LEVERAGING OPEN EDUCATION AND LIBRARY INFORMATION RESOURCES FOR SUSTAINABLE DEVELOPMENT IN NIGERIA

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Abstract

In Nigeria, there are available human and materials resource yet, the country is faced with numerous challenges which manifest in poor political leadership, deprived economic growth, decayed infrastructural structures as well as deficit and inherited educational system that has been unable to produce desired results. This paper therefore views education as one of the most valuable assets that drives the country toward achieving the United Nations Sustainable Development Goals. The paper critically assesses open education as a system that removes the barriers to education opportunities, increase inclusiveness and access to quality learning opportunity, in addition, to how the Library provides the key information resources that supports and sustains open education aimed at promoting sustainable development. The paper concludes and recommends for investment in infrastructure development, regular training and retraining, formulation and implementation of wide-ranging educational policies among others.

Keyword: Open education, Library resource, Sustainable development, Leveraging, Nigeria

Introduction:

Open education and library information resources are among the most considered valuable tools that support individual and societal growth as well as provides pathway to achieving the United Nations' Sustainable Development Goals (SDG) in Nigeria. Iroka and Ndulaka (2018) maintain that Libraries of all kinds/types (library resources) are educational tool in developing individual and society at large and through their services contribution to education via encouraging reading habit, expanding learning process and development of critical thinking minds, thereby enabling the citizenry live responsibly.

It can be ascertained that globalisation and the enhanced technological development has influenced the trend in which library services support the equally changing drift in teaching and learning nowadays. In the same vein, Ayedele, Oke and Okere (nd) support this fact by highlighting the factors that characterised today's library services to include; no physical boundary, which indicate that the user of a digital library most often does not need to go to the library physically to access and use information resources; people from all over the world can gain access to the same information if an Internet connection is available, providing 24/7 access to library information resources and well as giving multiple access which allows same resources to be used simultaneously by several institutions and users at different locations thereby collaborating open education resources (OER).

According to Hewlett Foundation (2016), the purpose of OER is to remove unnecessary barriers to access knowledge and equalize access to education by making high quality educational materials and opportunities more broadly available. In other word, OER has

become a vital element of inclusive education that resides in the public domain under open license that allowed the access, usage, dissemination and adaptation of teaching and learning as well as providing research resources/materials at no cost. The University of Adelaide (2025) further highlights the reason for OER to include providing immediate and continued access, enhancement of regular course contents, adaptability, increase diversity and continual improvement of teaching and learning education.

Conceivably, Open education and library information resources should provide the synergy for enhancing education and the potential in making teaching and learning more flexible and accessible. Perhaps, the dual offers unrestricted and open access to educational materials, aiding inclusive education and digital equity, ICT literary, in addition to supporting reading programs, innovative research activities that could transform and position Nigeria towards achieving the sustainable development goals. Hence, through the of review of scholarly literature as a methodology, this paper therefore, assessed open education and library information resources provision for transformation and sustainable development in Nigeria.

Open Education Resources (OER)

The concept of Open Education Resources, though relatively new, yet has become widely acceptable mode of fostering education globally. It has also become part of the solution to limited access, rigid and high cost of education. So many narratives have been used by scholars to make known of this new phenomenon. According to Karitu and Kimani (2022) OER provides access through free web-based digital platforms for research, teaching, and learning. UNESCO (2016) maintain that OER are teaching, learning and research materials in any medium – digital or otherwise – that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions.

Furthermore, IFLA (2019) recognizes OER as the teaching, learning and research materials made available for free, and with no or only limited restrictions, to support access to knowledge. Hence, OER provides freely available and openly licensed teaching, learning and research materials or resources that support education and these include resources like audio/videos, textbooks, e-courseware assessments, in addition to MIT OpenCourseWare, OpenLearn of The Open University, UNESCO and Commonwealth of Learning (COL) among others.

Historically, among the first universities to release OER were the University of Tubingen, Germany and The Open University, UK in 1999. Later in 2001, the Massachusetts Institute of Technology, USA released 32 courses with open licenses and established a model in terms of openness of university courseware (Butcher & Moore, 2015). Interestingly, OERs are stored in repositories that are accessed through websites and are categorized based on the type of resource and repository it contained (Allen & Seaman, 2016).

In Africa, studies have shown that embracing of OER have been implemented in certain regions. For instance, The National Open University of Nigeria (NOUN) established in 2001 has been at the forefront of OER adoption in the West African sub-region and Africa at large through its NOUN-OER unit which was established in August 2014 (NOUN, 2016). Besides, the unit later became operational in 2015 with the aim of promoting awareness of Open Educational Resources within NOUN and beyond, also establish an open licensing framework

within NOUN, contribute to global OER repositories, foster research and collaboration in OER, provide capacity building in OER practices, offer high-quality open licensed Massive Open Online Courses (MOOCs) globally, and collaborate with national and international organizations on OER initiatives (NOUN, 2016; NOUN, 2023).

According to NOUN (2016), publications released on the NOUN-OER website are available under the Attribution-ShareAlike 4.0 (CC-BY-SA 4.0) license. Users are required to adhere to the terms of use specified in the NOUN-OER repository, which are provided in various formats for easy accessibility: Open Document Text (ODT) for immediate reuse by students and academics outside NOUN, Portable Document Format (PDF) for computer use and self-printing, and ePub format for reading on tablets and smartphones (NOUN, 2016; Ekong, Essien, & George, 2024).

Open Education Resources and Sustainable Development in Nigeria

Unfortunately, Nigeria and most other Third World Countries universities have not been able to key into the mainstream of sustainable development goals in their curriculum and programmes. However, in a bit to attain the United Nations Sustainable Development Goals (SDG), these countries including Nigeria mapped out policies and strategies that would enhance improved educational provision to the citizenries. At different stages of educational support policies, the Federal Government of Nigeria through the Ministry of Education initiates some moves such as the National Open University of Nigeria (NOUN) as a single mode that promote and support Open and Distance Learning (ODL) educational system in Nigeria and also the Nigerian Higher Education Open Educational Resources (NgHEOER) initiative among others (FGN, 2017; Itasanmi, 2020; Olaiya & Umar, 2023).

According to the study by Ekong, Essien, & George, (2024), part of the Federal Government initiative to support inclusive education include the policy that mandated the higher institutions to create institutional repositories to disseminate teaching, learning, and research materials online, aimed at broadening access and supporting high-quality education and research as well as promoting the adoption of Open Educational Resources (OER). The policy led to the establishment of the Nigeria University System Open Education Resources (NUSOER) website (www.nusoer.org) which became mandatory for all universities nationwide to link to. The initiative is also aimed at achieving the United Nation Sustainable Development Goals-4, 9, 10 and 17, created provide Quality Education (SDG 4); Industry, Innovation and Infrastructure (SDG 9); Reduced Inequalities (SDG 10) and Partnership for the Goals (SDG 17) respectively (Commonwealth of Learning, 2017; NUC, 2017; Ojo et al., 2020; OER Policy, 2017; FGN, 2017)

Studies have shown that OERs can sustain sustainable development in Nigeria through:

1. **Providing and Promoting quality education (SDG 4):** The United Nations SDG 4 is designed to ensuring inclusiveness and equitability in quality education provision and equal access to education from primary to tertiary and the gaining of knowledge and/or skills that will promote the attainment of sustainable development goals. Aliyu (2023), maintain that once quality education is assured, the outcome of it is development goals.
2. **Improve Access:** Free teaching, learning and research materials that are beneficial to the rural and undeserved areas are freely and easily access and used via the OER platforms.

3. **As a tool for capacity building and teachers training mechanism:** OER prepares teachers to excel in teaching profession. It also supports teachers to develop a number of competencies and practices for the benefits of teaching and learning and train them to use and produce OER. Capacity building enhances professionalism, betterment of teaching and learning process and updating teachers' knowledge and skills about OER (Misra, 2012).
4. **Expanding access to education:** OERs support distance and lifelong learning as well as breaks down cost barriers through the provision of free access to learning materials. For instance the National Open University of Nigeria (NOUN) adopted OER platform in expanding access to education even to the rural areas no matter the distance and location.
5. **Enhancing the local content development:** Arguably, local content development can spur the growth and development of the society, therefore, educators may adapt OER to reflect education curriculum to improve relevance as well as teaching and learning outcomes For instance, it ensures the use of local people in executing certain assignment where they possess the required competence, knowledge and expertise in the area such as ICT, Oil and Gas, architecture, aviation, engineering, private security, broadcasting etc. (Okoro & Oko 2022).
6. **Promoting Lifelong Learning (LLL)**: Studies have shown that maintaining education for Sustainable Development (ESD) in African RCEs is being implemented within a perspective of lifelong learning by engaging all possible learning spaces, formal, non-formal and informal, from early childhood to adult life. For example, the TETFund-sponsored open educational resources repositories and National Open University of Nigeria (a mono mode lifelong learning institution) that engage in Adult basic education, Community/citizenship education programmes, Workplace learning, Media education programmes and other social learning systems and Informal ICT enhanced learning environments (Atiti, 2016; Okoro & Oko 2022)
7. **Bridging and reducing educational gap and inequality**: Education is one of the fundamental human rights as it is enshrined in the United Nations Charter of Universal Declaration of Human Rights in 1948. Regrettably, the attainment of this goal has become a big challenge especially among the developing countries. Therefore, the use OER has come to play a role in achieving Education for All (EFA) programme which is an international initiative launched in Jomtien, Thailand, in 1990. It is aimed at bring the benefits of education to "every citizen in every society which being carried out by a broad coalition of national governments, civil society groups, and development agencies such as UNESCO and the World Bank who are committed to achieving the six specific education goals (D'Antoni, 2013),
8. **Stimulating innovation through research and development:** Research, innovation and development are imperative to the achievement of Sustainable Development Goals. But, research ideas and knowledge that lead to innovation is among the leading unrealized opportunities in Nigeria, nevertheless, OER facilitates research, innovation and development via providing free access to research materials, harnessing pool of existing knowledge/studies and nurturing collaboration among scholars/researchers

Challenges of OERs in Nigeria

Despite the perceived supports OER offers towards education and sustainable development. OER is still being faced with a number of challenges namely:

1. **Ineffective national policy framework on OER:** Zaid and Alabi (2020) maintain that a framework that is directed towards the sustainability of OER needs to be developed. Based on this, the absence of formidable policy to support OER is glaring; on the other hand, some of the existing policies appear to be ineffective in their operations thereby creating a visible gap for OER creations and integrations.
2. **Inadequate infrastructural base:** The basic infrastructure such as electricity, computers, internet connectivity and other technological devices are either lacking or in short supply thereby impeding the operations, workability and use of OER. In fact, electricity/power supply in Nigeria has become a nightmare particularly to educational development over the years.
3. **Inadequate funding:** Despite the United Nations' directive of allocating at least 26% benchmark of a country's annual budget to education, funding for education in Nigeria has remain laughable. Disappointingly, Nigeria has never surpassed a 10% allocation in this sector (Odigwe & Owan, 2019). And this has affected the smooth running of OER in particular and education in general in Nigeria.
4. **Low level of digital literacy:** In Nigeria, like some other developing nations, the level of digital literacy among educators and students can impede their ability to effectively use of OERs and the contribution to OER repositories.
5. **Low Institutional support:** The present institutional structures that support faculty to create and share OER are still in clumsy situation nowadays.
6. **Lack of awareness and skills:** Most teachers and learners lack the essential skills to create and use OER effectively; on the other hand, some are not even aware of OERs existence and mode of its operations.
7. **Licensing Copyrights and Intellectual Property Rights Issues:** The Copyrights and Intellectual Property rights stipulate that work(s) belong to the creator(s), therefore, using or going through such work(s) requires careful consideration and understanding, hence in OER, set of codes and licenses always accompany the creation, use and dissemination of information resources. It is also concerned over quality assurance and strict adherence to copyrights. Violation of any of such rights often leads to litigation. There may also be legal issues for platforms hosting OER, which in some circumstances may be made liable for the actions of uploaders (IFLA, 2019)

Libraries/Librarians and support for OERs and SDGs

According to Kalu (2020) libraries play significant and positive role in fostering knowledge sharing culture and innovation initiatives which are considered principal elements of sustainable development. In other words, libraries have become the community hub for information dissemination, supporting lifelong learning and providing digital access. The roles of the library include:

1. **Providing community access point**: Libraries especially academic and public provides free access to information resources to the community of scholars and learners.
2. **Supporting research and literacy:** Libraries provide direct and precise information to researchers as well as encourages literacy by inculcating reading/study habit to the clients.

3. **Partnership and Collaboration:** This provides the opportunity for a library to work together with other libraries through information resources sharing, join project and expanding a wider audience that create enabling platform to aid education in achieving the sustainable development goals According to Dlamini, Mlambo and Msaenya (2021) collaboration provides the opportunity for experts and researchers to partner and fine-tune thoughts and develop strategies for multi-dimensional thinking towards achieving common and uniform practice.
4. **Encouraging OER creation and use:** Libraries contributes to educational enhancement by creating OERs platforms and giving access to users. Studies have shown that the libraries/Librarians are the best support structure for OER in providing educational information resources. According to Kolawole and Bulor (2023) librarians are professionals at locating and sharing materials, and their knowledge of OER is easily transferable. They argued that the future of OER will probably depend on how librarians encourage its uses.
5. **Ensuring OERs availability, accessibility and visibility:** The Library and Librarians work to support education world over. For instance, NOUN created a number of initiatives, platforms and structures aimed at making the institution's virtual library, e-courseware that contains OERs resources available and accessible at the NOUN website.
6. **Advising on copyright matters**: Issues concerning Copyrights and Intellectual Property Rights (IPR) in digital age have been on the increase. Hence the library strives not to be cut in the web of flawing copyrights law in the context of users' generated content. Based on this, the library is also saddled with the responsibility of creating awareness of copyrights laws to protect both users and authors.
7. The Library helps in the digital divide gap bridging through providing information access and capacity building and digital literacy

The Library, Open Education Resources and Sustainable Development

Evidences through the literatures indicate that OERs are becoming more and more vital in the educational sector nowadays. OERs have demonstrated their importance by providing free and equitable access to knowledge, supporting life-long and informal learning, and offering diversified sources of knowledge. According to the William and Flora Hewlett Foundation (2016), OERs include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge. Observably, while a lot of OERs exist, they may not easily be found by teachers, learners or researchers that may have need of them. Hence the Libraries and Librarians then come to bridge the gap by helping to make OERs a reality by making them available, accessible and use in addition to encouraging their production and dissemination.

Challenges of Library in sustaining OER and Sustainable Development Goals in Nigeria

Behind the huge supports provided by the library in achieving SDG lays some barriers restraining its full workability:

1. ***Absence of sustainable strategies***: According to Igbuzor (2011) there is the need to formulate and implement policies and strategies that will promote SDGs which is lacking in the library and other institutions designed to support SDGs
2. ***Incessant adherence to old library tradition:*** Challenges to adaptation are compounded by clinging to old traditions and resistance to change which limit the ability of the libraries to have a long-term planning that could boost SDGs. More importantly, the

rapid digital and technological advances have made some libraries' current equipment irrelevant casting a large carbon footprint on the globe (Khali, Malik & Mahmood 2020).

3. ***Lack of fund:*** Fund is a life wire of any organization, but libraries in Nigeria are continually starved of fund, making it difficult for them to function effectively. According to Ogunmodede, Adio, Aboyade, Ebijuwa, & Oyetola (2023) the 10% grant of the recurrent university budget for the university supposed to go to the development of the library. This is often appearing only on paper, but when it comes to practice, it is far from reality.
4. ***Lack of human capacity building:*** There are shortage and/or inadequate trained Librarians in digital expertise in most libraries in Nigeria
5. Non-inclusion of sustainable education in the curriculum of Library and Information Science school and in its operations and services provision by the Librarians in the field of librarianship.

Prospects for OERs and Library in supporting SDGs in Nigeria

Despite the challenges and loophole facing the SDGs, scholars have suggested some ways through which the Library and the operation of OERs can support speedy attainment of SDGs in Nigeria thus:

1. Enhanced Capacity building for teachers/researchers
2. Enriched strategic policy formulation and implementation
3. Constant monitoring and evaluation of educational development level
4. Increase Investment and development in overall educational infrastructure
5. Encouragement of Public-Private partnership (PPP) in education sector

Conclusion

Open education and libraries resources are foundational for transforming Nigeria's educational landscape to achieving sustainable development goals. While open education resources offer free and open use of materials adapted for teaching, learning, and research, the library forms formidable tool for supporting general educational attainment, growth and sustainable development through the dissemination of information resources to clients. Despite some perceived challenges, this study has shown that open education and library resources have given succor to the provision and promotion of quality education which have in turn support the United Nations' SDG 4 agenda in sustainable development in Nigeria among others.

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