Digital Libraries and Higher Education in Nigeria in 21st Century

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ABSTRACT

Higher education in Nigeria has come under severe criticisms in recent time due to poor quality of its products. There is therefore an urgent need for academic institutions in Nigeria to catch up with innovations in educational practices in developed economies. This paper explores the benefits of digital libraries to higher education in Nigeria in the 21st century. It examines the challenges being faced by higher education in Nigeria. These include the deplorable state of the libraries, inadequate funding, severe shortfall in teacher: student ratio, poor quality of graduates, increasing demand for participation in higher education, among others. It highlights the fact that digital libraries are critical and essential for effective teaching, research, and learning in all tertiary institutions in the 21st century and it should therefore be a priority. However, the paper stresses that the development of digital libraries should not be conceived as a panacea for the myriads of challenges facing higher education in Nigeria but that it is a technology that promises to address some of these challenges. Therefore, strong and unwavering commitment by all the stakeholders towards the deployment of digital libraries in tertiary education is recommended.

Key words: Digital libraries, higher education, Information & Communication Technology, Nigeria

1. INTRODUCTION

The world is witnessing rapid transformation in all spheres of human endeavour due to the deployment of digital technologies. Opoku[1] observes that digital technologies have been integrated into virtually every facet of education, commerce, health, governance and civic activity, and have become critical factors in creating wealth worldwide. This technological innovation is tremendously impacting all levels of education, particularly in critical areas like higher education. The pervading impact of digital technologies have given birth to a number of digital libraries all over the world. Digital libraries play significant role in teaching, research, and learning in academic institutions. These include reduction of the digital divide, improved use of information, improved collaboration, timely access to information, improved facilities for information sharing, improved searching and manipulation of information, and so on[2]. The focus of this paper is to explore the benefits of digital libraries to higher education in Nigeria in the 21st century.

2. CHALLENGES FACING HIGHER EDUCATION IN NIGERIA

All over the world, higher education plays a strategic role in human capital formation. It is a place where students are equipped with cutting-edge competencies to compete in the ever-evolving globalised world. Unfortunately, the products of most academic institutions in Nigeria fall short of this expectation. Abubakar[3] declared that: "the stark reality is that the quality and worth of our human capital have gone down quite with serious long-term implications for the effective management of the nation's affairs, its prosperity and its competitiveness in the global environment. Many see the universities as purveyors of stale and sterile knowledge that churn out half-backed products that can neither be employed nor can they engage themselves gainfully".

A fundamental problem facing most academic institutions in Nigeria which affects the quality of their products is the deplorable state of the academic libraries. Zell (1998) cited by Teferra[4] captured vividly the sorry state of most academic libraries. He observed that: "academic librarians for sometime now have found it increasingly difficult to acquire and make available to their users the full range of publications in print format they require and to which members of the university community might need has been estimated that the average cost of a journal virtually doubles within a period six years, and some of the main culprits in massive increases in subscription rates… were some of the leading European science journals".

Similarly, the Report on Libraries in Nigeria Federal Universities commissioned by the National Universities Commission (NUC) in 1990 cited by Ogunrombi[5] indicated that the book stock of Nigerian University libraries is in a deplorable state such that the libraries can no longer support the academic programmes of their institutions. About 90 per cent of the book collections of universities studied is foreign imprints. There is no remarkable improvement in the current state of most academic libraries as many of them are largely stocked with outdated books and journals. However, only academic libraries that are linked up to the world wide web could boast of significant change and unfortunately many tertiary institutions in Nigerian are yet to be connected to the internet. No doubt the quality of the library in any academic environment affects the quality of teaching, research and learning and this in turn determines the quality of the output.

Furthermore, the 2003 World Bank report on research which is the core function of academic institutions indicated that although Nigeria is Africa's most populous country it has only 15 scientists and engineers engaged in research and development per million persons. This is in contrast with 168 in Brazil, 459 in China, 158 in India, and 4,103 in the United States. The same report revealed that as in 1995, Nigeria's scientific publication was only 711 while that of South Africa was 3,413, India's was 14,883 and Brazil's was 5,440. If Nigera is far behind in research there is no indication that it is measuring up in teaching and learning[6].

More so, teaching and learning has to contend with what Knapper cited by Jaffer, Ng'ambi and Czerniewicz[7] described as: "instruction that is too didactic, a lack of personal contact between teachers and students and among students, assessment methods that are inadequate to measure sophisticated learning goals and too little opportunity for students to integrate knowledge from different fields and apply what they learn to the solution of real world problems". No wonder many graduates of Nigerian higher institutions are roaming the streets in urban centres in search of employment. Saraki[6] observes that only an estimated 10 per cent of all graduates produced by the education system is employed annually.

Closely related to the problems of teaching, research and learning is severe short fall in the teacher: student ratio in tertiary institutions in Nigeria. Ibidapo-obe[8] lamented the gross inadequacy of qualified teaching staff in tertiary institutions in Nigeria. He indicated that the teacher-student ratio (TSR) in most programmes in Nigerian Universities fall short of the NUC-approved TSR as shown in Table 1. This problem can be attributed to a number of factors which include inadequate recognition for teachers, poor remuneration, brain-drain, poor motivation, teacher apathy, lack of commitment and so on[9].

A critical factor to the survival of higher education in Nigeria is funding. For many decades, the funding of higher education in Nigeria has been precarious. Abubakar[3] stressed that funding of tertiary education has been a contentious issue and that the budgetary allocation has always been viewed as meager. The budgetary allocation to education between 1999 and 2007 fluctuated between 5.9 per cent and 11.83 per cent of the national budget. However, in 2008 it was increased from 6.07 per cent to 13 per cent [3]. This is far below the UNESCO recommendation that 26 per cent of the total budget of a nation should be allocated to education[9]. The effect according to Omotosho[10] is explicated in many adaptive mechanisms such as:

- Curtailment of laboratory/practical classes;

- Limited number of field trips;

- Curtailment in the attendance of academic conferences;

- Curtailment of the purchase of library books, Chemicals and basic laboratory equipment;

- Freezing of new appointments;

Table 1. Universities student teacher ratios in Nigeria (No.)

Disciplines	NUC guideline	1994/95	1995/96	1996/97	1997/98	1998/99
Administration	20:1	40:1	44:1	44:1	32:1	43:1
Arts	20:1	14:1	16:1	17:1	18:1	16:1
Education	24:1	27:1	24:1	25:1	27:1	22:1
Engineering and technology	09:1	22:1	19:1	18:1	21:1	19:1
Environmental design	10:1	17:1	19:1	16:1	15:1	16:1
Law	20:1	32:1	34:1	22:1	29:1	29:1
Medicine/health sciences	06:1	11:1	11:1	09:1	12:1	11:1
Pharmacy	10:1	25:1	19:1	13:1	12:1	18:1
Sciences	10:1	15:1	13:1	20:1	18:1	16:1
Social sciences	20:1	22:1	22:1	28:1	29:1	30:1

Source: Adapted from Ibidapo-Obe[8]

- Virtual embargo on study fellowship; and

- Reduction in research grants among others.

At the long run, the product of this system is grossly ill-equipped to compete with their contemporaries in developed countries.

Higher education in Nigeria, as is the case in higher education globally, is hard pressed to increase participation from diverse groups. These include marginalised and under-represented groups such as physically challenged persons, visually impaired persons, women, people from educationally disadvantaged areas, rural dwellers amongst others. All these categories are yearning for highly accessible, affordable and qualitative higher education. Yearly, they are jostling for limited spaces in the tertiary institutions. For instance, Awosiyan[11] noted that over one million candidates are struggling for less than 200,000 spaces in the universities annually. While admission rates have increased, it has not kept up with the demand. The National Universities Commission statistics 2007 showed that between 2002-2006 the highest point of admission of universities has been only 15 per cent of the total number of applicants[12]. In this context that new opportunities offered by digital libraries are germane.

3. BENEFITS OF DIGITAL LIBRARIES TO HIGHER EDUCATION IN NIGERIA

Digital libraries powered by digital technologies open doors of great possibilities and opportunities in higher education system in Nigeria. It is a technological innovation that promises a paradigm shift in teaching, research, and learning which is indispensable in 21st century education.

The flexibility of learning provided by digital libraries enhances and advances the informal and distance learning in tertiary institutions. It gives the distance learner the opportunity to attain the highest level of education from their offices or homes. Wallace, *et al*[13] avers that the digital libraries encourage authentic inquiry learning by providing students access to online resources, and such resources permit students to enjoy a flexible learning arrangement which allows them to pursue their own interests within the bounds of the curriculum. Access to online resources 24/7 implies that learners are free to participate in learning activities when time permits and such freedom have greatly increased the opportunities for many students to participate in higher education[14]. Interestingly, many more students who were previously constrained by other commitments are now finding the opportunities to do so[14]. The list includes full-time housewives, women in purdah, prisoners, physically challenged people and all those who have been struggling with 'elusive admission' can achieve their educational aspirations.

The deployment of digital libraries in higher education acts as a catalyst for change in this domain. Digital libraries promote the emergence of educational community that shares thousands and thousands of digital resources in a networked environment. Thus digital libraries encourage resource sharing among members of a scholarly community. These benefits according to Rahman cited by Ikpaahindi[15] include free flow of information resources, better access to information resources, maximisation of information resources, faster provision of information and literature support to users, avoidance of duplication of effort, and reciprocal exchange of local publications.

In conventional educational setting, digital libraries offer both teachers and students the opportunity to utilise digital resources and tools in different formats without being present in the library. Marchionini and Maurer[16] emphasise that: "digital libraries have obvious roles to play in formal learning settings by providing teachers and learners with knowledge bases in a variety of media. In addition to expanding the format of information (e.g multimedia, simulations), digital libraries offer more information than most individuals or schools have been able to acquire and maintain. Digital libraries are accessible in classrooms and from homes as well as in central library facilities where specialised access, display, and tools may be shared. Remote access allows possibilities for vicarious field trips, virtual speakers, and access to rare and unique materials in classrooms and at home. The promise is one of better learning through broader, faster, and better information and communication services".

The capabilities of digital libraries will open doors for opportunities to expand the pool of teachers with varying roles able to provide support for learners in variety of flexible settings[14]. With the changing roles of the teacher Oliver[14] argued that many people who were not highly qualified will participate in the teaching process. These include work place trainers, mentors, specialists from the workplace and so on. Thus a paradigm shifts from didactic teaching roles to more facilitative roles.

In addition to changes from conventional teaching style that revolved around teachers planning and leading students through a series of instructional sequences to achieve a desired learning outcome is the shift in learning style[14]. Digital libraries promote self guided and informal learning[16]. Independent learners are self motivated, innovative and creative thinkers. Echezona[17], *et al.* opined that education that is oriented towards critical thinking and self-directed learning serves the individual over a life-time. In this regard digital libraries support learning as an 'active process of constructing knowledge rather than acquiring knowledge' and learning that facilitates 'personal understanding and the development of meaning in ways which are active and interpretative[14]. The products

of such a learning process that emphasises active construction of knowledge are creative and self-motivated and definitely will distinguish themselves unlike the products of a learning process that perceives the learners as passive recipients of knowledge.

Similarly, the technology of digital libraries helps to reduce the gap between those who have access to information and those who do not. This is often referred to as digital divide. According to Gyamfi[18] digital divide is the disparity between nations who have access to expertise, knowledge, and capacity building tools of the 21st century and those who do not. But through digital libraries the students and faculty could have access to an ocean of information resources, acquire skills and knowledge that will make them productive in the 21st century.

Scholarship thrives on collaboration, cooperation, and communication in a networked environment. A networked environment supports knowledge generation, communication, consumption and dissemination. Wallace, *et al.*[13] stressed that through digital libraries, students collaborate with others to discuss and try out ideas and challenge the ideas of others. No doubt, contact, collaboration, and cooperation provide enabling environment for linkage programmes between and among universities which gives added values to higher education globally[19]. It opens up new frontiers for teaching and learning and facilitates collaborative research among tertiary institution in Nigeria and other parts of the world.

4. CONSTRAINTS TO DEPLOYMENT OF DIGITAL LIBRARIES

A number of factors impede the deployment of digital libraries initiatives in higher education in Nigeria. A fundamental factor hindering the deployment of digital libraries in tertiary institutions is fund. Building and maintaining of digital libraries according to Waters[20] is expensive. Besides the technical aspects, cost, and other considerations include selecting content and managing intellectual property[20] are to be considered. Computers and internet connections are backbone of digital libraries and the cost of procuring them constitute major impediments for the implementation of digital libraries in academic institutions in Nigeria.

The global economic meltdown further exacerbates the situation. In most African countries, Nigeria inclusive the infrastructure that support digital technology initiatives are inadequate[18]. Ani[21],*et al*., remarked that Nigeria is deficient in the acquisition of ICT infrastructures such as computers, telephone lines, VSAT, computer networks and so on. The decision to develop ICT infrastructure is basically political and except the big shots at the corridors of power bring this issue forcefully into the mainstream, the development of digital libraries will remain a pipe dream.

Librarians are the interface between digital libraries and the users. Ani[21], *et al.* pointed out that there is low-level ICT skills among librarians in Nigeria and most of them lack the requisite skills to function in the digital environment.

5. CONCLUSIONS

Higher education in Nigeria has a lot to gain if the development of digital libraries is supported by the stakeholders. The challenges may seem overwhelming but strong and conscious commitment on the part of policy makers and executors is indispensable. Librarians cannot afford to remain on the other side of the digital divide. To ensure the digital inclusion of tertiary institutions in Nigeria, concerted action geared towards the acquisition of ICT infrastructure is imperative. Digital libraries are critical and essential for effective teaching, research and learning in all tertiary institutions in the 21st century therefore it should be a priority. At this juncture, it is pertinent to point out that the development of digital libraries should not be conceived as a panacea for all the challenges of higher education in Nigeria but it is a technology that promises to address some of these challenges.

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