integration, the digitalization program of higher education in Nigeria faces several challenges. These challenges hamper the successful digitization of higher education in Nigeria and need to be addressed in order to ensure the effective implementation of digitalization initiatives.

Conceptual framework



Source: Self developed

Digitizing higher education management

Digitizing higher education refers to the integration of digital technologies into educational processes and practices, such as teaching, learning, assessment, and administration (Lampton, S. R., Miller, M. H., & Powers, K. (2020). The digitization of higher education involves the adoption of digital tools and platforms, such as online courses, e-books, learning management systems, and online grading systems, to enhance student engagement, increase access to education, and improve learning outcomes. However, the process of digitizing higher education is complex and multifaceted, involving various stakeholders, including administrators, faculty, and students, and requires the implementation of effective policies, resources, and strategies.

Digital learning, also referred to as e-learning, is a broad term encompassing various instructional methods that leverage technology to enhance student learning. As Usunomena (2020) explains, digital learning encompasses a wide range of platforms, such as web browsers, intranet, internet, CD-ROM/DVD, and multimedia platforms. This approach enables learners to access educational resources anytime and anywhere, allowing for a more flexible and personalized learning experience. As such, digital learning fosters lifelong learning by breaking down traditional boundaries of time and place, empowering learners to continue their education beyond the confines of traditional educational settings.

Balogun (2020) defines digital learning as the utilization of computer technology and other modern tools for teaching, learning, and assessment. According to Usunomena (2020), digital learning facilities encompass a wide range of digital resources, including computers, flash drives, printers/scanners, memory cards, hard drives,



audio and video tapes, e-book readers, pod casting, YouTube, Wi-Fi, projectors, Smart Boards, virtual classrooms, internet facilities, and digital phones. These technological resources enable learners to access educational resources, engage with learning materials, and communicate with teachers and peers, effectively enhancing the teaching and learning process. Digitalization, in the context of education, is the process of converting physical teaching and learning resources into digital formats that can be stored, managed, and manipulated by a computer. This process involves transforming traditional teaching and learning materials, such as textbooks, lecture notes, and teaching aids, into digital forms that can be used to support and enhance the implementation of educational programs in schools.

Higher education is a labor intensive industry, which plays a vital role in developing the human capital necessary for the success of a nation, information and communication technology (ICT) has been recognized as a potent means of enhancing efficiency and effectiveness, as it has in other sectors of the economy. According to Momenyi; Fonkeng and Nyenty (2021), developing an efficient organization is simpler than creating an effective one. In the context of higher education institutions, two crucial questions arise: what should universities do, and how should they be managed to be most effective? One possible solution to these questions is the digitalization of higher education management processes, which can contribute to sustaining effective higher education institutions and delivery systems. Higher education involves various stakeholders, such as the government, industry, professional bodies, staff, and students, each with its own perception of value in higher education. Despite these differing perspectives, the digitalization of higher education should be a priority for all stakeholders, as it has the potential to enhance the quality and effectiveness of the higher education system.

Digitizing of curriculum development and delivery

Digitizing curriculum development and delivery has become an increasingly prevalent trend in higher education, driven by technological advancements and the increasing demand for flexible learning options. Digitizing curriculum development and delivery is the process of using digital technologies to design, develop, deliver, and assess learning experiences in a higher education setting. The advent of online courses in higher education is a gradual process, as indicated by a study conducted by the National Center for Educational Statistics (NCES) in 2008. The study found that the most significant factors influencing higher education institutions to offer online courses were the need to accommodate students' demands for flexible schedules (68%), providing access to college for students who would otherwise be unable to attend (67%), offering a broader range of courses (46%), and increasing student enrollment (45%) (Parsad, Lewis, & Tice, 2008).

Public universities in Nigeria have yet to fully embrace the digitalization of curriculum processes and online courses, which are lacking in their current educational offerings. The adoption of digital technologies in higher education has been slow, despite the numerous benefits it can bring to teaching, learning, and administration. For instance, Rivers State University which is one of the state Universities in Nigeria offer distance education programme in the faculty of education. However, lectures are not done online rather is face to face in this distance education programme.

The rapid growth of the Internet and the World Wide Web (WWW) has revolutionized education, leading to numerous benefits. Digitalization of university curriculum processes for academic programs offers potential opportunities for higher education institutions to expand their reach, engage with new markets, and cater to adult learners who require flexibility to balance their work, study, and family responsibilities. The diverse range of technology advancements utilized by universities' online programs can enhance student-instructor and student-to-student interactions (Momenyi, Fonkeng, & Nyenty 2021)). The pedagogical benefits of online learning are well-known, but there are also several practical advantages. Offering degree programs online can save students time and money as they can access and print handouts and readings online as needed (Jang, 2020). The cost savings for students are significant, as they no longer need to purchase expensive textbooks or other printed materials. This is a key benefit of online learning, particularly for adult learners who often have limited time and resources.

Digitizing of administrative processes

The increasing reliance on technology in higher education has led to the widespread adoption of digital systems for administrative tasks, which are often managed by generalists across various university units (Gawthrop & Oblinger, 2008). Digitalization is not simply about purchasing equipment and software; it encompasses a wider organizational change that affects service delivery, processes, and task execution. It is difficult to envision higher education logistics, such as timetabling courses and student administration, without digital support in today's world. These developments have facilitated the improvement of student services in



higher education institutions. The digitizing of education logistics support processes has enabled higher education institutions to streamline their operations, allowing students to access information about study progress, campus resources, examination registration, course enrollment, work placements, and final projects from any device at any time (Gawthrop & Oblinger, 2008). The increasing availability of digital functionalities has improved the efficiency of higher education institutions, enabling them to offer more effective support services to their students. Computers can be extensively applied for educational administration, providing a range of benefits and streamlining various processes. These include:

1. **Automated data management:** Computerized data management systems can improve the efficiency and accuracy of administrative tasks, such as pay roll and financial accounting student registration and data, inventory management, personnel records maintenance, library system, attendance tracking, and grading.
2. **Communication and collaboration:** Computer systems can facilitate communication and collaboration among students, teachers, and administrators through email, messaging platforms, and online forums.
3. **Resource management:** Computers can be used to manage educational resources, such as classrooms, libraries, and laboratories, leading to better utilization of resources (Blaise, & Rajagopalan, 2020).

As Hossein (2008) affirms, Information and Communication Technology (ICT) or digitization provides a plethora of facilities and opportunities to educational administrators in performing their roles effectively. Furthermore, the authors cite various studies highlighting the improved managerial effectiveness and efficiency in higher education administration through the utilization of digital technologies. These technologies facilitate efficient management of data, effective communication, and optimal resource utilization, enhancing the overall efficiency and effectiveness of higher education administration.

Review of related literature

There are different studies that have been carried out or written by educational scholars to explain digitization of higher education management in Nigeria. Ogunode and Ndayebom (2023) wrote a paper to discuss the various problems militating against the digitalization of higher education in Nigeria. This study relied on secondary data from both print and online sources, with content analysis used as the primary research methodology. The findings of the study revealed that inadequate funding, poor digital infrastructure, unstable power supply, unreliable internet coverage, high costs associated with digital facilities, lack of skilled digital personnel, poor digital skills among both faculty and students, resistance to change, and lack of self-control were all factors hampering the digitization of higher education in Nigeria. The paper recommends an increase in the funding of higher education with a specific emphasis on digital education development in all institutions of higher learning in the country to address these challenges.

Also, Momenyi; Fonkeng and Nyenty (2021) carried out a research on the digitalization of higher education delivery processes and the effectiveness of State University in Cameroon. The purpose of the study was aimed at investigating the effect of the digitalization of higher education delivery processes on the effectiveness of states Universities. The study was guided by two objectives which are to: investigate the extent to which digitalization of administrative processes affect the effectiveness of State Universities, and to find out to what extent does digitalization of curriculum processes affects the effectiveness of State Universities. The study was equally guided by two hypotheses that stated that digitalization of administrative processes, and digitalization of curriculum processes significantly affects the effectiveness of state Universities in Cameroon. The survey research design using a triangulation approach was adopted for the study. The population constituted of all academic staff and administrators of the 8 states universities in Cameroon. A total of 2718 academic staff in four of the state Universities constituted the accessible population of the study. Sample size constituted of 371 academic staff and 24 administrators. The purposive, convenient and proportionate sampling techniques were adopted for the study. Questionnaire and interview guides are the instruments adopted for the study. The quantitative data were analysed using SPSS version 25 with the aid of descriptive and inferential statistics while the qualitative data were analysed thematically. The findings showed that the digitalization of administrative process ($R= 0.553^{**}$, $P= 0.000$, far and digitalization of curriculum processes ($R= 0.384^{**}$, $P= 0.000$, far less than 0.05) have a very significant and positive relationship with the effectiveness of State Universities. In conclusion, it was observed that there is a positive link between digitalization of higher education delivery processes and the effectiveness of state Universities in Cameroon. Based on this, it was generally recommended state Universities should digitalize their delivery processes to enhance the effectiveness of states Universities.



Digitizing higher education management in Nigeria offers significant opportunities for streamlining processes, improving efficiency, and enhancing the overall effectiveness of universities. However, it also presents challenges, including inadequate funding, limited digital infrastructure, insufficient digital expertise, resistance to change, and lack of support for digital initiatives. Nevertheless, digitization has the potential to revolutionize higher education management in Nigeria by improving access to educational resources, fostering collaboration among institutions, and creating new opportunities for innovation and creativity.

Challenges of digitizing higher education management in Nigeria

Despite the promising potential of digital learning, many higher education institutions in Nigeria face several barriers to fully realizing its benefits. These challenges according to Idowu (2019) include, but are not limited to, the following:

1. **Inadequate infrastructure and digital facilities:** The Guardian (2022) cites data from the A4AI survey, which found that only 68.7% of the Nigerian population owns a personal computer (PC) in any form, including desktop, laptop, or tablet devices. This finding underscores the need for adequate digital infrastructure in higher education institutions in Nigeria, as the development of digital education is largely dependent on the availability of such facilities. To support and accelerate the digitalization process, universities must invest in adequate digital facilities and resources, which will facilitate the seamless integration of digital technology into their educational systems.
2. **Digital literacy:** Many educators and students in Nigeria lack the necessary digital literacy skills to effectively utilize digital learning tools and platforms. Haruna (2018) noted that many higher education institutions lack trained personnel with the necessary skills to operate software, manage operating systems, facilitate internet access, and administer networks. Pedagogical training and workshops are essential for lecturers to develop the skills required for effective online teaching, while students need to be trained in the use of digital facilities and platforms for successful online learning. Without sufficient trained personnel and pedagogical support, higher education institutions are limited in their capacity to fully utilize the potential of digital education.
3. **Poor funding of digital education:** The underfunding of digital education in Nigeria's higher education system has presented a significant challenge to the advancement of digital education initiatives. Dada (2022) pointed out that inadequate financing and allocation of resources for digital technology in universities have resulted in a deficiency in digital facilities, equipment, and materials. This underinvestment has hindered the development of digital education, thereby limiting the potential benefits it can bring to the sector. Funding according to Ogunode and Ndayebom (2023) assert that adequate funding is a critical element in education for reducing operational costs, paying teacher salaries, allowances, and pensions, and purchasing essential teaching and learning equipment such as textbooks, laboratories, multimedia, and computer equipment. Since government education spending is largely dependent on federal account allocation, educational objectives are vulnerable to national resource mobilization and expenditure management challenges. Therefore, underfunding of digital education in the sector is not surprising, as it is impacted by broader economic and policy issues. According to Ogunode (2020), the low annual allocation for university administration and management in Nigeria has stifled the development of infrastructure, including information and communication technology (ICT) facilities. Many university departments and offices lack adequate computers and laptops, leading to a shortage of equipment for non-academic staff. Consequently, some non-academic staff members are forced to wait for their colleagues to finish using the limited available computers before they can complete their work. This underfunding of universities has prevented them from providing the necessary information technologies to meet the information needs of their academic and non-academic staff.
4. **Unstable power supply:** According to Akintunde; Abdullahi. And Umar (2019), the inadequate power supply distribution across Nigeria has significantly hindered digitalization efforts in higher institutions. The poor power generation and distribution in the country has had a detrimental effect on many higher education institutions, especially those located in communities with unreliable or insufficient electricity. This chronic power problem has hampered the adoption and effective use of digital technologies and tools, negatively impacting teaching, learning, and administrative processes in Nigerian universities. The energy problem is a major challenge in Africa and especially in Nigeria. A 2022 report by Thisday highlighted the alarming electricity access gap in West Africa, particularly in Nigeria. As cited in the report, only 42% of the total population and 8% of rural residents in West Africa have access to electricity,



with only three countries on track to provide access to electricity by 2030. The World Bank warns that at this current pace, 263 million people in the region will remain without electricity in a decade. Additionally, the 2022 Energy Progress Report by Tracking SDG 7 revealed that Nigeria has the lowest electricity access globally, with a staggering 92 million people lacking access to power. The problem of energy in Nigeria has affected the development of digital education at all levels.

5. Poor security arrangement and poor maintenance culture: Oguiche (2018) has observed that while some higher institutions may possess digital facilities, the infrastructure is often poorly maintained and susceptible to vandalism. In a culture where maintenance of infrastructure is not given adequate priority, ICT labs in universities are not immune to neglect and vandalism. This trend is reflected in the poor maintenance of other infrastructural facilities in Nigeria. Therefore, despite the availability of digital resources in some higher institutions, the lack of proper maintenance and security measures can hinder their effective utilization and impact.
6. Poor internet coverage: As reported by The Guardian (2022), only 12.1% of the Nigerian population has access to "meaningful connectivity" or high-quality Internet services, a situation that poses significant challenges for digitalization of educational institutions. This finding is based on extensive research by the Alliance for Affordable Internet (A4AI), which estimated that there is an 81% meaningful connectivity gap in Nigeria, with only 6.6% of the rural population and 16.4% of the urban population enjoying reliable Internet service. A4AI's conception of "meaningful connectivity" implies not only access to Internet services, but also high-quality and reliable access that enables individuals and institutions to benefit from digital opportunities. Unfortunately, many communities and cities in Nigeria continue to face inadequate access to good quality Internet services, hindering higher education institutions from fully embracing digital education. This limitation of Internet connectivity has prevented these institutions from harnessing the full potential of digital services, which could improve the efficiency and effectiveness of educational processes.

Opportunities of digitizing higher education management in Nigeria

1. Learning opportunity to lecturers: According to research, digital learning has been found to enhance the educational opportunities for both lecturers and students (Smith, 2014). The integration of technology in conjunction with traditional textbooks enhances the capabilities of educators, enabling them to perform their roles more efficiently and effectively. By providing graduates with digital skills, educational institutions can address the skill gap in the job market, leading to improved employability.
2. Abundance of information and ease of sharing: Sudeshina (2020) asserts that the internet has become a vast repository of knowledge, offering a wealth of information that can be accessed and used with ease. The digital medium allows for convenient content updates, ensuring the relevance and accuracy of educational materials. Digital learning tools also facilitate information sharing, fostering a connected learning ecosystem that promotes collaboration and ultimately enhances learning outcomes. If leveraged effectively, this connected learning ecosystem can significantly improve the overall learning experience and develop important collaboration skills among students.
3. Transformation of teaching: The integration of digital technologies in higher education can revolutionize the teaching-learning process, leading to increased access to education. Online learning platforms, for instance, enable students worldwide to access educational resources from anywhere. This convenience is particularly valuable for students who may face various constraints, such as financial, geographical, or personal factors, that prevent them from attending traditional brick-and-mortar institutions. Furthermore, online learning offers students the flexibility to learn at their own pace and on their schedule, empowering them to balance their educational goals with their other commitments (Panji o'g'li (2023).
4. Digital Transformation of Assessment: The introduction of digital assessment in online education has brought forth a range of advantages. Chief among these benefits is the impartiality and fairness of automated grading, as computerized evaluation and correction systems leave no room for personal biases or subjective interpretations of answers. Additionally, digital testing provides a comfortable alternative for students suffering from test anxiety and those with busy schedules, allowing them to take assessments in a convenient and flexible manner. While digital assessment offers numerous benefits, one significant limitation is its limited effectiveness for assessing essay and short answer questions, which require human evaluation.



5. Improved Ability to Meet Special Needs: Digital technology has significantly improved the educational experience for students with special needs, offering a more inclusive and personalized learning environment. In traditional classroom settings, the rigid structure failed to account for individual differences and learning styles. However, with technological advancements, educational institutions can now cater to diverse needs, including hearing, speaking, or seeing impairments, physical restrictions, and intellectual, social, or developmental disabilities. Students with special needs can now benefit from improved access to educational materials, personalized learning plans, and alternative assessment methods (Ogunode & Ndayebom, 2023)
6. Digitization has revolutionized the way we access and share knowledge, bridging the gap between nations by making hand-copy textbooks, journals, and other literary works accessible through the World Wide Web. With just a click, one can access a vast array of books, including those written by international authors, at an affordable cost. The advent of digitization has also facilitated communication and collaboration among students from diverse institutions, fostering an environment of shared learning and research. The global interconnectedness brought about by digitization has transformed the academic landscape in Nigeria, enabling institutions to embrace technological advancements and facilitate improved access to educational resources and materials.

Conclusion

In conclusion, digitizing higher education management presents a unique set of opportunities and challenges. While online learning platforms, digital assessment tools, and improved access to knowledge can greatly enhance the learning experience, funding, infrastructure, and digital literacy and others, remain significant obstacles to be overcome. Digital learning is not an option but should be compulsory in higher institutions in Nigeria. The World is in the new normal, higher institutions in Nigeria must not be left behind.

Suggestions

To address the challenges militating digitalizing higher education management in Nigeria, the following suggestions are made

1. Government, policymakers, educators, and institutions must work together to allocate adequate resources, develop digital literacy programs, and invest in digital infrastructure. By doing so, we can create a more dynamic, engaging, and equitable educational experience for all students.
2. The national policy on digital technology in all higher institutions should be well implemented beyond mere policy statements.
3. Tertiary institutions in the country should be provided with constant power supply and internet services by Government
4. Government should employ more digital professionals in the higher institutions to support the development of digital learning.

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