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THE IMPACT OF DIGITAL TRANSFORMATION ON THE MANAGEMENT AND SUSTAINABILITY OF GRADUATE EDUCATION IN SOUTHEAST NIGERIA

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Abstract
The study examined the impact of digital transformation on the management and sustainability of graduate education in Southeast Nigeria. The study specifically; evaluate the extent of digital transformation in graduate institutions across Southeast Nigeria, identified the challenges associated with implementing digital transformation in these institutions and also assessed the impact of digital transformation on the management of graduate education, particularly in relation to administrative efficiency and educational delivery. The population of the study is made up of Government and private tertiary institutions in South East Nigeria, with a focus on Enugu, Ebonyi, Imo, and Anambra states. A purposive sampling method was used to select administrators, lecturers, and graduate students who are actively involved in or affected by digital transformation efforts. A sample size of 300 participants was selected, consisting of 50 administrators, 100 lecturers, and 150 graduate students. Data collected were analysed using tables and percentages. Result of the analysis revealed that the extent of digital transformation in graduate institutions across Southeast Nigeria is very poor. It was also observed that there are so many challenges associated with implementing digital transformation in tertiary institutions in South East Nigeria. The study further revealed that digital transformation has significant impact on the management of graduate education, particularly in relation to administrative efficiency and educational delivery. Based on the findings, the study recommended among others that Graduate institutions should prioritize investment in digital infrastructure. Adequate funding should be allocated to establish and maintain modern ICT facilities, ensuring that both students and faculty have access to high-speed internet, digital libraries, and essential software. This can be achieved through government funding, public-private partnerships, and grant support from international organizations.

Introduction
Digital transformation has redefined the educational landscape globally, bringing in new technologies that reshape learning methodologies, administrative operations, and institutional strategies (Adedoyin & Soykan, 2020). This transformation, defined as the integration of digital technology into all aspects of an institution's functioning, influences how educational programs are delivered, how institutions manage resources, and how they adapt to future demands (Dwivedi et al., 2020). In Nigeria, the educational sector faces unique challenges, including limited resources, infrastructural deficiencies, and inconsistent policy implementation (Afolabi & Fagbemi, 2021). As digital technologies become increasingly accessible, the potential for transforming graduate education, particularly in the Southeast region, holds promise for improving management efficiencies and promoting sustainable practices in higher institutions (Okoli et al., 2021).
While Nigerian universities have recognized the benefits of integrating digital platforms, the process of adoption has been slow, with many institutions struggling to keep up with global standards due to funding constraints, skill gaps, and inadequate infrastructure (Nwosu, 2019). In Southeast Nigeria, these issues are compounded by socio-economic challenges, which demand that institutions not only adopt new technologies but also adapt them to local contexts for optimal impact. The effective implementation of digital tools can potentially alleviate some of the operational pressures that

educational institutions face and enhance the sustainability of graduate education by fostering more efficient and flexible learning environments (Eze et al., 2020).

The Southeast region of Nigeria is home to some of the country's prominent universities, which play a significant role in producing skilled graduates. However, managing these institutions and ensuring that their programs are sustainable has become increasingly challenging. Issues such as inadequate funding, limited infrastructure, and the need for continuous faculty development have persisted for decades (Onyechi et al., 2022). With the advent of digital technologies, there is an opportunity to address some of these problems by improving educational management practices and supporting sustainable growth in graduate programs.

In recent years, digital transformation has offered new methods for managing student information, streamlining administrative tasks, and enhancing the quality of education through online learning platforms and digital tools (Chukwu et al., 2021). However, in the Southeast, the adoption of these technologies has been inconsistent, with some universities embracing digital changes, while others remain limited by financial and technical challenges. This study seeks to explore the current state of digital transformation in Southeast Nigeria's graduate education system, the impacts on institutional management, and the potential for fostering sustainability.

Statement of the Problem

Despite the recognized benefits of digital transformation in education, the process remains underutilized in many graduate institutions across Southeast Nigeria. Key challenges include limited funding, inadequate technological infrastructure, lack of trained personnel, and a gap between technological advancements and existing educational policies. Many institutions struggle to maintain the digital tools they have already adopted, resulting in inconsistent usage and inefficiencies that hinder the educational experience.

As a result, many graduate programs are not equipped to meet the evolving needs of the labor market or to prepare students for a digitized economy. There is a need to explore how digital transformation can enhance the management of these institutions and ensure the sustainability of graduate education, providing students with relevant skills for the modern workforce.

Objectives of the Study

The primary objective of this study is to examine the impact of digital transformation on the management and sustainability of graduate education in Southeast Nigeria. The specific objectives are to:

1. Evaluate the extent of digital transformation in graduate institutions across Southeast Nigeria.
2. Identify the challenges associated with implementing digital transformation in these institutions.
3. Assess the impact of digital transformation on the management of graduate education, particularly in relation to administrative efficiency and educational delivery.

Scope of the Study

This study focuses on the digital transformation initiatives undertaken by graduate institutions in Southeast Nigeria, particularly as they pertain to institutional management and sustainability. Emphasis is placed on public and private universities within this region, exploring the extent to which they have adopted digital tools and the effects on their management practices. This research will cover areas such as digital infrastructure, administrative processes, student engagement, and the sustainability of graduate programs in terms of funding, resources, and relevance to the job market.

Significance of the Study

The study on the impact of digital transformation on the management and sustainability of graduate education in Southeast Nigeria is highly significant as it addresses a critical area of development in

education. In an era where technology drives innovation, the integration of digital tools in graduate education has the potential to enhance administrative efficiency, improve teaching and learning processes, and foster a more inclusive educational environment. By examining how digital transformation is shaping the management of graduate education, this study provides valuable insights for policymakers, educational administrators, and other stakeholders to align their strategies with contemporary technological advancements.

Furthermore, this study contributes to the understanding of how digital transformation can enhance the sustainability of graduate education in Southeast Nigeria. Sustainability in education extends beyond environmental considerations to include the capacity to adapt to evolving societal needs, economic challenges, and technological trends. By investigating the role of digital technologies in optimizing resource allocation, improving student engagement, and facilitating remote learning, the study offers practical recommendations to ensure that graduate education in the region remains relevant, accessible, and competitive in the global academic landscape.

Finally, the study holds importance for addressing the unique challenges faced by graduate education in Southeast Nigeria, such as limited funding, infrastructural deficits, and unequal access to quality education. It sheds light on how digital tools can bridge these gaps by enabling cost-effective solutions, fostering collaboration across institutions, and democratizing access to learning resources. The findings of this research are expected to guide stakeholders in making informed decisions about adopting and scaling digital initiatives to not only overcome existing barriers but also to prepare graduate education systems for future demands.

Literature Review

The digital transformation of higher education in Southeast Nigeria has emerged as a critical force in shaping the management and sustainability of graduate education. This shift is characterized by the integration of digital tools and online resources, driven by the need for institutions to adapt to the evolving landscape of technology and learning demands. Studies have shown that digital transformation not only enhances educational access and efficiency but also aligns graduate education with sustainable practices, supporting both social and economic goals.

In the context of management, digital transformation helps institutions streamline administrative processes, from admissions to record-keeping and curriculum updates. This shift can significantly reduce operational costs while improving service delivery and data management, contributing to greater institutional resilience and adaptability (Alojail& Khan, 2023). For example, many Nigerian institutions have adopted Learning Management Systems (LMS), enabling efficient management of educational resources and real-time feedback for students, fostering a more responsive educational ecosystem. Furthermore, the use of analytics in these systems allows administrators to monitor student performance, optimize curriculum designs, and allocate resources effectively, supporting long-term institutional growth.

From a sustainability perspective, digital transformation facilitates sustainable educational practices by reducing reliance on physical resources, such as paper and physical infrastructure, aligning with broader sustainability goals. Digital platforms also promote open knowledge, enabling students and faculty to access educational materials remotely, which can decrease commuting-related emissions and energy use associated with traditional on-campus education. This approach is particularly impactful for Southeast Nigeria, where limited physical resources have traditionally restricted educational access. By supporting remote and hybrid learning models, digital transformation fosters educational inclusivity and promotes equitable access to quality graduate education (Shenkoya & Kim, 2023).

However, challenges remain in terms of digital infrastructure and training for faculty and students, which are critical for the successful adoption of digital practices. Limited access to reliable internet and digital devices can hinder students' ability to engage fully with online learning resources, highlighting a need for policies that promote digital literacy and infrastructure investment (Kamalov,

Calonge&Gurrib, 2023). Addressing these challenges is essential to fully realize the sustainability benefits and improve the management capacities of graduate programs. The digital transformation of education has become a defining factor in the evolution of graduate education globally, particularly in developing regions such as South East Nigeria. Digital transformation involves integrating digital technologies into all areas of an educational institution, fundamentally changing how institutions operate and deliver value to students. This change includes the adoption of digital platforms, e-learning tools, data management systems, and the implementation of remote learning practices.

Recent studies show that digital transformation can have a profound impact on education by enhancing management efficiency and improving the sustainability of educational systems. Research conducted by Nwankwo (2021) highlights the benefits of digital tools in improving accessibility, reducing administrative costs, and enabling personalized learning experiences, which are all essential in meeting the unique needs of graduate students. Further, Ihejieto and Onwubiko (2022) found that e-learning platforms facilitate greater student engagement and flexibility, enabling learners to access materials at their own convenience, which is critical for graduate students who often balance studies with work and family commitments.

However, there are challenges to this transformation. Infrastructure deficiencies, especially unreliable internet connectivity and inadequate digital literacy, continue to hamper progress in South East Nigeria. This problem is further compounded by financial constraints faced by many institutions and students alike, limiting access to necessary digital resources. Despite these challenges, evidence from Anambra and Enugu states (Okoroafor, 2023) suggests that where digital transformation initiatives have been successfully implemented, there have been notable improvements in administrative efficiency and overall student satisfaction.

Overall, the digital transformation in graduate education in Southeast Nigeria is a promising pathway toward sustainable, efficient, and accessible higher education. By continuing to address challenges and invest in technology-driven solutions, institutions can not only improve operational management but also contribute significantly to sustainable development goals in education.

Benefits of Digitization in Higher Education:

There are many benefits of integrating digital technologies into higher institutions. Ding (2000) noted that the advantages of digitization include; digitization means no new buildings are required; improvement in information sharing and the redundancy of collections reduced. Digitization leads to the development of the Internet in digitalized-based institutions. Digital materials can be transmitted, sorted and retrieved easily and quickly. It is cheaper to access electronic information than its print counterpart when storing files in an electronic device with compatible facilities and equipment. Digital texts can be linked and made interactively and improves the retrieval of more information. Also, Panjio‟g‟li (2023) outlined the benefits of digitization in Higher Education including;

i. **Transformation of Teaching:** The implementation of digital technologies in higher education has the potential to transform the way we teach and learn. One of the key benefits of digitization is increased access to education. Online learning platforms, for example, can provide students with access to educational resources from anywhere in the world. This can be particularly beneficial for students who are unable to attend traditional brick-and-mortar institutions due to financial, geographical, or personal constraints. Online learning can also provide students with more flexible learning opportunities, allowing them to study at their own pace and on their schedule.

ii. **Customize Learning Experiences:** Another benefit of digitization is the ability to customize learning experiences to suit individual needs. Digital technologies can provide students with personalized learning experiences, allowing them to focus on

areas where they need the most support and challenge themselves in areas where they excel. For example, educational apps can provide students with interactive and engaging learning experiences that are tailored to their individual needs and interests. In addition to these benefits, digitization can also enhance the quality of education. Multimedia resources, for example, can provide students with access to a wide range of educational materials, including videos, podcasts, and interactive simulations. These resources can help to bring complex concepts to life and make learning more engaging and interactive.

iii. **The advent of online Testing:** Along with online education comes the advent of online testing, which is hugely beneficial for a whole host of reasons. Foremost among those reasons is the fact that online testing is impartial and entirely fair. If a machine is grading the test and automatically correcting wrong answers, it's impossible to show any signs of bias. Additionally, online testing can be an excellent solution for those who suffer from test anxiety and are distressed by taking tests in a room with a group of other people. Finally, it's also much better for those with busy schedules, who may struggle to be at a testing centre at a particular time. Online testing isn't without drawbacks, however. Most notably, it is only effective for multiple-choice tests, not for essay or short answer questions. Students can still take essay-based tests online, but a human teacher will need to evaluate them.

iv. **Improved Ability to Meet Special Needs:** In the past, a rigid classroom structure defined the world of academia. Each student had the same experience no matter their differing needs or abilities. While some students could function well in this environment, others had unmet needs. Technology improves a school's ability to meet the needs of all types of students. Now, students with hearing, speaking or seeing impairments, or those who are largely house bound, can still receive a quality education. Technological advancements can also meet the needs of students with intellectual, social, or developmental disabilities. No matter what a student's unique needs may be, technology affects education for the better by improving our ability to create learning environments that work for all.

In addition, McNulty (2021) opined that curricula that are delivered in digitalized environment improve learning and innovation skills, information, media and technology skills, and life and career skills. Whereas, curricula taught in non-digitized contexts cover cognitive skills such as critical thinking, problem solving and creativity because it is possible to teach and learn these skills without having access to digital tools and environments. As a result, the digitisation of education provides a chance for learners to establish a cognitive resource-based mechanism and enhance their abilities, as well as to engage in lifetime learningandcontinuouseducation(Abdullahi&Tijani,2019).Intoday"sdigitalizedenvironment,moderninstructionalmaterialsarecriticalanddesirable.Technologyisusedinmodernschoolingtoimpartknowledge.Educationbecomes a collaborative and self-driven business in which instructors, students, and other stakeholders are involved as a result of digitalisation, which provides information that may be transmitted in a variety of ways, for instance, teacher-directed, joint teacher-and-learner-directed, and learner-directed.

Digitisation makes it possible for nearly all hand-copy textbooks, journals and other literary works to be converted into soft copy and stored on the World-wide Web for easy access. With just a click one may have access not only to books written by our nationals but other international authors. Therefore, it bridges the gap in access to international books. Books with high costs may be affordable in soft copies. Digitization interconnects students from different schools, even

internationally in the discussion of academic-related matters which widens the research of many students. E-libraries are available in many varieties. The world is increasingly becoming a global village, due to interconnectivity among nations. This is made possible through digitisation. Development in technology is gradually creeping into the academic system in Nigeria.

Problems Militating Against Higher Education Digitalization in Nigeria

There are many problems militating against the digitalization of higher education in Nigeria. Some of these problems include; poor funding of digital education, inadequate digital facilities, unstable power, poor internet coverage, high cost of digital facilities, high cost of maintenance, shortage of digital personnel, poor lecturers‟ digital skills and knowledge, poor students‟ digital skills and knowledge, the resistance of change and lack of self-control. A brief description of each is as follows:

i. **Poor Funding of Digital Education:** Poor funding of digital education in Nigerian higher education has hampered the development of digital education in the sector. Higher education is underfunded in Nigeria and this affects‟ all programmes including the digitalization programme in the sector. Dada et al.,2022noted that inadequate financing and allocation for digital technology at university education have resulted in an insufficient supply of digital facilities, equipment, and materials. Funding according to Orunaboka & Nwachukwu (2012), Abdullah et al. (2017) and Akinyemi et al. (2022) is a critical component in education for lowering the cost of operating educational institutions, paying teachers‟ salaries, allowances, and pensions, and purchasing teaching and learning equipment such as textbooks, laboratories, multimedia, and computer equipment, among other things. As a result, government education spending is primarily reliant on federal account allocation, making its educational aims vulnerable to national mobilization and expenditure management issues (Okwuosa&Modibbo,2021). The annual allocation for the administration and management of universities in Nigeria is small and is affecting the development of infrastructural facilities like ICT in various institutions. Many offices and departments in the universities in Nigeria do not have adequate computer systems and laptops enough for the Non-academic staff to work. Some Non-academic staff has to wait for others to finish using the computer before they can use it for office work. The universities due to their underfunding could not provide all the relevant information technologies to meet the information needs of their academic and non-academic staff (Ogunode, 2020).

ii. **Poor Internet Coverage:** Internet service is very important for the attainment of digitalization goals in Nigeria. Internet service is critical for the operation of digital education. Internet service is the life wire of digitalization. Availability andstableinternetservicesmakedigitaleducationefficientandeffectiveineducational institutions. It is unfortunate that in Nigeria, internet coverage and accessibility are still a problem. Poor internet connection is a common problem in Africa especially in Nigeria. The inability of the government to ensure a meaningful internet connection across Nigeria has affected the digitalization of educational institutions. For instance, Guardian (2022) reported that only 12.1 percent of the Nigerian population currently enjoys Internet services (Meaningful Connectivity) quality in the country. This is according to in-depth research by the Alliance for Affordable Internet (A4AI). A4AI, which explained that an 81 percent meaningful connectivity gap exists in Nigeria, claimed that only 6.6 per cent of the rural population and 16.4 per cent of the urban have good Internet service. This is coming as broadband penetration in Nigeria hits 42.3 per cent, while users increased to 80.7 million. The Nigerian Communications Commission (NCC) statistics, which revealed this, also informed that Internet users via the narrow band also rose to 145.8 million within the same period. But A4AI explained that meaningful connectivity is a policy framework and Internet access metric to understand the quality of Internet access someone has. Many

communities and cities in Nigeria still do not have access to quality and reliable internet service to carry out various services including educational services. This problem has limited the opportunities of many higher institutions from enjoying digital education services in their respective institutions. Idowu et al. (2017) ascertained that due to poor internet services in some higher institutions, students and staff have to be moving from one location to another location within an institution just to access internet service and carry out academic services. Ogunode & Jegede (2020) and Ogunode et al. (2021f) concluded that poor internet services in many higher institutions in Nigeria have hampered the digitalization programme and development of many higher institutions in Nigeria. Attah (2021) expressed regret that access to technology has remained a major challenge facing Nigeria, noting that Internet penetration stands at 42.06 per cent in Nigeria where most of the population lives in rural areas. Another issue that has frustrated the usability of digital facilities by students is the high cost of the facilities.

iii. **High Cost of Digital Facilities:** One of the challenges of deploying digital facilities in Nigerian higher institutions is the high cost of internet data and electronic services, which is the determinant of digital technology usage and value (Tongia, 2004). The internet as we know it today was created in the United States of America and introduced to the rest of the world. America still has a stronghold of control, as most developing countries pay huge amounts of dollars to the US Government for the connection of a few megabits per annum (ibid.). This affects the deployment and full utilization of information and communication technologies in these growing countries, of which Nigeria is one. In Nigeria, the high cost of digital facilities, internet data and fast tariffs set by internet providers, mostly international companies doing business in the country with the main interest of making profits. Higher institutions cannot afford to make ICT available to the whole university which includes staff and students, unless they have sponsors or government funding to embark on such projects. Ogunode et al.(2021e) noted that Nigeria's tertiary institutions lack basic office gadgets and technologies like computers, printers, faxing machines, photocopiers, binders, and projectors not even to talk of the internet in most institutions as a result of underfunding and the high cost of the facilities.

iv. **High Cost of Maintenance:** High-tech digital facilities need maintenance always. The sustainability and survival of digital facilities depend on high maintenance culture from users. The maintenance of these technological facilities is very expensive to carry out. Ogunode (2020) submitted that the cost implication required for maintaining ICT facilities is high and this made many administrators limit the time allocation for internet services within the university environment. This action limits academic and student access to the use of computers for schoolactivities.Kupoluyi(2015)statedthatthechallengesofthehighcostofbandwidth and efficient utilisation of ICTs, awareness and mindset, lack of top-levelcommitmentfortheprogressinICTintegration,asystematicmethodimplementation, lack of technical support, insufficient knowledge, gender, age ofteacher,lackofmotivation,lackoftechnicalskills,insufficientavailabilityof hardware/software and the inability of many Nigerian teachers to be computer-literate. Also, Emmanuel et al. (2014) concluded that the high Cost of Computer Equipment. The exchange rate of dollars, euros, Pounce and Nigerian currency (Naira) hinders schools with poor turnover in school fee payment and ParentsTeachersAssociationcontributionsinthepurchaseandsupplyofcomputersystemsinNigeriansch ools.Someprivateschoolsgointohigherpurchasemethods (hp) to acquire computer systems for their computer laboratory. Dada et al. (2022) noted that due to the poor maintenance culture of the staff and operators of ICT facilities viruses find their way into the computer system, Computer virus is a destructive programme that is cable of destroying both programme and document files in the computer system. Students corrupt the computer system in the laboratories with this virus.

v. **Shortage of Digital Personnel:** One of the challenges of digital development in higher institutions in Nigeria is the shortage of professionals in digital technologies. Digital professionals are in short supply in Nigeria due to poor manpower planning and a shortage of higher institutions

offering technological courses. The limited digital personnel produced in the country are found in the banking sector and oil and gas. The few individuals in the various higher institutions are leaving for developed countries due to poor motivation and the various challenges that have befallen the higher institutions. A poor shortage of digital personnel in higher institutions has hampered the development of digital education in higher institutions. Another challenge according to Panjio‟g‟li, (2023) is the need for faculty development and support. Digital technologies require specialized knowledge and skills, and faculty members may need supportandtrainingtoeffectivelyincorporatethesetechnologiesintotheirteachingpractices. Without adequate support, faculty members may be hesitant to adopt digital technologies, or they may use them ineffectively, which can negatively impact student learning outcomes. The shortage of professional digital experts is another problem hindering the effective use of digital facilities in institutions (Titus,2018) lamented their dearth of digital professionals in educational institutions.

vi. **Poor Lecturers' Digital Skills:** Digital illiteracy is another challenge of digital education in higher institutions in Nigeria. Digital literacy is the key to the deployment of digital facilities in the schools. When lecturers who are supposed to use these facilities are not literate in them, it becomes a problem and may hinder the usage of the facilities. Titus (2018) observed that digital education has become part and parcel of the higher institution. In an average university, digital technologies are needed for numerous tasks which includes: students‟ application to universities; processing and registration of large application of students; creation of students‟ records in a database for students and university staff; design and development of university website; conduct of research by members of the academic and students; university administration for managerial purposes; students‟ assessments, exams and records. Unfortunately, many lecturers are not digitally literate. Oyedokun et al. (2018), Olatunde-Aiyedun et al. (2021) and Livinus (2013) argued that poor digital skills and knowledge of lecturers in Nigerian higher institutions have affected the development of digitization programmes in various institutions. Also, Idowu &Esere (2013) noted that an average Nigeria University staff is not computer literate, which is disappointing in this modern digital era. No doubt that most of them may have at some point studied computer applications or gone for basic computer training, but computer training without continuous practice is as good as nothing, as practice makes perfect. Computer illiteracy in this current age of the ICT boom is a great threat to any establishment, talk more of an educational institution as almost all human activities depend on ICT (Anene et al., 2014). Ogunode (2020), Umar & Rosnaini (2018) and Idowu et al. (2017) submitted much academic staff in Nigerian higher institutions are not ICT computer literate and this is limiting their usage of ICT for carrying out academic services

Methodology

This study made use a mixed-methods research design to comprehensively examine the impact of digital transformation on graduate education management and sustainability. Quantitative data was collected to understand the prevalence and effectiveness of digital tools currently in use, while qualitative data will provide insights into the experiences of administrators, faculty, and students with these tools. The study targeted public and private graduate institutions in South East Nigeria, with a focus on Enugu, Ebonyi, Imo, and Anambra states. A purposive sampling method was used to select administrators, lecturers, and graduate students who are actively involved in or affected by digital transformation efforts. A sample size of 300 participants was selected, consisting of 50 administrators, 100 lecturers, and 150 graduate students. Data were gathered using questionnaires and semi-structured interviews. Questionnaires were distributed to collect quantitative data on the extent of digital transformation in educational management and its perceived benefits and challenges. Semi-structured interviews were conducted with administrators and faculty members to gain qualitative insights into the specific challenges and successes experienced in implementing digital transformation in their institutions.

Data Analysis

Quantitative data was analysed using statistical methods, including descriptive statistics and regression analysis, to determine correlations between digital transformation initiatives and measures of institutional efficiency and sustainability. Qualitative data from interviews were analysed using thematic coding to identify recurring themes related to challenges, benefits, and sustainability impacts.

CONCLUSION AND RECOMMENDATIONS

Summary of Findings

At the end of this research work on the impact of digital transformation on the management and sustainability of graduate education in Southeast Nigeria. The study found out the following;

1. The extent of digital transformation in graduate institutions across Southeast Nigeria is very poor.
2. It was also observed that there are so many challenges associated with implementing digital transformation in tertiary institutions in South East Nigeria.
3. The study further revealed that digital transformation has significant impact on the management of graduate education, particularly in relation to administrative efficiency and educational delivery.

Conclusion

The research highlights that digital transformation in graduate institutions across Southeast Nigeria is currently underdeveloped. Although digital tools and systems have the potential to enhance administrative efficiency and educational delivery, the poor extent of implementation hinders these benefits. Furthermore, numerous challenges—such as inadequate infrastructure, limited funding, and a lack of skilled personnel—contribute to the slow adoption of digital transformation in these institutions. Despite these barriers, the findings underscore the significant positive impact that digital transformation can have on the management and sustainability of graduate education, especially in terms of streamlining processes, improving resource utilization, and supporting effective learning outcomes.

Recommendations

1. Graduate institutions should prioritize investment in digital infrastructure. Adequate funding should be allocated to establish and maintain modern ICT facilities, ensuring that both students and faculty have access to high-speed internet, digital libraries, and essential software. This can be achieved through government funding, public-private partnerships, and grant support from international organizations.
2. Training programs should be developed to equip administrative staff, educators, and students with the skills necessary to use digital tools effectively. This can be facilitated through workshops, seminars, and certification programs that focus on essential digital competencies, including data management, e-learning platforms, and cybersecurity practices.
3. Policymakers in educational institutions should design strategies and frameworks to guide the implementation of digital transformation. This includes formulating clear policies on ICT usage, integrating digital practices into the academic curriculum, and setting achievable timelines for rolling out digital solutions across all departments.

References

Abdullah, M. B., Harun, M., Razani, M., &Jali, M. (2017). Government funding in education industry. International Journal of Academic Research in Business and Social Sciences,7(6),2222-6990.

Abdullahi, N. J. K. & Tijani, A. A. (2019). Digitalisation in education system and management of early childhood care education in Nigeria. Southeast Asia Early Childhood Journal.8(2),28-42.

Adavbiele, J. A. (2016). The use of ICT to enhance university education in Nigeria. International Journal of Education, Learning and Development, 4(5), pp.1-11,

Airen, E. A. (2011). ICT literacy among undergraduates in Nigerian universities. Springer Science Business Media, LLC 2011.

Akinyemi, I. A., Amaechi, L. I., &Etoh, L. C. (2022). Digitalisation of education in Nigerian secondary schools: Benefits and challenges. Journal of Education & Humanities Research (JEHR),13 (I),34-44.

Alojail, M., & Khan, S. B. (2023). Impact of Digital Transformation toward Sustainable Development. Sustainability.

Anene, J. N., Imam, H. &Odumuh T. (2014). Problem and prospect e-learning in Nigerian universities. International Journal of Technology and Inclusive Education (IJTIE), 3 (2),320-327.

Attah. (2021). 60% of Nigerians lack access to smartphones, digital devices. Retrieved June 5,2023, from https://guardian.ng/news/60-of-nigerians-lack-access-to-smartphones-digital-devices/

Azuh, O. J. & Melody, N. M. (2014). Academic staff challenges to effective utilization of Information and Communication Technology (ICT) in teaching and learning of agricultural education. International Letters of Social and Humanistic Science,13,88-96.

Babatunde, B. O. &Paschal, I. A. (2016). Challenges and barriers to ICT deployment in Nigerian universities. ResearchGate. Retrieved January 2, 2023, fromhttps://www.researchgate.net/publication/303810498_Challenges_and_Barriers_to_ICT_Deployment_in_Nigerian_Universities

Bejinaru, R. (2019). Impact of digitalisation on education in the knowledge economy.

Dada, M. D., Atobauka, I. S., & Ogunode, N. J. (2022). Deployment of Information Communication Technology for universities administration in Nigerian public universities: challenges and way forward. Middle European Scientific Bulletin, 19, 166-172.

Ding, C. M. (2000). Access to digital information: some breakthrough and obstacles. Journal of Librarianship and Information Science,32(1).

Emmanuel, B. H., Umoh, A. A. & Emmanuel, A. E. (2014). The challenges of information and communication technology in Nigerian universities: the way forward. Global Journal of EducationalResearch,14, 1-8.

Federal Republic of Nigeria (2013). National Policy on Education. 6th ed. Lagos: Nigerian Educational Research and Development Council.

Guardian. (2022). 81 % of Nigerians lack meaningful internet connectivity. Retrieved January 5,2023,fromhttps://guardian.ng/business-services/81-of-nigerians-lack-meaningful-internet-connectivity/

Idowu, A. I. &Esere, M. (2013). ICT and higher educational system in Nigeria. Academic Journals, 8.

Idowu, A., Esere, M., &Iruloh, B. R. (2017). Computer accessibility, usage and lecturers‟ perception of innovative ICT based assessment in a Nigerian university. Sustainable Transformation in African Higher Education, 215-226: Springer.

Jagboro, K. O., Omotayo, B. O. & Aboyade, W. A. (2012). Digitization of library collection in developing countries: the Hezekiah Oluwasanmi Library Experience. Library Philosophy and Practice, 1-11.

Jegede, D. & Abashi, L. (2019). Challenges Facing the Administration of ICT Infrastructural Facilities in Public Primary Schools in Nigeria. Electronic Research Journal of Engineering, Computer and Applied Sciences,2, 30-41.

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Jegede, D.& Diaka, P. E. & Ogunode, N. J. (2021). Challenges preventing the use of information and communication technology for the teaching and learning of Christian religious studies in F.C.T, Abuja, Nigeria. Central Asian Journal of Literature, Philosophy and Culture, 2(8), 10-21.

Joel, I. E., Ogi, J. &Ikpe, J. (2019). Politics of ICT Integration in Secondary Schools in Nigeria Problem sand Prospects. Bsujem, 1(2), 250-260.

Kamalov, F., Calonge, D. S., & Gurrib, I. (2023). Digital and Sustainable Transformation of Education: Technology Enhanced-Teaching, Learning and Social Inclusion. Sustainability.

Kupoluyi, A. K. (2015). Before engaging jobless graduates as teachers. The Punch.December21. p. 6.

Livinus, E. (2013). Computer literacy and utilization among academic and non-academic staff of Ebonyi State College of Education, IKWO. Journal of Qualitative Education,9(1),1-5.

Machekhina, O. N. (2017). Digitalisation of education as a trend of its modernization and reforming. Revista Espacios, 38(40), 26-32.

Management Dynamics in the KnowledgeEconomy,7(3), 367-380.

Micheal, G. & Jacob, Y. (2017). Digitalization in education. Journal of Education Science, 2(3),12-18.

Ogunode, N. J., Audu, E. I., Ahaotu, G. N. (2020). Problems faced by students in public universities in Nigeria and the way forward. Jurnal Sinestesia, 10, (2),105-115.

Ogunode, N. J., Babayo, I. B,,Jegede, D. &Abubakar, M. (2021b). Challenges preventing non-academic staff of Nigerian Universities from using ICT effectively and ways forward. Electronic Research Journal of Engineering, Computer and Applied Sciences,3,39-50.

Shenkoya, T., & Kim, E. (2023). Sustainability in Higher Education: Digital Transformation of the Fourth Industrial Revolution and Its Impact on Open Knowledge. Sustainability.