



Received: 10-12-2024  
Accepted: 20-01-2025

## International Journal of Advanced Multidisciplinary Research and Studies

ISSN: 2583-049X

### A Comprehensive Analysis of Open Educational Resource Implementation in Nigerian Higher Education Libraries

<sup>1</sup>Deborah F Iyanda, <sup>2</sup>Najeem O Adelokun

<sup>1</sup>Library Department, Federal College of Education, Iwo, Osun State, Nigeria

<sup>2</sup>Works and Services Department, Federal College of Education, Iwo, Osun State, Nigeria

Corresponding Author: **Deborah F Iyanda**

#### Abstract

The implementation of Open Educational Resources (OER) in Nigerian higher education faces numerous challenges, including inadequate funding, lack of awareness, and technological barriers. These factors hinder the widespread adoption of OER, which has the potential to enhance both educational access and quality. Despite these challenges, the integration of OER could lead to improved teaching and learning outcomes, making it essential to explore the current state of OER adoption in Nigerian institutions. The aim of this study is to evaluate the levels of awareness, integration, barriers, and impacts of OER in Nigerian higher education institutions, with an emphasis on identifying strategies to enhance its implementation. A mixed-methods approach was employed, collecting data from 1,450 respondents, including librarians, educators, administrators, and students, through a structured questionnaire. The findings indicate that while OER has contributed to increased educational

accessibility and pedagogical flexibility, significant barriers persist, such as limited awareness, inadequate funding, and technological limitations. Despite these challenges, the majority of respondents reported a positive impact on educational outcomes resulting from OER integration. In light of these findings, the study advocates for the development of clear OER policies, increased funding for OER initiatives, enhanced training for faculty and staff, encouragement of faculty participation in OER development, improved technological infrastructure, and strengthened collaboration among institutions. Therefore, addressing these challenges through targeted policies and strategies will enable Nigerian higher education institutions to fully leverage the advantages of OER, thereby enhancing both access to and the quality of education across the country.

**Keywords:** Collaboration, Faculty Involvement, Funding, Institutional Policies, OER Adoption, Technological Barriers

#### Introduction

Open Educational Resources (OER) are defined as teaching, learning, and research materials that are freely accessible and openly licensed, thereby permitting their use, adaptation, and redistribution with minimal or no restrictions. The concept of OER was initially popularized by UNESCO in 2002, highlighting its potential to enhance access to quality education and promote collaboration among educators on a global scale (UNESCO, 2002) <sup>[24]</sup>. OER typically include digital textbooks, lecture notes, syllabi, assignments, assessments, and multimedia resources, which are made available through various platforms (Nipa & Kermanshachi, 2020; Raju, 2023) <sup>[14, 20]</sup>. The integration of OER in higher education has proven to be transformative, offering a cost-effective alternative to traditional instructional materials. For many students, particularly in developing countries such as Nigeria, the high cost of textbooks and learning resources represents a significant barrier to education. OER mitigates these challenges by enabling free access to quality materials, thereby improving educational equity and inclusivity (Croft & Brown, 2020) <sup>[5]</sup>. For instance, research conducted by Hilton (2020) <sup>[7]</sup> and Kelly (2014) <sup>[10]</sup> has demonstrated that institutions that adopt OER experience cost savings for students while maintaining the quality of education. Beyond considerations of affordability, Open Educational Resources (OER) promote pedagogical innovation and flexibility. Educators have the capacity to customize OER to meet specific curricular requirements, thereby fostering creativity and adaptability in their teaching practices (Marín *et al.*, 2022) <sup>[12]</sup>. Furthermore, the collaborative nature of OER facilitates the sharing of resources among educators and institutions, enabling the development of knowledge networks and a collective

approach to addressing educational challenges. This initiative is in alignment with Sustainable Development Goal (SDG) 4, which highlights the importance of inclusive and equitable quality education, as well as lifelong learning opportunities for all (UNESCO, 2023) [23].

In the Nigerian context, the integration of OER has gained momentum as higher education institutions strive to expand access to education while addressing challenges such as inadequate funding and resource scarcity. Efforts like the Nigerian Research and Education Network (NgREN) and the National Open University of Nigeria (NOUN) have been pivotal in promoting OER adoption in the country. However, barriers such as limited technological infrastructure, lack of awareness, and resistance to change continue to impede widespread adoption (Adelakun & Omolola, 2020; Birabil & Ogeh, 2020) [2, 3]. The significance of Open Educational Resources (OER) transcends mere economic and pedagogical advantages; it also promotes academic collaboration and facilitates the dissemination of indigenous knowledge. For higher education institutions in Nigeria, the strategic utilization of OER can effectively address the disparity between resource availability and educational demand, thereby enabling these institutions to deliver quality education in a cost-effective and sustainable manner.

Despite the transformative potential of Open Educational Resources (OER) to enhance educational access, reduce costs, and promote knowledge sharing, the adoption and implementation of OER in Nigerian higher education libraries encounter substantial challenges. OER offers a cost-effective alternative to expensive instructional materials, enabling educators and students to access high-quality, openly licensed educational content. However, in Nigeria, where higher education is hindered by resource constraints and technological limitations, the effective adoption of OER continues to be a significant concern.

One of the primary challenges is the lack of adequate technological infrastructure to support OER. Many higher education institutions in Nigeria struggle with unreliable internet connectivity, limited access to computers, and insufficient bandwidth, all of which are critical for accessing and utilizing digital OER (Adelakun, 2022; Eli-Chukwu *et al.*, 2023; Iyanda *et al.*, 2016) [1, 6, 8]. This digital divide disproportionately affects rural institutions, further widening educational inequalities. Awareness and capacity-building gaps also hinder the adoption of Open Educational Resources (OER). Many educators, librarians, and students are unaware of the existence and benefits of OER. Even when awareness is present, a lack of technical skills and training in finding, evaluating, and adapting OER hinders its effective integration into teaching and learning processes (Mtebe & Raisamo, 2014; Shomoye *et al.*, 2023) [13, 21]. Additionally, resistance to change and a preference for traditional learning resources among faculty and librarians pose another barrier. Some stakeholders are reluctant to adopt Open Educational Resources (OER) due to concerns regarding quality, copyright compliance, and the credibility of open resources (Iyanda & Opele, 2015; Ojo *et al.*, 2022) [9, 17]. Furthermore, the lack of a strong institutional framework or policy to guide OER adoption exacerbates these challenges. Moreover, the funding limitations encountered by higher education libraries in Nigeria hinder their capacity to invest in the necessary infrastructure, training, and awareness campaigns for effective Open

Educational Resource (OER) implementation (Opele *et al.*, 2020) [19]. Additionally, there is challenge of maintaining and updating OER to address the evolving academic and cultural needs of Nigerian students and educators. To address these issues, it is essential to investigate the specific barriers faced by higher education libraries in Nigeria in adopting Open Educational Resources (OER) and to identify strategies to overcome these obstacles. Understanding these challenges can inform the development of effective policies and practices, ensuring that the potential of OER to enhance education is realized within the Nigerian context.

### Literature Review

The study conducted by Zaid & Alabi (2021) [25] investigates the increasing significance of Open Educational Resources (OERs) in improving teaching and learning within Nigerian universities. It assesses the opportunities, challenges, and key stakeholders associated with OER initiatives, emphasizing the necessity for a sustainable framework, particularly in light of Nigeria's budgetary constraints in higher education. Employing a mixed-methods approach, the study analyzes data collected from academics and librarians to offer recommendations for libraries aiming to develop, implement, and evaluate OER initiatives despite limited resources. Olufunke and Adegun (2014) [18] conducted a study on the utilization of Open Educational Resources (OER) among undergraduate students at Nigerian universities and its potential to enhance educational quality. The research employed a descriptive design to analyze five specific research questions. The findings indicated a moderate level of awareness regarding OER, alongside challenges such as inconsistent electricity supply, limited internet access, and a lack of familiarity with OER platforms. Despite these barriers, OER proved beneficial for knowledge sharing, access to high-quality materials, and capacity building. The authors recommended improving internet connectivity, providing training on OER, and integrating online resources into the learning process.

Ofogbu *et al.* (2021) [16] investigated the utilization and publication of Open Educational Resources (OER) by courseware developers in Nigeria's dual-mode universities, which provide both face-to-face and open and distance learning (ODL) courses. The study employed a descriptive survey involving 73 course developers and revealed a limited use and publication of OER in institutional repositories (IR) due to significant barriers, particularly in the publishing process. Recommendations included increasing awareness and offering incentives to promote greater OER adoption and publication of OER, as well as improving access to high-quality educational resources. Luo *et al.* (2020) [11] conducted a systematic review of 51 studies on Open Educational Resources (OER) across five continents, analyzing global trends and challenges. The study identified significant barriers to OER adoption, including issues related to discoverability, sustainability, and remixing. While it found no substantial difference in learning outcomes when compared to traditional content, it noted that well-designed OER strategies could enhance the learning experience. The review highlights existing gaps in research, implementation challenges, and opportunities for future exploration to advance the integration of OER in education.

Carson (2020) [4] investigated the barriers faced by business faculty in Ontario colleges when incorporating Open

Educational Resources (OER) into their courses. The study, using a mixed-method approach with surveys and follow-up interviews from 72 respondents, identified challenges such as lack of suitable resources, awareness, knowledge, and institutional support. Faculty suggested solutions, including professional development, creation of high-quality content, dedicated time for resource creation, and enhanced collaboration. The research highlights the need for tailored institutional support to overcome these barriers and encourage OER adoption. Tlili *et al.* (2022)<sup>[22]</sup> conducted a systematic literature review to explore Open Educational Resources (OER) trends in Africa, revealing three key findings: OER adoption is limited to specific African countries, requiring more research and collaboration for educational equity; most initiatives focus on OER creation, neglecting dissemination and open educational practices; and challenges such as culture, language, and personality impact OER adoption alongside typical issues like infrastructure. The study calls for increased cross-country collaboration and attention to cultural and individual differences to promote OER in Africa and foster social justice. With the gaps in Open Educational Resources (OER) highlighted in the literature review, it becomes imperative to undertake the proposed research to address these issues comprehensively.

### Research Objectives

The research aims to explore the adoption and implementation of Open Educational Resources (OER) in Nigerian higher education libraries, with a focus on identifying challenges, opportunities, and strategies for improvement. Specifically, the objectives of this study are as follows:

1. To examine the level of awareness and understanding of OER among librarians, faculty, and students in Nigerian higher education institutions.
2. To identify the key challenges and barriers to the adoption and implementation of OER in Nigerian higher education libraries.
3. To assess the impact of OER on teaching, learning, and research in Nigerian higher education institutions.
4. To evaluate the availability and accessibility of technological infrastructure required for effective OER adoption.
5. To investigate the policies and institutional frameworks in place to support OER integration in higher education libraries.
6. To explore the perceptions of stakeholders regarding the quality, credibility, and usefulness of OER.
7. To propose actionable recommendations and strategies for overcoming challenges and enhancing the adoption and implementation of OER in Nigerian higher education libraries.

### Research Questions

The study seeks to address the following research questions:

1. What is the level of awareness and understanding of OER among librarians, faculty, and students in Nigerian higher education institutions?
2. What are the primary challenges and barriers to the adoption and implementation of OER in Nigerian higher education libraries?
3. How does the integration of OER impact teaching, learning, and research in Nigerian higher education

institutions?

4. What is the state of technological infrastructure and its role in facilitating OER adoption in higher education libraries?
5. What policies and institutional frameworks exist to support the effective implementation of OER in Nigerian higher education libraries?
6. How do stakeholders perceive the quality, credibility, and usefulness of OER for academic purposes?
7. What strategies can be developed to overcome challenges and improve the adoption and utilization of OER in Nigerian higher education libraries?

### Methodology

This section outlines the methodology for studying the adoption and impact of Open Educational Resources (OER) in Nigerian higher education libraries. It covers research design, population and sample, data collection instruments, validity and reliability, data collection process, and data analysis methods, employing both quantitative and qualitative approaches.

#### A. Research Design

This study adopts a descriptive survey research design, employing both quantitative and qualitative approaches to explore Open Educational Resources (OER) awareness, integration, barriers, and their impact on education in Nigerian higher education libraries. Quantitative data was collected via structured questionnaires, while qualitative insights were gathered through open-ended responses and document analysis.

#### B. Population and Sample

The study population consisted of 1,450 respondents drawn from librarians, educators/faculty, administrators, and students across universities, polytechnics, and colleges of education in Nigeria.

#### C. Data Collection Instrument

The study utilized a structured questionnaire to gather data on Open Educational Resources (OER) in Nigerian higher education. The questionnaire included four sections: Demographic information (role, institution type, location, years of affiliation), OER awareness and integration (awareness levels, training sources, institutional policies), barriers to adoption (funding, technological challenges, faculty resistance, copyright issues), and the impact of OER on education (accessibility and pedagogical flexibility). This comprehensive instrument effectively captured relevant data to analyze OER adoption and its influence in academic institutions.

#### D. Validity and Reliability

The questionnaire was reviewed by experts in education and library science to ensure content validity. A pilot test was conducted to refine the instrument and Cronbach's alpha was used to measure internal consistency, with a reliability coefficient of 0.85.

#### E. Ethical Considerations

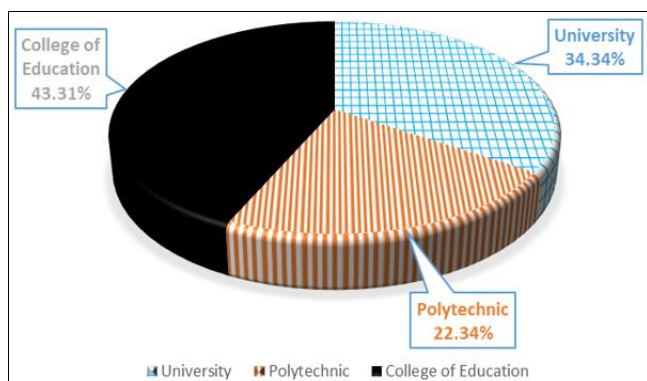
The study adhered to ethical guidelines by ensuring informed consent from all participants, guaranteeing confidentiality of responses, and maintaining anonymity. Participants were fully informed about the study's purpose and their voluntary involvement. The research also ensured no harm or discomfort, aligning with ethical research standards and best practices.

### Results and Discussion

**Table 1:** Demographic Information of Respondents

Demographic Variable	Categories	Frequency (n =1450)
Role within Institution	Librarian	1004
	Educator/Faculty	272
	Administrator	40
	Student	134
Institution Type	University	498
	Polytechnic	324
	College of Education	628
	Location	
Location	Northern Nigeria	235
	Southern Nigeria	217
	Eastern Nigeria	233
	Western Nigeria	765
Years of Affiliation	Less than 1 year	34
	1-3 years	138
	4-6 years	422
	7-10 years	521
	Over 10 years	335

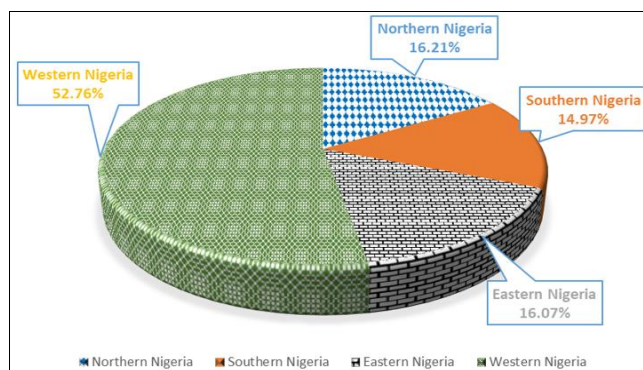
Table 1 provides a comprehensive overview of the study participants, highlighting the diversity in their roles, institutional affiliations, and geographical locations. The majority of respondents were librarians, with 1004 participants, followed by educators/faculty (272), students (134), and administrators (40). The distribution across institution types was as follows: 498 from universities, 324 from polytechnics, and 628 from colleges of education. Geographically, most respondents were from Western Nigeria (765), with Northern Nigeria having 235, Eastern Nigeria 233, and Southern Nigeria 217. Additionally, 521 participants had 7-10 years of affiliation, while 422 had 4-6 years, and 335 had over 10 years of experience, ensuring that the findings reflect a broad range of perspectives on OER adoption in Nigerian higher education libraries.



**Fig 1:** Pie Chart Showing the Distribution of Respondents by Type of Institution

Fig 2, illustrates the percentage distribution of respondents across three institution types: Universities, polytechnics, and colleges of education. Colleges of education represent the highest proportion at 43.31%, followed by universities at 34.34%, and polytechnics at 22.34%. This distribution highlights the varying levels of participation from these institution types, providing insights into the research sample

composition.



**Fig 2:** Pie Chart Showing the Distribution of Respondents by Geopolitical Zones in Nigeria

Fig 3, depicts the percentage distribution of respondents across four zones: Western, Northern, Eastern, and Southern Nigeria. Western Nigeria has the highest representation at 52.76%, followed by Northern Nigeria with 16.21%, Eastern Nigeria at 16.07%, and Southern Nigeria at 14.97%. This chart highlights the regional variation in respondent participation, with Western Nigeria dominating the sample, which could reflect demographic or institutional factors influencing the study.

**Table 2:** Open Educational Resources Awareness and Integration

OER Awareness	Categories	Frequency (n = 1450)
Are you aware of OER?	Yes	185
	No	1265
How did you learn about OER?	Institutional workshops/training	376
	Online resources	252
	Peer/Colleague	287
	Conferences/Seminars	535
Does your institution have an OER policy?	Yes	650
	No	332
	Not sure	468
Level of OER integration	Very High	227
	High	308
	Moderate	462
	Low	201
	Very Low	252

Table 2 outlines the awareness and integration of Open Educational Resources (OER) among the study participants. Out of 1450 respondents, 185 were aware of OER, while 1265 were not. Regarding how participants learned about OER, the majority discovered it through conferences and seminars (535), followed by institutional workshops/training (376), peer/colleague discussions (287), and online resources (252). In terms of institutional support, 650 respondents confirmed that their institution had an OER policy, while 332 disagreed, and 468 were uncertain. As for OER integration, 227 reported very high integration, 308 high, 462 moderate, 201 low, and 252 very low, reflecting varied levels of OER adoption across institutions.

**Table 3:** Barriers to Open Educational Resources Adoption

Barrier	Frequency (n = 1450)
Lack of Awareness	349
Inadequate Funding	845
Technological Barriers	421
Lack of Institutional Support	86
Resistance from Faculty/Staff	388
Limited Access to OER	298
Legal and Copyright Issues	187

Table 3 highlights the main barriers to the adoption of Open Educational Resources (OER) among respondents. The most significant barrier identified was inadequate funding, with 845 respondents citing it as a challenge. Technological barriers were also a major concern, reported by 421 participants. Lack of awareness (349), resistance from faculty/staff (388), and limited access to OER (298) were other notable obstacles. Legal and copyright issues were cited by 187 respondents, while 86 participants mentioned a lack of institutional support as a barrier to OER adoption.

**Table 4:** Impact of Open Educational Resources on Education

Impact of OER	Categories	Frequency (n=1450)
Educational Accessibility	Significantly improved	1104
	Moderately improved	340
	No Impact	2
	Moderately Hindered	4
	Significantly Hindered	0
Pedagogical Flexibility	Yes, significantly	655
	Yes, moderately	774
	No impact	18
	Decreased flexibility	3

Table 4 illustrates the impact of Open Educational Resources (OER) on educational accessibility and pedagogical flexibility. A significant majority of respondents (1104) reported that OER had significantly improved educational accessibility, while 340 noted moderate improvements. Only 2 participants observed no impact, and 4 reported moderate hindrance, with none indicating significant hindrance. In terms of pedagogical flexibility, 655 participants experienced significant improvement, while 774 experienced moderate improvement. A small number of respondents (18) saw no impact, and 3 reported decreased flexibility.

**Table 5:** Cross-tabulation of Type of Institution and OER Integration

Type of Institution	Very High	High	Moderate	Low	Very Low	Total
University	135	212	85	45	21	498
Polytechnic	24	49	99	80	72	324
College of Education	49	89	175	188	127	628
<b>Total</b>	208	350	359	313	220	1450

Table 5 presents the distribution of OER integration levels across three types of institutions: Universities, polytechnics, and colleges of education. Universities show a relatively balanced integration, with the majority (212 respondents) reporting high integration, followed by 135 reporting very high integration. Polytechnics demonstrate lower levels of integration, with a notable 99 respondents reporting moderate integration, and a higher proportion of respondents (72) reporting very low integration. Colleges of education

show a mix of moderate and low integration, with 175 reporting moderate and 188 reporting low integration. Overall, the total respondents across all institutions (1450) indicate that most respondents perceive OER integration at moderate levels (359 respondents), suggesting room for improvement in OER adoption across different institution types.

**Table 6:** Cross-tabulation of Respondents Location and OER Integration Levels

Location	Very High	High	Moderate	Low	Very Low	Total
Northern Nigeria	35	55	70	50	25	235
Southern Nigeria	30	50	60	50	27	217
Eastern Nigeria	45	75	85	20	8	233
Western Nigeria	98	170	144	193	160	765
<b>Total</b>	208	350	359	313	220	1450

Table 6 presents the distribution of respondents based on their location and reported levels of Open Educational Resources (OER) integration. The data highlights the regional variations in Nigeria, with respondents from Northern, Southern, Eastern, and Western Nigeria. In Northern Nigeria, with a total of 235 respondents, the majority report moderate OER integration (70), followed by 55 respondents indicating high integration. Southern Nigeria, with 217 respondents, shows a similar pattern, with 60 respondents reporting moderate integration and 50 respondents reporting high integration. Eastern Nigeria, with 233 respondents, has the highest number reporting moderate integration (85), while 75 respondents report high integration. Western Nigeria, with 765 respondents, has a significant number reporting high integration (170), followed by 144 respondents reporting moderate integration, and 98 respondents reporting very high integration. Overall, Western Nigeria exhibits the most significant engagement with OER, followed by Eastern, Southern, and Northern Nigeria, indicating regional differences in OER adoption and integration.

**Conclusion**

This research has provided valuable insights into the current state of Open Educational Resources (OER) within Nigerian higher education institutions. Despite limited awareness, with only 185 respondents reporting familiarity with OER out of a sample of 1450, the integration of OER into educational practices is steadily progressing, though at different levels. A significant barrier identified was inadequate funding (845 respondents), which underscores the need for stronger financial support to facilitate broader OER adoption. Technological challenges (421) and resistance from faculty (388) further hinder the effective implementation of OER, suggesting that targeted training and policy interventions are necessary to address these issues. Interestingly, the positive impact of OER on educational accessibility was evident, with 1104 respondents acknowledging a significant improvement. Additionally, 655 respondents noted enhanced pedagogical flexibility, showcasing the value of OER in enriching teaching and learning experiences. Cross-tabulation analysis revealed regional disparities in OER integration, with Western Nigeria showing the highest levels of OER use. This study emphasizes the need for Nigerian institutions to create supportive policies, provide adequate resources, and engage stakeholders in awareness campaigns to overcome the

barriers identified. The findings highlight the transformative potential of OER to enhance education in Nigeria, provided that the challenges identified in this study are addressed. Ultimately, fostering a collaborative environment is crucial to the successful integration of OER in Nigerian higher education.

### Recommendations

Despite the considerable potential of Open Educational Resources (OER) in enhancing educational accessibility and pedagogical flexibility, several challenges such as insufficient funding, lack of awareness, and technological barriers have hindered their widespread adoption. To address these challenges and facilitate the effective use of OER in Nigerian higher education, the following recommendations are proposed:

1. Institutions should develop and strengthen OER policies to provide a clear and structured framework for their adoption and integration.
2. Sufficient financial resources should be allocated to support the creation, integration, and maintenance of OER initiatives, ensuring their sustainability and wider reach.
3. Training and workshops should be organized for faculty, staff, and students to enhance awareness and competence in using OER effectively.
4. Institutions should encourage faculty and staff to create, share, and collaborate in developing OER, fostering a culture of resource sharing and academic collaboration.
5. Technological infrastructure needs to be enhanced to ensure reliable and accessible platforms for creating and using OER.
6. Strengthening collaboration between institutions will help share resources and promote joint educational efforts, improving the overall quality and accessibility of OER.

### Acknowledgments

This research was supported by TETFUND Grant.

### References

1. Adelakun NO. Impact of Digital Technology and The Need for Periodical Review of Educational Curriculum in Nigeria Tertiary Institutions. *iKSP Journal of Computer Science and Engineering*. 2022; 2(1):14-19. Doi: <https://doi.org/10.5281/zenodo.6028709>
2. Adelakun NO, Omolola SA. A Pragmatic Study on E-Learning System for Higher Education in Developing Countries, *Proceedings of the 1st National Conference Nigerian Society of Engineer, Ilaro Branch, November 2020*, 2020, 14-20. Doi: <https://dx.doi.org/10.2139/ssrn.3856391>
3. Birabil ST, Ogeh OM. Education in Nigeria: Challenges and way forward. *International Journal of Academic Research and Reflection*. 2020; 8(1):42-48.
4. Carson B. Breaking barriers: Understanding and removing barriers to OER use (Master's thesis, Royal Roads University (Canada)), 2020.
5. Croft B, Brown M. Inclusive open education: presumptions, principles, and practices. *Distance Education*. 2020; 41(2):156-170. Doi: <https://doi.org/10.1080/01587919.2020.1757410>
6. Eli-Chukwu NC, Igbokwe IC, Ifebude B, Nmadu D, Iguodala W, Uma U, *et al.* Challenges confronting e-

- learning in higher education institutions in Nigeria amid Covid-19. *Journal of Applied Research in Higher Education*. 2023; 15(1):238-253. Doi: <https://doi.org/10.1108/JARHE-09-2021-0346>
7. Hilton III J. Open educational resources, student efficacy, and user perceptions: A synthesis of research published between 2015 and 2018. *Educational Technology Research and Development*. 2020; 68(3):853-876. Doi: <https://doi.org/10.1007/s11423-019-09700-4>
8. Iyanda DF, Opele JK, Akintunde BO. A study of ICT literacy skills and internet usage pattern of library users in Osun State College of Education, Ila-Orangun, Nigeria. *Journal of Management and Technology Study Literacy Skills and Internet Maiden Edition*, 2016, 137-149.
9. Iyanda DF, Opele JK. Managing Print and Non-Print Resources in Nigerian Tertiary Institutions. *Elixir Lib. Sci*. 2015; 85:34452-34456.
10. Kelly H. A path analysis of educator perceptions of open educational resources using the technology acceptance model. *The International Review of Research in Open and Distributed Learning*. 2014; 15(2). Doi: <https://doi.org/10.19173/irrodl.v15i2.1715>
11. Luo T, Hostetler K, Freeman C, Stefaniak J. The power of open: Benefits, barriers, and strategies for integration of open educational resources. *Open Learning: The Journal of Open, Distance and e-Learning*. 2020; 35(2):140-158. Doi: <https://doi.org/10.1080/02680513.2019.1677222>
12. Marín VI, Zawacki-Richter O, Aydin CH, Bedenlier S, Bond M, Bozkurt A, *et al.* Faculty perceptions, awareness and use of open educational resources for teaching and learning in higher education: A cross-comparative analysis. *Research and Practice in Technology Enhanced Learning*. 2022; 17(1):11. Doi: <https://doi.org/10.1186/s41039-022-00185-z>
13. Mtebe JS, Raisamo R. Investigating perceived barriers to the use of Open Educational Resources in higher education in Tanzania. *International Review of Research in Open and Distributed Learning*. 2014; 15(2):43-65. Doi: <https://doi.org/10.19173/irrodl.v15i2.1803>
14. Nipa TJ, Kermanshachi S. Assessment of open educational resources (OER) developed in interactive learning environments. *Education and Information Technologies*. 2020; 25(4):2521-2547. Doi: <https://doi.org/10.1007/s10639-019-10081-7>
15. Ochieng VO, Gyasi RM. Open educational resources and social justice: Potentials and implications for research productivity in higher educational institutions. *E-Learning and Digital Media*. 2021; 18(2):105-124. Doi: <https://doi.org/10.1177/2042753021989467>
16. Ofoegbu OT, Asogwa UD, Ogbonna CS. Open educational resources (OERs) and courseware development in dual-mode universities in Nigeria. *Educational Technology Research and Development*. 2021; 69(3):1811-1833. Doi: <https://doi.org/10.1007/s11423-021-10014-7>
17. Ojo OD, Salawu IO, Adedapo A. Assessment of Students' Awareness and Utilisation of Open Educational Resources in Education in Selected Nigerian Universities. *African Journal of Educational Management*. 2022; 23(1):203-221.

18. Olufunke AC, Adegun OA. Utilization of open educational resources (OER) and quality assurance in universities in Nigeria. *European Scientific Journal*. 2014; 10(7).
19. Opele JK, Adeyeye YS, Iyanda DF, Olagoke MA. Exploring library user perception on the link between knowledge economy and sustainable development. *International Journal of Research and Innovation in Social Science (IJRISS)*. 2020; 4(5):136-144
20. Raju DST. A Study: Importance of Open Educational Resources (OER) for Teaching and Learning Process. *Idealistic Journal of Advanced Research in Progressive Spectrums (IJARPS)*. 2023; 2(1):13-17. eISSN-2583-6986
21. Shomoye MA, Adelokun NO, Adebisi KL. Exploring the Use of Electronic Resources for Undergraduate Learning at the National Open University of Nigeria in Kwara State, *WSEAS Transactions on Computers*. 2023; 22:302-310. Doi: <http://dx.doi.org/10.37394/23205.2023.22.34>
22. Tlili A, Altinay F, Huang R, Altinay Z, Olivier J, Mishra S, *et al.* Are we there yet? A systematic literature review of Open Educational Resources in Africa: A combined content and bibliometric analysis. *PLoS ONE*. 2022; 17(1):e0262615. Doi: <https://doi.org/10.1371/journal.pone.0262615>
23. UNESCO. The Sustainable Development Goals Report 2023: Special edition, 2023. Retrieved from: <https://unstats.un.org/sdgs/report/2023/The-Sustainable-Development-Goals-Report-2023.pdf>
24. UNESCO. Forum on the impact of open courseware for higher education in developing countries. Final report, 2002. Retrieved from: <https://unesdoc.unesco.org/ark:/48223/pf0000128515>
25. Zaid YA, Alabi AO. Sustaining open educational resources (OER) initiatives in Nigerian universities. *Open Learning: The Journal of Open, Distance and e-Learning*. 2021; 36(2):181-197. Doi: <https://doi.org/10.1080/02680513.2020.1713738>