

Digital Curriculum Deployment in Tertiary Institutions in Nigeria: Problems and Way Forward

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Abstract:

This paper discussed the barriers to the deployment of digital curriculum in the tertiary institutions in Nigeria. The paper is a review paper that depend secondary data. The secondary data were collected from print and online publications. The paper identified poor funding, inadequate digital infrastructure facilities, unstable power supply, unstable internet service, poor implementation of digital policies and poor digital literacy of lecturers and students. Based on this problems identified, the paper suggests the following; government should increase the budgetary allocation to education, provide adequate modern digital infrastructure facilities, ensure quality stable power supply and internet services. The government should organize training for both lecturers and students on digital usage in the tertiary institutions in Nigeria and ensure full implementation of digital policies.

Keywords: Digital curriculum, Tertiary education, Problems

1.0 Introduction

Tertiary education is an organized educational system that is consciously designed for manpower production, in-service training and national development. Tertiary education is an education that advances teaching, research and community services for national development. Tertiary education is an education industry that is meant for the production of manpower and national development via implementation of teaching, research and provision of community services (Ogunode, 2022).

Tertiary education, also called post-secondary education, is any level of education pursued beyond high school, including undergraduate and graduate credentials. These credentials encompass certificates, diplomas or academic degrees. Tertiary education refers to specialized education in a

specific field, taken on after finishing high school. Tertiary education is non-compulsory and provided in a specialist institution, usually a college, polytechnic or university. This form of education may be delivered virtually or at a distance (Top-hat, 2022).

Tertiary education is the education received after post-secondary education. Higher education is an education that is anchored on teaching, researching and community services. According to the National Policy on Education (FRN, 2013), Higher Education is 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.

The objectives of tertiary education in Nigeria include the acquisition, development and inculcation of the proper value orientation for the survival of the individual and societies; the development of the intellectual capacities of individuals to understand and appreciate the environment; the acquisition of both physical and intellectual skills which will enable individuals to develop into useful members of the community; the acquisition of an overview of the local and external environments (FRN, 2013). The National Policy on Education again stated that higher educational institutions should pursue these goals through Teaching, Research, the dissemination of existing and new information, the pursuit of service to the community; and being a storehouse of knowledge (FRN, 2013).

The objectives of tertiary education according to Ogunode, (2022) includes; to provide higher education opportunities via effective teaching, researching and provision community services; to develop produce students with specialized knowledge and skills for solving personal problem and national problem; to prepare student for national workforce and to contribute to societal and community development; to provide academic program of various disciplines; to provide quality instruction in field of studies and to conduct researches to generate new knowledge for national development and to solve complex problems.

2.0 Literature Review

Digital curriculum are instruction package in digital platform for teaching and learning. Digital curriculum are curriculum planned and organized in digital platform such classroom portals and learning spaces, E-books and digital textbooks, digital lessons, Pre-recorded and live sessions, online communities or forums, multimedia content (Videos, infographics, websites, and embedded content) and E-learning apps and software (Mural (for visual collaboration), kahoot (for quizzes), or PhET (simulations), web-based platforms, course providers, and courseware for teaching and learning to optimize learning strategies, provide innovative methods, and personalize learning provision. Digital curriculum is a curriculum of instruction that is digital inclined. Digital curriculum enhances personalize learning, suit learning needs, and provide opportunities (Ogunode, 2022).

A digital curriculum replaces traditional curriculum, such as textbooks and, in some cases, the traditional classroom environment. Some examples of a digital curriculum include: Online courses, Electronic textbooks, Digital and online programs (Study.com, 2022). A digital curriculum is about more than using technology in the classroom. It's about integrating digital curriculum resources into every aspect of the learning process. When a digital curriculum is designed well, there isn't even a need for a physical classroom; the entire education experience can happen in a digital space. The key is for the curriculum to be designed by education experts who understand how to apply digital technology. For example, studies have found that "when computing devices were used as tools to supplement the traditional curriculum, no increase in achievement was observed; when computing devices were used as the main teaching tools in class, however, student achievement increased (Connectacademy.com 2022)..” A key to the digital curriculum is that the resources are also available to students outside the classroom. Teachers use digital resources to individualize and

personalize student learning experiences. I have observed excellent teachers creating digital documents, e-books, interactive lessons, and video tutorials to extend learning and add relevance to lessons. A textbook can only get you so far and is a static resource, outdated before it even gets into student's hands. Digital active curriculum assists students to dive much deeper into understanding and in transferring learning (Joseph, 2021).

A digital curriculum can replace traditional curriculum, such as textbooks and, in some cases, the conventional classroom environment. Some examples of a digital curriculum include: Online courses, Electronic textbooks and Digital and online programs. A classroom design for a digital curriculum allows for a blended learning environment in a traditional brick-and-mortar classroom or an entirely online learning environment. In environments where the digital curriculum is expanding, teachers deliver assignments and curriculum materials via an online learning management system (LMS). Electronic textbooks have enabled teachers to replace the heavy books used previously. Today's electronic textbooks are web-based and can quickly open on a tablet, smartphone, laptop, or computer (Joseph, 2021). Electronic curriculum, or E-curriculum, refers to computer-based learning including educational materials available on CD or DVD, online courses, electronic mechanisms to search the literature, email, and various applications of instructional technology including providing laptops to students, multimedia projection systems, and Internet-compatible classrooms. In spite of enthusiasm about the potential for E-curriculum to enhance dental education, there is minimal guidance in the literature to assist schools with implementation (Hendricson, Eisenberg, Guest, Jones, Johnson, Panagakos, McDonald, Cintron, Dent, 2006).

Digital and online curriculum programs are widely used in schools today. Some examples include Newsela, Khan Academy, and ST Math. These programs are designed to teach or reinforce curriculum standards using gamification and other engaging characteristics. A digital curriculum may reinforce math or reading standards using video lessons and practice activities, for example. In addition, personalized learning programs with built-in assessments, such as adaptive computer assessments, make it possible for teachers to individualize instruction to meet the unique needs of each student. One of the significant advantages of a digital curriculum is the simplicity of sharing resources. It is far easier for teachers to give feedback on their assignments, co-author and co-teach assignments, and even pool their resources into one accessible place. This is a transformation of the way teaching works typically with paper, and one that should lead to more collaboration among teachers at your school (Joseph, 2021). Digital curriculum and resources include: classroom portals, digital lessons, digital textbooks and e-books, virtual live lesson sessions and virtual student clubs.

3.0 Methods

This paper discussed the barriers to the deployment of digital curriculum in the tertiary institutions in Nigeria. The study used secondary data. The content analysis method was adopted for the selection of data. The data were collected from the following sources review of published articles from reputable international journals such as CEON, Elsevier, Hindawi, JSTOR, IEEE, Learn Techlib SAGE, Nebraska and Springer amongst others (Adapted from Ogunode & Ndayebom, 2022).

4.0 Data Analysis

4.1 Barriers to effective deployment of Digital Curriculum in Tertiary institutions in Nigeria.

The barriers to effective deployment of digital curriculum in tertiary institutions in Nigeria includes; poor funding, inadequate digital infrastructure facilities, unstable power supply, unstable internet service, poor implementation of digital policies and poor digital literacy of lecturers and students

4.1.1 Poor funding

Inadequate funding of Nigerian educational institutions in Nigeria have affected the digital education development in the various institutions of learning. Digital education is an expensive

education. It involve procurement of many high tech facilities and high maintenance services. Poor funding of the education system have seriously hampered the development of digital education in the sector. The allocation for the administration and management of educational institutions in Nigeria is inadequate. The education budget of Nigeria has not been encouraging by the various three tiers of government (Ogunode, & Ndayebom, 2022). 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 (Ogunode 2021; Musa 2018). 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; Adeoye & Adeoye, 2017; Ding, 2000).

4.1.2 Inadequate digital infrastructure facilities

Another barrier to effective deployment of digital curriculum is the problem of inadequate digital infrastructure facilities. Digital curriculum needs a lot of facilities to function properly and when those facilities are not adequately supplied it become problem to effectively use digital facilities in the institutions. Ogunode et al. (2021b) noted many higher institutions are faced with a shortage of digital facilities to enable them fully integrate into digitalization programmes in the country. The non-availability of these digital facilities has prevented lecturers, researchers and students in higher institutions from fully deploying the facilities for teaching, researching and carrying out academic activities in the various institutions.

4.1.3 Unstable power supply

Unstable power supply is a challenge to the deployment of digital curriculum in the tertiary institutions in Nigeria. Thisday (2022) reported that West Africa has one of the lowest rates of electricity access in the world with only about 42% of the total population and 8% of rural residents, having access to electricity, yet only three countries are on track to provide access to electricity by 2030. “At this slow pace, 263 million people in the region will be left without electricity in ten years,” the World Bank said in its „Putting Africa on the path to universal electricity access“ report. Also, the 2022 Energy Progress Report released by Tracking SDG 7 observed that Nigeria has the lowest access to electricity globally, with about 92 million persons lacking access to power which is stifling the country“s industrial growth and causing other problems.

4.1.4 Unstable internet service

Safsim.com (2022) noted that one of the main challenges is access to technology and internet connectivity. Not all schools have the resources to provide each student with a dedicated device or reliable internet access. This digital divide can create disparities in digital literacy education. To address this challenge, schools can explore partnerships with community organizations, seek grants and funding opportunities, or implement creative solutions such as shared device programs or mobile learning labs. Guardian (2022) reported that only 12.1 per cent 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 per cent 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.

4.1.5 Poor implementation of digital policies

Poor policy implementation has been a challenge to the digitalization of higher education in Nigeria. To realize the international goals of digital education and national goals of digitalization of education in Nigeria, the federal government has developed different ICT policies and digital policies to enable the development of digital education in Nigeria. For instance, The Federal Government of Nigeria through the Nigeria Digital Economy Policy and Strategy (NDEPS) document has set a corresponding target of achieving 95 per cent digital literacy by 2030 (NITDA, 2021). The policy is anchored around equipping Nigerians with relevant digital literacy skills to keep up with the best global practices will put the current workers, youths and other professionals in ready mode for opportunities that may open up within and beyond the shores of Nigeria. This will diversify the economy, significantly reduce unemployment and enhance labour productivity and mobility. In turn, this would improve investment and transform Nigeria into a country well-known for technology, problem-solving and critical thinking. The Nigerian digital policies stated that the National broadband brand that is targeting about 95 per cent digital levels to be achieved across states and local governments by 2030.” And with a target to achieve 60 per cent digital literacy for youths and adults by 2025. The poor implementation of educational policies in Nigeria has affected the development of education (Ogunode et al., 2021).

4.1.6 Poor digital literacy of lecturers and students

Recently, World-Bank Development reported that more than 50 percent of Nigeria’s over 200 million population do not have digital skills and therefore cannot use data services, according to the 2021 (World Bank Development Report, 2021). The report further revealed that for Nigeria, despite having national data infrastructure compared to peers, there is still a huge gap in data usage, as critical demand side barriers persist. Chief economist at World Bank described the gap as a huge policy problem for Nigeria and the West African region. The report indicated that across Nigeria, the largest segment of the population is in the usage gap because they report a lack of digital literacy. More than half of the population is reporting that they don’t have the skills to use data services, so this is a huge policy challenge, one of the largest for Nigeria and for the region. (Businessday, 2020). In the course a projects by (Attah 2021) in Borno State in 2021, the study discovered that there is nobody to guide them on how to use it digital facilities. Over 90% by a conservative estimate of the Nigerian school students cannot use computers (Adako & Aturamu, 2006).

Another challenge is the fast-paced nature of technological advancements. New technologies and digital tools emerge constantly, making it challenging for educators to keep up with the latest trends and integrate them into their teaching practices. Ongoing professional development and collaboration among educators can help overcome this challenge. Schools can establish learning communities or professional networks where teachers can share best practices, resources, and strategies for integrating new technologies into the curriculum. Also, digital literacy education requires a shift in pedagogical approaches. Traditional teaching methods may not be effective in fostering digital literacy skills. Educators need student-centred approaches that promote active learning, critical thinking, and problem-solving. Educators can create engaging and meaningful learning experiences that develop students’ digital literacy skills by incorporating project-based, inquiry-based, and collaborative learning strategies (Safsim.com 2022).

4.2 Conclusion and Recommendations

This paper discussed the barriers to the deployment of digital curriculum in the tertiary institutions in Nigeria. The paper identified poor funding, inadequate digital infrastructure facilities, unstable power supply, unstable internet service, poor implementation of digital policies and poor digital literacy of lecturers and students.

Based on this problems identified, the paper suggests the following; government should increase the budgetary allocation to education, provide adequate modern digital infrastructure facilities, ensure quality stable power supply and internet services. The government should organize training for both lecturers and students on digital usage in the tertiary institutions in Nigeria and ensure full implementation of digital policies.

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